Supportive Care in Cancer (2019) 27 (Suppl 1):S1–S302
https://doi.org/10.1007/s00520-019-04813-1

ABSTRACTS

Abstracts for MASCC/ISOO Annual Meeting 2019

Supportive Care in Cancer

MASCC/ISOO

ANNUAL MEETING ON
SUPPORTIVE CARE IN CANCER

San Francisco, California, USA
21-23 June 2019

MASCC™
Multinational Association of Supportive Care in Cancer

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INTERNATIONAL SOCIETY of ORAL ONCOLOGY

Supportive Care Makes Excellent Cancer Care Possible

This supplement was not sponsored by outside commercial interests. It was funded entirely by the publisher and the Societies.

eP	Antiemetics	eP001 - eP029
eP	Bone	eP030 - eP035
eP	Cancer pain	eP036 - eP067
eP	Cancer symptoms	eP068 - eP143
eP	Digital health	eP144 - eP168
eP	Education	eP169 - eP208
eP	Fatigue	eP209 - eP221
eP	Geriatrics	eP222 - eP234
eP	Hemostasis	eP235 - eP239
eP	Mucositis	eP240 - eP273
eP	Neurological complications	eP274 - eP284
eP	Neutropenia, infection and myelosuppression	eP285 - eP299
eP	Nutrition and cachexia	eP300 - eP316
eP	Oral care	eP317 - eP336
eP	Other	eP337 - eP383
eP	Palliative care	eP384 - eP456
eP	Pediatrics	eP457 - eP475
eP	Psychosocial	eP476 - eP531
eP	Rehabilitation, survivorship and quality of life	eP532 - eP640
eP	Sexual health	eP641 - eP656
eP	Skin toxicities	eP657 - eP680
eP	Toxicities of anti-cancer treatments	eP681 - eP726
JS	AFSOS / MASCC / NICSO Joint Session: Developing Supportive Care in Cancer: A European Perspective	JS01 - JS03
JS	EONS / MASCC / ONS Joint Session: How Patients Feel Really Matters - Challenges and Opportunities for Oncology Nursing in a Digital Era	JS04 - JS07
JS	ISOPP / MASCC Joint Session: Biosimilars	JS08 - JS10
JS	JASCC / MASCC Joint Session: Cancer Survivorship in Adolescents and Young Adults (AYA)	JS11 - JS13
JS	MASCC / SIOG Joint Session: Managing the Oldest and Frailest Oncology Patients	JS14 - JS16
ME	Meet the Experts: Developing and Submitting Supportive Care Practice Guidelines to MASCC for Approval/Endorsement	ME01
PL	Plenary Session 2: New Treatments, New Toxicities	PL01
PS	Parallel Session 01: Emerging Themes	PS01 - PS04
PS	Parallel Session 02: Implementing the MASCC Cancer-Related Fatigue Treatment Guidelines for the Younger and Geriatric Population	PS05 - PS06
PS	Parallel Session 03: Sexual Health in Head and Neck Cancer	PS07
PS	Parallel Session 04: Digital Health in Action	PS08 - PS10
PS	Parallel Session 05: When Carers Need Care: Burnout in Cancer Healthcare Providers and Caregivers	PS11 - PS15
PS	Parallel Session 06: Mucositis Management: Systematic Review - One Goal, Various Approaches	PS16 - PS17
PS	Parallel Session 07: Updates in Hemostasis	PS18 - PS20
PS	Parallel Session 08: New Strategies for Managing Neurotoxic Treatment-Related Complications	PS21 - PS23
PS	Parallel Session 09: The Changing Face of Febrile Neutropenia	PS24 - PS26
PS	Parallel Session 10: Let's Talk About Sex	PS27 - PS31
PS	Young Investigator Parallel Session	PS32 - PS35
PS	ISOO Parallel Session 1: Smoking Cessation	PS36 - PS37
PS	Parallel Session 11: Complications of Immunotherapy	PS38 - PS39
PS	Parallel Session 12: Opioids for Cancer Pain - Keep Calm and Carry On?	PS40 - PS43
PS	Parallel Session 13: Cancer Survivorship Across the Life Cycle	PS44 - PS46
PS	ISOO Parallel Session 3: Dysphagia in Head and Neck Cancer Patients: Evaluation and Management	PS47
PS	Parallel Session 14: Cancer Survivorship (Debate): Every Cancer Survivor Must Have a Written Survivorship Care Plan	PS48
PS	Parallel Session 15: The ABCs of Palliative Cancer Care in the Digital Age: Analytics, Best Practices, and Criteria for Referral	PS49 - PS52
PS	Parallel Session 16: Sexual Health: A Multi-dimensional Problem	PS53 - PS55
PS	Parallel Session 17: The Changing Face of Palliative Care	PS56 - PS59
PS	Parallel Session 18: Controversial Issues in Antiemetic Control	PS60 - PS63
PS	Parallel Session 19: Hot Topics in Palliative Care	PS64 - PS66
PS	Parallel Session 20: Psychosocial and Functional Consequences of Skeletal Toxicity	PS67 - PS69
W	Workshop 2: Complications of Immunotherapy	W01

JS01
Dedicated Supportive Care Units (SCUs): An Italian Model

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2009 National Cancer Institute of Milano: *a outpatient dedicated SCU* (14 armchairs and two beds) was born as a clinical practice, teaching and research (pharmacological and non pharmacological) center, aimed to improve adherence to treatment protocols in terms of dose- intensity and dosing interval through prevention, detection, treatment and study of anti-cancer treatment-related-toxicity of patients starting from diagnosis and during trajectory of anticancer therapies. The SCU is part of the Medical Oncologic & Haematology Department.

Staff: 3 oncologists, 1 geriatrician, 1 internist all expert in pain management, 4 RNs, 2 health technician and 7 volunteers working with Chaplain, Psychologists Social Workers, cardiologists, endocrinologists, infectious diseases, dermatologists, nutritionists, dentistry, palliative care physicians.

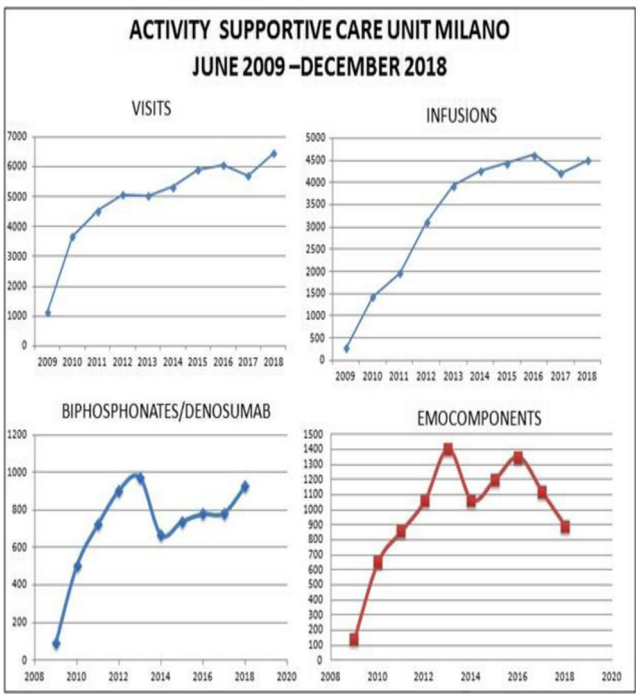
Following telephone requests made by treating physicians, patients are accepted at the SCU on the same day (emergency) or the day after, planning the following accesses.

Patients undergo interview, physical examination, and symptoms assessment by ESAS before to receive personalized therapies after discussion of case with the referring oncologists.

For severe distress or for research reasons also spiritual, financial needs, dignity and hope are assessed. Caregivers and family members are well supported too. **Activity:** from Monday to Friday 8 am to 5 pm. On Saturday and Sunday and during Holidays from 8.30 to 12.30 the nurses of different wards and the physician on duty in hospital take care for the out- patients with planned therapies (antibiotics, antivirals, transfusions, Hydration etc).

The setting provides a dedicated Email.

Only patients with severe toxicity are hospitalized in the Oncologic or Radiotherpy wards.



JS02
Supportive Care Teams Outside the Hospital: A French Model

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Patient needs for supportive care are increasing with therapeutic progresses (development of adjuvant treatments for patients with localized tumor, improvement of survival for those with metastatic disease), with patients spending less time in hospital because they can get their treatment ambulatory (immunotherapies) or at home (oral). Getting access to supportive care outside hospital is therefore mandatory. This raises a lot of questions: how to identify patient's needs, what collaboration with GPs (general practitionners), how to organize this, how to keep the link between hospital and home care professionals (real time information circulation), how to fund this.

We developed in France home care networks, with a first goal to help home care professional to deal with patient's health problems, especially for palliative care and social support. In parallel, we begin to test bundle payments in real life for these patients. Of note, these structures were first focusing on cancer patients but since 3 years all patients with chronic diseases may be included. This has an impact also on hospital organization as hospital expertise in cancer treatments, especially the newest, must be accessible if needed. One answer is the development of nurse coordinators that are the easiest way for patients and mostly for home care professionals to get personalized advice and avoid unnecessary venue to emergency room. For patients and caregivers, these networks are a good way to secure homecare and allow patients to stay at home.

JS03
Models of Education in Supportive Care

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Models of education in supportive care

Supportive care is actually a milestone in the field of cancer care. There are scientific society guidelines regarding this area but with a relative quite low adherence. This may cause worst anticancer therapies administration in terms of dose intensity, interval of doses and reduction of adverse reactions. Th growing need of integrating supportive care during all the trajectory of cancer history and treatment led to develop education across countries. In Italy, the NICSO (Italian Network for SupportiveCare in Cancer), born at the end of 2014, started a national program of meetings, initially once every year. The meeting, called wide-angle in supportive care, describes the news in supportive care during every year and makes the opportunity to young investigators to meet experts. In the last two meeting, experts from France and Germany were included into the program. Furthermore, during 2017, NICSO allowed a series of six educational meeting across country in different cities with the intent to widespread supportive care. In all these meeting different healthcare professional figures were invited to discuss and share the main supportive care issues. We found excellent results in terms of participation and feedback resulting in a MASCC partnership for all NICSO members, so we think that a widespread coverage of education is the goal to enhance knowledge in this field.

JS04
Outpatient Experiences with Web-Based Applications to Monitor Their Symptoms

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Symptoms are common in patients with advanced cancer. They have a major impact on quality of life. Inadequate symptom management occurs especially

in the ambulatory setting. Patients themselves do not always mention their symptoms, because they are afraid of getting medication or distracting their oncologist from the anticancer treatment. Professionals do not always recognize symptoms because they do not systematically monitor them. Symptom assessment commonly takes place retrospectively, relaying on patient recall. As a result, adequate adjustments of symptom management are often delayed, resulting in symptom burden and less than optimal care and quality of life. The relevance of this problem is reinforced by the fact that cancer treatments are increasingly provided in the ambulatory setting. Patients stay at home for most of the time and they have to take a more active role themselves in monitoring and communication about their symptoms. They should be able to recognize symptoms in a timely manner and they need to know what to do. The internet offers the possibility to monitor patient-related symptoms in real-time and the opportunity to enhance patients' self-management skills. Various eHealth applications exist to monitor patients' symptoms, or to enhance the mutual communication between patients and health care professionals. However, it is hard to implement such systems in daily practice. It is important to know patients' opinions about eHealth applications, what are the barriers and facilitators of patients regarding the use of eHealth to monitor their symptoms when they are at home.

JS05
Personalizing Virtual Environments through Immersive Virtual Reality: The Patient Perspective on Achieving the Goal of Patient-Centeredness

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Objectives
To evaluate whether VR imaging application of virtual environments provide a more effective treatment of mood disturbances experienced by cancer patients during chemotherapy sessions over Guided Imagery. A secondary aim of this study was to elicit the patients' perceptions on the intervention's level of patient-centreness.
Method
This was a randomised, double blind crossover trial with 40 patients. Eligible patients were those in active treatment requiring to receive intravenous chemotherapy within the cancer care setting. Eligible participants were able to speak and understand Greek and they had given written informed consent. Participants should also have a score of >60 on the POMS total mood disturbance scale, a >50 on the Karnofsky Performance Scale Index and a mean of >50 on the Attentional Function Index (AFI). Patients were excluded if they were diagnosed with brain tumours (due to seizures), receiving palliative care, they had an impaired cognitive ability or they had an impaired visual ability. Data were collected with the POMS, and FACT-G. Patients' perceptions on the individuality of the intervention were collected through open ended questions.
Results
In regards to patients' perceptions, they reported that these intervention was something that covered their needs and expectations during chemotherapy. Explicitly, this was achieved through 3 identified themes: "Relaxing Experience", "Altered perception of time" and "Distraction from the hospital environment".
Conclusion
VR is an efficacious tool, can highly correspond to patients' expectations and preferences, compares favorably to comparison conditions such as Guided Imagery, and has lasting effects that generalize to the real world.

JS06
Using Patient-Reported Outcomes for Patient Decision-Making

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Patient-report of subjective data is not only useful in monitoring status after cancer therapy, but also for tailoring relevant information for newly diagnosed patients. The Personal Patient Profile-Prostate (P3P) is a web-based intervention consisting of a query component in which patient-reported variables are collected and an intervention component in which the patient-reported data drives the focus of a decision aid. The development of the P3P included qualitative and quantitative descriptive research which identified the influential factors brought forward by men soon after diagnosis. The P3P has been shown efficacious, reducing conflict associated with decision making for localized prostate cancer, in two national randomized trials. Available to the public free of charge at: p3p4me.org

JS07
Using a Community-based, Nurse-led Cancer Information and Support Line to Deliver Phone-based Supportive Care Interventions: An Australian Experience

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Evidence shows that distress or persistent unmet needs can significantly impact an individual's ability to cope and indeed live with and beyond a diagnosis of cancer. Current guidelines for supportive care screening in people affected by cancer recommend pathways based on individual's levels of distress at any given timepoint in their trajectory, and it is well acknowledged that nurses play a critical role in the assessment and delivery of effective supportive care interventions. Whilst several approaches to screening have been trialled in clinical settings, we know that there are varying levels of implementation, adherence and follow up.
In a time where clinical services are stretched, and capacity is challenged, there is an increasing and demonstrated need for the integration of referral pathways to Non-Government and Not-For-Profit cancer support organisations to help meet the needs of cancer patients, their carers and families. Similarly, these community-based services have a responsibility to provide supportive care services that are dynamic, responsive, evidence-based and able to meet these identified needs in an innovative and sustainable way.
This presentation will profile Cancer Council's experience in an Australian context of utilising oncology nurses who staff the Cancer Council 13 11 20 Information and Support line to deliver nurse-led, phone based supportive care interventions for people affected by cancer. Two interventions will be discussed including the Healthy Living after Cancer program, and the START trial, which looks at the use of distress screening and structured care to improve the uptake of services as a complement to clinical care.

JS08
Overview of Biosimilars

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Biosimilars are modifying clinical practice across the world, following on the steps of generics. They provide more affordable access to high quality similars of essential biological therapy agents in many fields of medicine. With ever increasing healthcare costs and an aging population, it is also often discussed how the savings made by using biosimilars can increase access and availability to novel therapies. Equally important is that biosimilars may offer the opportunity to optimise current practice of existing biological therapy. Opinions expressing doubts about the development process and the manner in which these agents are introduced into clinical practice have been and continue to be voiced. Fortunately, as of today, the manner in which authoritative regulatory authorities like (e.g.) the European Medicines Agency (EMA) or the Food and Drugs Administration (FDA) approve such agents has not been found to be at fault. Admittedly the development of

biosimilars is significantly more complex than the development of small molecule generic drugs, which have also been cause of some concern in the past. There seems to be a need to explain better about the principles of biosimilar development and approval, based on a 'totality of evidence' approach. Properly manufactured, to the correct standards, and used appropriately (with both the physician and patient being well informed), biosimilars can positively impact the financial sustainability of healthcare systems.

Aapro M. Biosimilars in oncology: much ado about nothing? Ann Oncol. 29(1):25-26, 2018

Tabernero J, et al. Biosimilars: a position paper of ESMO. ESMO Open. 2017 Jan 16;1(6)

JS09
Biosimilars in Supportive Care

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Biosimilars in Supportive Care

Biosimilars have been used in the supportive care of cancer patients since 2007, beginning with the introduction of the biosimilar haematopoietic growth factors epoetin and filgrastim and followed more recently by biosimilar infliximab, used for the treatment of immunotherapy-induced colitis. These products have been shown to improve access to safe and effective supportive care at a lower cost, delivering budgetary savings which can be invested in innovative new cancer treatments. In spite of this, there are differences in the uptake of biosimilars around the world due to challenges such as lack of product availability, funding arrangements or clinician acceptability. This session will reflect on the UK experience of biosimilar adoption in the supportive care setting, compared to the findings of a recent survey conducted by the International Society of Oncology Pharmacy Practitioners (ISOPP) on biosimilar implementation practice worldwide.

JS10
Current Guidelines on the Use of Biosimilars

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Current guidelines on the use of biosimilars

Biosimilars present a necessary opportunity for physicians, patients, payers and healthcare systems. With the emergence of biosimilars worldwide, guidelines are much needed to ensure the proper usage of these group of drugs. There are many guidelines available at the moment, namely the European Medicines Agency (EMA) which has as overarching guidelines on biosimilars. These guidelines outline the quality, non-clinical and clinical data requirements specific to biosimilar drugs. The World Health Organisation (WHO) also has guidelines on biosimilars, which provide globally acceptable principles for licensing biotherapeutic products and can be adopted as a whole or partially by National Regulatory Agencies worldwide. The British Oncology Pharmacy Association (BOPA) has a position statement for the use of monoclonal antibodies. The European Society for Medical Oncology (ESMO) also has a position paper for biosimilars. Many countries have biosimilar guidelines which includes the USA, Canada, Europe, Australia and many countries in Asia and South America. According to the US Food and Drug Administration (FDA), once a biosimilar has been approved by the FDA, patients and health care providers can be assured of the safety and effectiveness of the biosimilar, just as they would for the reference product. With potential savings and an increasing number of biosimilars on the market, national health authorities can potentially adopt other new innovative medicines and thus biosimilars do represent one of the ways forward to obtain financial sustainability.

JS11
Overview of the Issues

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This was constructed to provide context for the presentations to follow. Current definitions of both cancer survivorship and AYA cancer survivors will first be presented followed by views expressed in regarding the age categorization often used to bracket this widely heterogeneous group of cancer survivors. The global epidemiology with reference to incidence, mortality, and age will then be provided. The world-wide burden of cancer in AYAs will be followed by a careful consideration of the world's literature on major concerns of AYA survivors as determined in their own words. No conflict of interest

JS12
The Impact of Cancer on Adolescent and Young Adult Survivors' Work-Related Issues

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Work is an essential component in the quality of life of cancer survivors, including those of the adolescent and young adult (AYA) generation. The impact of cancer on work may vary based on the survivor's age at which the cancer is diagnosed. A cancer diagnosis while attending school may disrupt schoolwork and alter the student's readiness for employment and for choosing an occupation. It also impacts first-time job seeking. Even when young adult survivors hold a job, their cancer diagnosis may affect continuation of work and further career development. Work is also an area in which healthcare providers cannot act as 'specialists.' Support for AYA survivors who want to work should be comprehensive and multi-level; various stakeholders—such as family, school, workplace, and governmental administration—should work in co-operation, and healthcare providers need to act in co-operation with these stakeholders. This presentation reviews the impact of having cancer on AYA survivors' work-related issues, particularly job seeking and continuation of work. It also introduces examples of multi-level support activities in Japan for addressing AYA cancer survivors' work-related unmet needs, and discusses universal implications of those activities.

JS13
Ongoing Trials: AYA Cancer Survivors in Asia

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The AYA population consists of patients who are at major milestones of their lives with multiple familial and societal responsibilities and roles, and least expect themselves to be ill, much less burdened with cancer. Furthermore, the physical and psychosocial toxicities of disease and treatment are made more challenging by the significant changes and life events that are faced by AYAs. Hence, it is crucial to continue to study the supportive care and survivorship problems faced by this population. In this seminar, we will discuss the ongoing trials that are currently taking place among Asian AYA cancer patients and survivors.

JS14
Geriatric Assessment in Day-to-Day Practice

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- **Geriatric Assessment in Day To Day Practice**

Introduction

Oncology teams have limited knowledge of the aging and cancer interface, leaving the needs of older adults often unmet, leading to poor health outcomes. Multidimensional screening and assessment is key to identifying and addressing concerns. Comprehensive geriatric assessment (CGA) process can address the needs of older adults through the process of screening, assessment, implementation of interventions, and reassessment. Conducted by a multidisciplinary team, the CGA assesses for frailty, geriatric syndromes, comorbidities, cognition, nutritional, functional, and psychosocial status, to assist in providing recommendations to reduce over and under treatment. Research has demonstrated that after CGA, 39% of treatment plans were modified, supporting the need for CGA in oncology settings.

Methods

The presentation objectives as follows:

1. Discuss CGA as an approach to informing recommendations for personalized cancer treatment and supportive care plans.
2. Provide an overview of geriatric oncology screening and assessment tools, highlighting those most relevant to oncology practice.
3. Provide insight regarding how to introduce geriatric oncology into day-to-day practice through case presentation.

Results

Oncology nurses have a crucial role in the cancer care of older adults, as the effectiveness of the CGA process lays within a well-established follow-up plan. Shifting care models toward proactive approaches enhances the oncology care of older adults through care facilitation, close monitoring, assessment, and care facilitation.

Conclusion

Impact of geriatric assessment in day-to-day oncology practice supports older adults with cancer and their caregivers for better health-related outcomes. Geriatric oncology education and training is imperative to advance cancer care for older adults.

JS15

ASSOCIATION OF POLYPHARMACY AND POTENTIALLY INAPPROPRIATE MEDICATIONS WITH PHYSICAL FUNCTION IN OLDER PATIENTS WITH CANCER RECEIVING CHEMOTHERAPY: A UNIVERSITY OF ROCHESTER NATIONWIDE GERIATRIC ASSESSMENT STUDY

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Introduction

Polypharmacy and potentially inappropriate medications (PIM) are prevalent in older adults with cancer but associations with outcomes are understudied. We evaluated the optimal cut-off value for polypharmacy, and examined the association of polypharmacy and PIM with physical function in older adults with cancer.

Methods

Secondary analysis of baseline data of a randomized study enrolling patients ≥70 with advanced cancer receiving a new chemotherapy line (URCC 13059; PI: Mohile). Prescription and non-prescription medications were captured prior to chemotherapy. PIM were categorized using 2015 Beers criteria. One objective and 3 patient reported functional measures were assessed: 1) OARS Physical Health (PH), 2) Time Up and Go (TUG), 3) Activity of Daily Living (ADL), and 4) Instrumental Activity of Daily Living (IADL) (Table 1). Optimal cut-point for polypharmacy in relation to functional measures was determined by maximizing Youden's index. Multivariate stepwise logistic regressions were performed to examine the association of polypharmacy and PIM with physical function, adjusting for relevant covariates.

Table 1: Physical function measures cut-off values:

Physical Function Measure	Impairment cut-off
ADL	≥1 for "yes" responses
IADL	≥1 "able to do with some help" or "completely unable to do" responses
OARS PH	≥1 for "a lot" responses
TUG	>13.5 seconds

Abbreviations: ADL: Activity of Daily Living; IADL: Instrumental Activity of Daily Living; OARS PH: Older Americans Resources and Services Physical Health, TUG: Timed Up and Go

Results

In 439 patients (mean age 77), Youden's index identified ≥8 medications as the optimal cut-point for polypharmacy; 43% had ≥8 medications and 62% had ≥ 1 PIM. On multivariate analysis, being on ≥8 medications was associated (P<0.05) with PH, TUG and ADL impairments. PIM was associated with PH and IADL impairments. A cut-off of 5 medications was not associated with functional measures (Table 2).

Table 2: Association of medication measures and physical function impairments:

Variables/ Outcomes	ADL (AOR, CI)	IADL (AOR, CI)	PH (AOR, CI)	TUG (AOR, CI)
≥ 5 medications	1.44 (0.83-2.49)	1.09 (0.68-176)	1.23 (0.71-2.12)	1.35 (0.81-2.25)
≥ 8 medications	1.64 (1.01-2.57)*	1.26 (0.81-1.96)	1.73 (1.01-2.98)*	1.61(1.04-2.51)*
PIM	1.42 (0.87-2.32)	1.72 (1.09-2.73)*	1.97 (1.15-3.37)*	0.92 (0.58-1.47)

Abbreviations: AOR: adjusted odds ratio, CI: 95% confidence interval, PIM: potentially inappropriate medications

*P-value: <0.05

Conclusions

In this cohort, defining polypharmacy as ≥8 medications identified patients with functional impairment. Future studies should evaluate if decreasing polypharmacy and PIM will improve physical function in this population.

JS16

OLDER CANCER SURVIVORS HAVE A LOWER SYMPTOM BURDEN

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Introduction

Over 15.5 million cancer survivors are living in the United States. While cancer survivors experience a number of persistent symptoms, little is known about age differences in symptom burden. Purpose of this study was to evaluate for differences in the severity of seven common symptoms between younger (<65 years) and older (>65 years) survivors.

Methods

Survivors (n=623) completed a demographic questionnaire, Karnofsky Performance Status (KPS) Scale, and Self-Administered Co-Morbidity Questionnaire. Symptom measures included: Spielberger State-Trait Anxiety Scale, Center for Epidemiologic Studies Depression Scale, Lee Fatigue Scale, General Sleep Disturbance Scale, Attentional Function

Index, and Brief Pain Inventory. Between group differences were assessed using parametric and non-parametric tests.

Results

Compared to the younger survivors (63.1%), older survivors (36.9%) were more likely to be male, live alone, unemployed, have a lower annual income, have a higher KPS score, and have a higher level of comorbidity. Older patients reported significantly lower trait and state, depressive symptoms, fatigue, and sleep disturbance scores. In addition, they reported significantly higher levels of energy and attentional function. No age differences were found in the percentage of survivors who had non-cancer related pain.

Conclusions

Findings are consistent with previous studies of age differences in symptom burden in oncology patients undergoing cancer treatment. Despite having a higher level of comorbidity, older patients reported a significantly lower symptom burden. While a "response shift" in the perception of symptoms may explain these findings, additional research is warranted to understand the mechanisms that underlie these age differences in symptom burden.

ME01
Meet the Experts: Developing and Submitting Supportive Care Practice Guidelines to MASCC for Approval/Endorsement

Clinical Practice Guidelines (CPGs) are a key instrument for facilitating clinicians' understanding and application of the evidence to improve patient care. MASCC is committed to ensuring that supportive care practice is founded on the best available scientific and clinical evidence. In addition to CPGs developed by its own Study Groups, MASCC considers for endorsement proposed guidelines from organizations and agencies around the world. MASCC has developed policies regarding CPGs developed by its Study Groups and for those submitted from external sources for approval or endorsement. In this session, Fred Ashbury, MASCC Guidelines Committee Chair, and Bernardo Rapoport, MASCC Guidelines Committee Member, will provide an update on both of these policies.

PL01
New Radiotherapy Modalities

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Radiation therapy is offered to half of all cancer patients and in the realm of head and neck cancer, it can be given either following initial surgery or as a curative intent treatment on its own. The techniques used to plan and deliver radiation therapy have evolved dramatically since the mid-1990s, benefiting from rapid parallel developments in radiologic imaging and computational capacity and algorithms. Modern radiation therapy is typically delivered based on a highly precise, volumetrically calculated, intensity-modulated radiation therapy (IMRT) plan. Head and neck cancer, because of the sensitive anatomic structures that are usually located in very close proximity to tumor targets, is a special case that demands exceptionally complex radiation planning and delivery. Excellent functional outcomes are a major goal in addition to cancer cure. The development of patient-reported outcomes and functional assessments capable of cataloguing the effects of radiation therapy more accurately are important to better understand the effects of treatment. Major national and international consortia have made concerted efforts to assess and reduce of the toxicity of head and neck cancer radiation therapy. Practical efforts have included standardization of dose prescriptions and target delineation guidelines across groups. There has also been substantial clinical trial development to support evolving approaches such as novel systemic therapies, novel sequencing of therapies, or personalization of therapeutic intensity based on validated biomarkers. Promising recent technical developments include planning based on positron-emission tomography (PET) or magnetic resonance imaging (MRI) and the increasingly sophisticated investigation of proton therapy and other particle therapies.

PS01
Circadian Rhythms in Oncology

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The Circadian Timing System (CTS) coordinates major physiological processes and synchrony between hormonal, behavioral and autonomic nervous system functions. Circadian disruption associated with shift-work has been implicated in higher incidence of hormonally-driven cancers and is considered to be a carcinogen by the World Health Organization.

Emerging evidence suggests that circadian rhythm disruption is common in cancer patients, and the precise mechanisms behind circadian disruption and tumor growth are currently being investigated by several research groups. Additionally, circadian disruption may contribute to increased symptom burden. Sleep-wake disruptions (e.g., insomnia), reduced quality of life, glucose dysregulation, lowered immunity, and cardiac symptoms are among many that are linked or associated with disrupted circadian rhythm in cancer patients. In spite of the mounting evidence supporting the link between circadian rhythm disruption and poorer overall health, few interventions have been developed to specifically focus on addressing and regulating circadian rhythm. Chronotherapy and chronorehabilitation interventions will be discussed and future directions will be offered.

PS02
The Truth Is Out There! Untangling the Evidence Around the Anticancer Effects of Anticoagulants

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The coagulation pathway and the dissemnination of metastases are inextricably linked through tissue factor/ thrombin mediated mechanisms.

For many years there has been in vitro and invivo data suggesting antithrombotics have anticancer effects, more specifically act by inhibiting the haematogenous spread of metastases. Furthermore, this mechanism may act as an adjunct to concommitant chemotherapy use through the inhibition of P-selectin.

This presentation shall critically review the data supporting the belief that heparins in particular have a role in the prevention of cancer progression. It will consider the clinical trials which have been designed to test the hypothesis and consider the impact of cognitive dissonace in our belief that like in the X-Files "The Truth is Still Out There"

PS03
The Consequences of Erectile Dysfunction and other Sexual Changes after prostate cancer: A comparison of Gay/Bisexual and Heterosexual Men

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Introduction

Decrements in Health Related Quality of Life (HRQOL) and sexual difficulties are a recognised consequence of prostate cancer (PCa) treatment. However little is known about the experience of gay and bisexual (GB) men.

Methods
HRQOL and psychosexual predictors of HRQOL were examined in GB and heterosexual men with PCa, to inform targeted health information and support. 124 GB and 225 heterosexual men with PCa completed a range of validated psychosexual instruments. Main outcome measure: Functional Assessment of Cancer Therapy – Prostate (FACT-P) was used to measure HRQOL, with validated psychosexual measures, demographic and treatment variables used as predictors. A subsample of participants (n= 70) took part in semi-structured interviews.
Results
Compared with age-matched population norms, participants in both groups reported significantly lower sexual functioning and HRQOL, increased psychological distress, disruptions to dyadic sexual communication, and lower masculine self-esteem, sexual confidence, and sexual intimacy. In comparison with heterosexual men, GB men reported significantly lower HRQOL, masculine self-esteem, and satisfaction with treatment; higher psychological distress, cancer related distress and ejaculatory concern; and higher sexual functioning and sexual confidence. Erectile dysfunction was reported by 72% of survey respondents, associated with reports of emotional distress, negative impact on gay identities, and feelings of sexual disqualification for gay men.
Conclusions
These findings confirm differences between GB and heterosexual men in the impact of PCa on HRQOL across a range of domains, suggesting there is a need for GB targeted PCa information and support, to address the concerns of this "hidden population" in PCa care.

PS04
ENTERIC NERVOUS SYSTEM TOXICITY UNDERLYING GASTROINTESTINAL SIDE-EFFECTS OF CHEMOTHERAPY: MECHANISMS AND POTENTIAL TREATMENTS

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Introduction
Chemotherapy-associated gastrointestinal side-effects such as nausea, vomiting, diarrhoea, constipation are experienced by 80-90% of patients and limit the dose of chemotherapy reducing the efficacy of anti-cancer treatment. Chronic intestinal dysfunction persists >10 years post-treatment in most cancer survivors. Persistence of gastrointestinal symptoms long after treatment suggests long-term damage to gastrointestinal innervation. We aimed to study mechanisms underlying damage to gastrointestinal innervation, and test therapies alleviating chemotherapy-induced enteric neuropathy and gastrointestinal dysfunction.
Methods
Fresh colon specimens from non-obstructive colorectal carcinoma patients treated and untreated with chemotherapeutic agents and animal models of colorectal cancer were used in this study. Intracellular electrophysiology, immunohistochemistry, *in vivo* gastrointestinal transit, *ex-vivo* colonic motility and secretion, qPCR and Western blot were used.
Results
In samples from chemotherapy-treated patients we observed functional and morphological changes in enteric neurons. In animal models, damage and death of enteric neurons persisted long after chemotherapy cessation when mucosal damage has subsided. Enteric neuropathy was associated with long-term changes in gastrointestinal transit, colonic dysmotility, chronic diarrhoea (5-FU, irinotecan-treated), chronic constipation (oxaliplatin-treated), lack of weight gain and pica. Co-treatment of cancer-baring mice with oxaliplatin and novel compounds targeting oxidative stress pathway attenuated enteric neuropathy and gastrointestinal dysfunction and potentiated anti-cancer efficacy of oxaliplatin.
Conclusions
Our studies revealed that chemotherapy-induced oxidative stress, direct toxicity and inflammation leading to mitochondrial and nuclear damage contribute to enteric neuropathy in both humans and animal models. Our results provide evidence that treatments targeting oxidative stress pathway attenuate enteric neuropathy and gastrointestinal dysfunction without reducing efficacy of anti-cancer treatment.

PS05
HIGHER LEVELS OF ACUTE AND CHRONIC STRES ARE ASSOCIATED WITH WORSE MORNING AND EVENING FATIGUE PROFILES IN ONCOLOGY OUTPATIENTS RECEIVING CHEMOTHERAPY

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Introduction
Fatigue is the most common symptom experienced by oncology patients and demonstrates a large amount of inter-individual and diurnal variability. While stress has significant negative effects on physical and emotional well-being, little is known about the effects of stress on fatigue severity. The objective was to evaluate for differences in stress measures among patients with distinct morning and evening fatigue profiles.
Methods
Outpatients (n=1332) completed questionnaires six times over two cycles of CTX. Latent profile analysis was used to identify distinct subgroups using ratings of morning (MF) and evening (EF) fatigue from the Lee Fatigue Scale. Subjective measures of stress included: Life Stressor Checklist-Revised (LSC-R), Perceived Stress Scale (PSS), and Impact of Event Scale-Revised (IES-R). Differences among the latent classes were evaluated using analysis of variance.
Results
Four distinct MF classes (Very Low (19.6%), Low (30.2%), High (39.6%), Very High (10.6%)) and four distinct EF classes (Low (14.0%), Moderate (17.2%), High (36.0%), Very High (32.8%)) were identified. Patients in the Very High and High MF classes reported higher LSC-R Affected and LSC-R total scores compared to the Low and Very Low classes. Patients had higher PSS, IES-R subscale and total scores associated with increasing MF class (i.e. Very High>High>Low>Very Low). Patients in the Very High EF class had significantly higher LSC-R Affected subscale and total scores, PSS score, IES-R Intrusion, Hyperarousal, and total scores compared to the Moderate and High classes.
Conclusions
First study to describe associations between acute and chronic stress and diurnal variations in fatigue in patients undergoing CTX.

PS06
The Promotion of Exercise Oncology as a Standard Part of Clinical Practice

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Introduction
Exercise is safe and effective during cancer treatment and a valid option for health care providers to address the short and long-term effects of current cancer therapy and minimize toxicities. However, nationally, less than 5% of cancer patients exercise during treatment. Therefore, the purpose of this investigation was to promote the standardization of exercise oncology as part of clinical practice by examining its effect on symptom severity, program outcome, and cost savings.

Methods
This controlled clinical trial evaluated the effects of individualized exercise therapy in 1,191 patients undergoing chemotherapy treatment. Each participant participated in a 12-week individualized exercise program through Maple Tree Cancer Alliance, and completed a comprehensive fitness assessment and a subjective symptom checklist at the start and conclusion of their treatment regimen. ER visits, length of hospital stay, and 30-day readmits were restrospectively analyzed following cessation of treatment.
Results
Individualized exercise had a positive impact on fitness parameters and symptom severity, and produced cost savings of approximately $3,000 in the first 6 months of exercise. Specifically, cardiovascular endurance, muscular strength, quality of life, depression, fear fatigue, and pain all improved following the exercise intervention.
Conclusions
Exercise is an effective means to manage treatment-related symptoms in cancer and should be a part of the standard of care.

PS07
Understanding Suicide Rate, Risk Factors and Trends Among Head and Neck Cancer Survivors

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Objective
To examine risk of suicide across cancer sites, with a focus on survivors of head and neck cancer (HNC).
Methods
The Surveillance, Epidemiology, and End Results 18-registry database (2000-2014) was queried for the top 20 cancer sites, including HNC. Outcome of interest was suicide as cause of death. Suicide mortality rate was estimated for HNC sites and compared with rates for 19 other cancer sites in the study. Poisson regression was used to estimate adjusted rate ratios (aRRs) and 95% confidence intervals (CIs) for 1) HNC versus non-HNC sites (the other 19 cancer sites combined), and 2) HNC vs. individual cancer site. Models were stratified by sex, controlling for race, marital status, age, year, and stage at diagnosis.
Results
There were 404 suicides among 151,167 HNC survivors, yielding a suicide rate of 63.4 suicides per 100,000 person- years. In this timeframe, there were 4493 suicides observed among 4219,097 cancer survivors in the study sample, yielding an incidence rate of 23.6 suicides per 100,000 person-years. Compared with survivors of other cancers, survivors of HNC were almost 2 times more likely to die from suicide (aRR, 1.97; 95% CI, 1.77-2.19). There was a 27% increase in the risk of suicide among HNC survivors during the period from 2010 to 2014 (aRR, 1.27; 95% CI, 1.16-1.38) compared with the period from 2000 to 2004.
Conclusions
Although survival rates in cancer have improved because of improved treatments, the risk of death by suicide remains a problem for cancer survivors, particularly those with HNC.

PS08
Teleoncology

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Teleoncology delivers oncological services at a distance. It has been successfully used to remotely supervise chemotherapy administration, remote planning of radiotherapy and telesurgery. It has been effective in monitoring and controlling symptoms, both physical and psychological, and supplements expertise as part for conducting multidisciplinary meetings involving remote centres. Diagnosis and follow up can involve teleradiology and telepathology and although examination excludes palpation, which can be carried out be a remote clinician, many other diagnostic examinations such as telegenetics or skin and eye examinations can occur by transmitting images. The aims of the use of teleoncology include to reduce rural and remote disparities in cancer outcomes, including with indigenous patients. This has been extended to the servicing of lo- income countries which lack specialist expertise. It supports peer interaction and education of remote practitioners and trainees and provides an avenue for remote patients being able to access a second opinion. It also reduces travel for both patients and practitioners and this is the source of much of the cost savings which have been demonstrated by several established programs such as those in Kansas in the US and Townsville in Australia. An example of a more recent application using mobile devices is a study testing oral chemo compliance using an electronic medication compliance device (MEMS) and texting reminders to patients' mobile phones. Education of both patients and practitioners is required for teleoncology but outcomes have been found to match those of face to face consultations and with high user satisfaction.

PS09
EFFICACY OF AN E-HEALTH SELF-MANAGEMENT APPLICATION 'ONCOKOMPAS' TO SUPPORT CANCER SURVIVORS TO OBTAIN OPTIMAL SUPPORTIVE CARE – RESULTS OF A RANDOMIZED CONTROLLED TRIAL

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Introduction
Oncokompas is an eHealth self-management application to monitor health-related quality of life (HRQOL) and to provide personalized information on and access to supportive care. Oncokompas comprises generic cancer topics and tumor-specific topics in modules targeting breast, colorectal, head and neck cancer and lymphoma survivors. The aim of this study was to assess the efficacy of Oncokompas among cancer survivors.
Methods
In a randomized controlled trial (RCT), cancer survivors (breast, colorectal, head and neck cancer, lymphoma) up to 5 years after treatment were randomly assigned into the intervention group or a wait-list control group. The primary outcome was patient activation, and secondary outcomes were health-related quality of life, self-efficacy, personal control, perceived patient-physician interaction, supportive care needs and mental adjustment to cancer. Questionnaires were administered at baseline, post-intervention and at 3- and 6-months follow-up. Linear mixed-effect models (intention to treat) were used to compare longitudinal changes in the outcomes between both groups.
Results
In total, 627 cancer survivors participated. Significant differences between the intervention and control group over time were found on HRQOL (EORTC QLQ-C30 Summary score and subscale Diarrhoea). Furthermore, effects of Oncokompas were found on several (tumor-specific) topics in survivors of head and neck cancer (Emotional function, Fatigue, Dyspnoe, Oral pain, Swallowing, Coughing, Trismus, Social eating), colorectal cancer (Loss of appetite, Diarrhoea, Weight, Health system, information and patient support needs) and lymphoma (Constipation, Emotional impact).

Conclusions
Oncokompas is an effective eHealth application for cancer survivors to improve their health-related quality of life.

PS10
Does AI Increase Closeness or Decrease it? Clinician vs Patient Viewpoint

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Introduction
In today's healthcare system, there is less time available for providers to see patients, but increasing responsibilities for both. This results in unsupported patients with poorer health outcomes, and providers with low job satisfaction and high burnout rates. As technology makes its way into healthcare, there is a fear that the communication gap will continue to widen and decrease closeness. However, fully-developed AI solutions that address intrinsic and extrinsic needs can add value by making efficient use of the time patients and clinicians have together, with the purpose of bringing them closer.
Methods
Helpsy's SAN is the world's first AI Nurse that can anticipate, educate, and escalate care for her patients using real time symptom management and care navigation. This companion app for patients enables nurse navigators to track patients in real-time.
Results
In a Helpsy pilot, clinicians found the use of smart templates like Helpsy helpful, and made them feel more connected to their patients. On average a clinician served 2x her patient capacity with 30x more touch points with each patient. Alternatively, patients felt a lot more connected to their provider, and were engaged in their own symptom management by interacting with the chatbot regularly.
Conclusions
Developing technology that has deep clinical expertise and intent to do good, can be harnessed to help bridge the communication gap and improve our patients outcomes and reduce clinician burnout. The Helpsy platform is able to transform healthcare delivery so patients receive better care and can have closer, more meaningful relationships with their healthcare teams.

PS11
Juggling Career and Family While Avoiding Burnout: The Challenge of Pediatric Oncology

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Juggling career and family while avoiding burnout: the challenge of pediatric oncology
As a paediatric oncologist and a mother, Andrea Orsey will address carergiver burnout from the perspective of both the parents of her patients and as a parent oncologist.
Burnout is epidemic among pediatric oncology. The emotional impact of caring for children with cancer can be overwhelming for both their families as well as their medical professionals. Juggling the care of your ill patients with the needs of your own children can be challenging and exhausting. How do we recognize compassion fatigue and burnout in the carers of our patients, in our colleagues and in ourselves? For both informal carers' and professionals, burnout and fatigue have far-reaching impacts on the quality of patient care, physical health and the wellbeing of our families.
How can we preserve true wellness for our patients, their loved ones, ourselves and our own families? How can we balance the demands of our career with the needs of our family? Dr. Orsey will review strategies to identify, prevent and manage burnout and compassion fatigue among parents of pediatric oncology patients and cancer professionals.

PS12
Burnout in Palliative Care: When You Are a Survivor and Carer

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Burnout and other Challenges in Palliative Care: When you are a Survivor and Carer
That moment when you are given the news: YOU have cancer, everything changes.
As clinicians, we often underestimate the impact of those three little words. There is a tendency to separate our feelings from the work we do and the words we speak on a daily basis. This is completely understandable, because of the need for emotional and psychological boundaries. And yet, the more we deny our feelings, compartmentalizing our "work lives" and our "personal/internal lives," the less authentic our humanity.
Dr. Michael Kearney states: *"There is within medical and nursing education a growing body of opinion which challenges an educational approach that fosters the knowledge and skills of students, while ignoring their personal experience and attitudes as narrow and limited, resulting in patient care that may be efficient but is ultimately de-humanized and de-humanizing. At the core of this view is the proposal that there is a direct link between who we are as individuals and the quality of our work as professionals."*
What creative ways can we find to integrate our inner selves and our professional selves, so that we do not "burn out?" How do we maintain a sense of passion for our work and compassion for those we care for?
As part of this panel I will discuss the idea of "poetic medicine" as a means to access our feelings and re-kindle our hope and purpose in our work.

PS13
Why Physician Wellness Matters and Strategies to Reduce Burnout

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Soaring rates of burnout and emotional exhaustion reported by healthcare professionals have captured the attention of administrators, educators and leaders of physician groups. In this presentation we will review organizational and structural elements identified as major contributors, and focus on innovative approaches being implemented to mitigate professional stress.

PS14
THE PERCEPTIONS OF PARENTAL ILLNESS QUESTIONNAIRE-CANCER: AN INSTRUMENT TO ASSESS ILLNESS PERCEPTIONS AMONG YOUNG PEOPLE WHO HAVE A PARENT WITH CANCER

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[3]Austin Health, Olivia Newton-John Cancer Wellness and Research Centre, Heidelberg, Australia
[4]University of South Australia, University of South Australia Cancer Research Institute, Adelaide, Australia
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[6]University of Sydney, Cancer Nursing Research Unit, Camperdown, Australia

Introduction
Adolescents and young adults (aged 12-24 years) experience significant levels of distress following a parent's diagnosis with cancer. An individual's beliefs about the illness of someone close to them may influence their emotional response, coping behaviours, and in turn, their psychological outcomes. This relationship remains largely unexplored in the context of parental cancer and there are no psychometrically validated instruments available to measure illness perceptions in young people who have a parent with cancer. Therefore, the aim of this research was to adapt and validate an existing measure of illness perceptions for use in this cohort.
Methods
Semi-structured interviews were conducted with eleven young people (aged 15-24) years to explore their beliefs about their parent's cancer. Interview transcripts were analysed using deductive thematic analysis techniques and the Common-Sense Model of Self-Regulation as a framework. The findings were used to produce the Perceptions of Parental Illness Questionnaire-Cancer (PPIQ-C). Structured cognitive interviews were conducted with four young people and the measure was refined based on feedback provided.
Results
The PPIQ-C is comprised of 76 items with nine sub-scales. Cognitive interviews suggested good face and content validity.
Conclusions
The availability of a valid measure of illness perceptions in young people who have a parent with cancer may enhance the ability to identify individuals at risk of adverse psychological outcomes and may inform the development of interventions that target perceptions associated with poor psychological adjustment or maladaptive coping strategies. Further research is underway to assess the internal consistency, structural validity, and construct validity of the PPIQ-C.

PS15
THE EFFICACY OF LAUGHTER ON CANCER-RELATED SYMPTOMS IN ONCOLOGIC PATIENTS: A META-ANALYSIS OF RANDOMIZED CLINICAL TRIALS

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Introduction
Impaired immunity, stress, and reduced quality of life are common problems that affect cancer patients. Although many studies have investigated the effects of laughter on cancer-related symptoms, the beneficial evidence of laughter for cancer patients is still inconclusive.
Objectives
This study aimed to conduct a meta-analysis to determine the efficacy of laughter on immunity, stress, and quality of life in cancer patients.
Methods
Four electronic databases (PubMed, Cochrane Library, EBSCO, and Airiti Library) from inception until January 2019 were searched. All randomized controlled trials using laughter as a primary intervention for patients with cancer were included for this meta-analysis. The pooled effect sizes (Standardized mean difference, SMD) were calculated to determine the magnitude of the laughter. Random-effect models were used to estimate pooled relative risks. Publication bias was evaluated by Egger's test.
Results
Of the 60 searched studies reviewed, 15 clinical trials met the criteria of this meta-analysis, but seven articles were excluded due to language limitations and different measured outcomes. Overall results revealed that laughter significantly improved immunity (SMD = 1.16, 95% CI 0.60-1.80, $p < 0.001$, $I^2 = 60.96\%$), stress (SMD = 0.48, 95% CI 0.15- 0.77, $p < 0.01$, $I^2 = 32.77\%$), and quality of life (SMD = 0.60, 95% CI 0.26- 0.96, $p < 0.001$, $I^2 = 50.22\%$). Egger's test indicated no publication bias ($p = 0.06$).
Conclusions
This meta-analysis suggests that laughter is beneficial to cancer-related symptoms. Nonetheless, available research evidence is insufficient to conclude that laughter is a complementary treatment in cancer patients.

PS16
Novel Approach to Deliver Recombinant Human Keratinocyte Growth Factor loaded Mucoadhesive Nanoparticles for Mucositis

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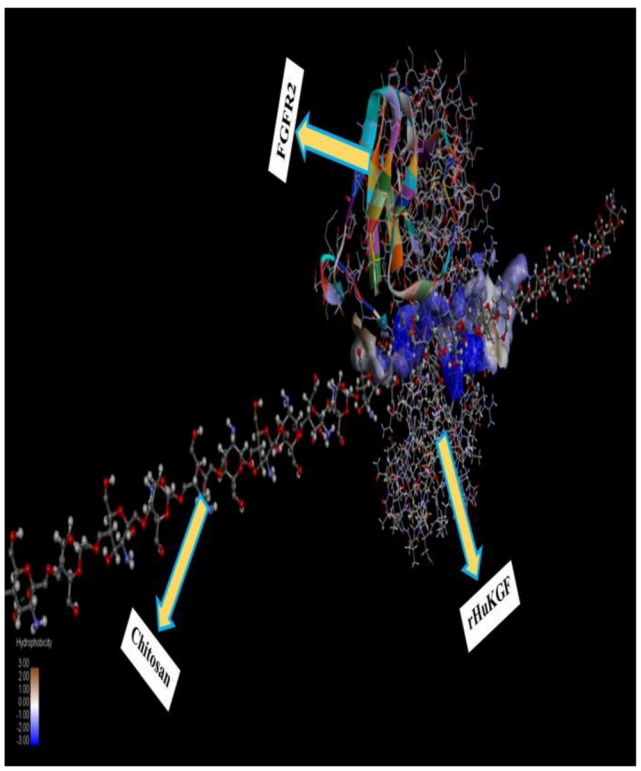
Introduction
Intravenous administration of truncated rHuKGF (Palifermin) has been permitted by FDA to treat and prevent chemotherapy and radiotherapy-induced oral mucositis. The unstable structure and short circulation time of rHuKGF are the main obstacles that reduce the bioavailability of such growth factor at the mucositis sites.
Methods
The rHuKGF incorporated chitosan nanoparticles (CNPs) were prepared by ionotropic gelation method. The molecular docking algorithm based on shape complementarity principles, FHs 74 Int cells proliferation and fluorescent microscopic studies were conducted using rHuKGF-CNPs. Further, the prepared rHuKGF-CNPs was lyophilized and filled in the kolicoat coated capsules for oral delivery**.** The pharmacokinetics parameters of rHuKGF were determined using rabbits as an animal model following single oral or IV administration of the prepared formulations.
Results
The molecular docking algorithm based on shape complementarity principles revealed that rHuKGF and rHuKGF-Chitosan complex strongly binds to the FGFR2b (1NUN, RCSB PDB) receptor shown in Figure. Fluorescent microscope image of rHuKGF-CNPs tagged with fluorochrome and rhodamine 6G confirmed that CNPs could deliver the loaded rHuKGF to the intercellular compartments of the FHs 74 Int cells. The MTT assay results shows that significant increase of the proliferation rate of FHs 74 Int cells compared with the positive control, $p < 0.05$. The absolute bio-availability of orally administered enteric capsules filled with rHuKGF oaded CNPs, using rabbit as animal model, was found to be 69%.



Conclusions
This study revealed that enteric capsules filled with mucoadhesive nanoparticles loaded with rHuKGF is a good candidate for oral delivery of rHuKGF.

PS17
BLAUTIA LUTI REGULATES GASTROINTESTINAL TOXICITY IN CANCER PATIENTS RECEIVING STANDARD DOSE CHEMOTHERAPY

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Introduction
Gastrointestinal mucositis remains a significant obstacle in the provision of optimal cancer care. Whilst the microbiota has received significant attention for its therapeutic potential, the exact microbial traits linked with treatment outcomes remain unclear.
We therefore aimed to 1) characterise the pre-treatment microbiota of patients scheduled to receive chemotherapy to identify microbes associated with treatment outcomes, and 2) investigate identified microbes *in vitro*.
Methods
Patients undergoing standard-dose chemotherapy were protectively recruited from the Royal Adelaide Hospital. Stool was collected on the day of chemotherapy. Clinical case notes were used to determine clinical toxicity scores. 'Toxic' patients were defined as Grade III/IV diarrhea. Microbial composition was assessed by 16S rRNA sequencing. Bacterial supernatants (SPNs) were prepared by centrifuging anaerobic cultures. SCFA profiles were determined by GC-HPLC. Human T84 cells were used for all *in vitro* experiments.
Results
12 patients were recruited, 4 of which were defined as toxic. Bacteria belonging to the Blautia genera were significantly higher in patients that did not develop toxicity (*P=0.018), with *Blautia luti* (BL) strongly correlating with toxicity outcomes (R2=-0.744**). BL preferentially produced acetate, with no other detectable SCFAs. BL-SPN increased T84 proliferation and enhanced T84 trans-epithelial resistance.
Conclusions
These results reinforce the emerging role of the microbiota in the development of GI toxicity. Unlike previous studies, we demonstrate the importance of an individual's pre-treatment microbiota in determining the outcomes of treatment, with *Blautia luti* protecting against toxicity development potentially by promoting mucosal recovery and intestinal barrier function. Further investigation is now warranted for therapeutic translation.

PS18
Digital Apps to Manage Anticoagulants and Control Symptoms

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Anticoagulation apps often assist patients, families, and providers to assist with correct dosing of warfarin; these apps will be discussed.
Symptom management will also be reviewed regarding anticoagulation.

PS19
The safety and efficacy of oral edoxaban administration without initial heparin therapy for venous thromboembolism in cancer patients.

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Introduction
Venous thromboembolism (VTE) is an important complication of cancer. The initial intravenous heparin followed by an oral anti-coagulant is one of the standard treatments for VTE. Since direct oral anticoagulants (DOACs) were introduced, single drug therapy with DOAC is becoming an alternative treatment because of freedom from heparin injection. However, the safety and efficacy of edoxaban, one of the DOACs, as a monotherapy has not been well evaluated.
Methods
We retrospectively reviewed 83 VTE patients with cancer who were treated with edoxaban in our hospital from January 2008 to December 2017. The patients were classified into two groups, treated with edoxaban alone (E) and those treated with heparin followed by edoxaban (H+E). Disappearance of VTE, VTE-related death, and major bleeding events were assessed. Differences of two groups were analyzed by chi-square test and Fisher's exact test as appropriate.
Results
The patient's characteristics were as follows; group E/H+E = 64/19, female/male = 39/44, and median age 70 (range 27-87). Disappearance of VTE was confirmed in 16 (25%) of group E and 5 (26%) of group H+E ($p = 0.908$). There is no VTE-related death in both groups. Major bleeding events were confirmed in 4 (6%) of group E and 1 (5%) of group H+E ($p = 1$). There were no statistically significant differences of the safety and efficacy between group E and H+E.
Conclusions
Edoxaban monotherapy is as effective and safe as heparin combination therapy. VTE patients with cancer may receive benefit by sparing heparin injection.

PS20
Empowering cancer patients for non-pharmacological primary prevention and early recognition of cancer-associated venous thromboembolism (VTE): the EMPATIC-CP survey.

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Introduction
Venous thromboembolism (VTE) is a leading cause of death and morbidity in patients with cancer. The aim of the present study was to explore the current practices regarding non-pharmacological primary VTE prevention and education for early recognition of potential VTE-related symptoms in cancer patients.
Methods
A specific electronic questionnaire was designed to assess the current practices in a sample of 52 Medical Oncology Departments from different healthcare institutions in Spain.
Results
The preliminary data from 30 centres were analysed. Education specifically addressed to recognizing alarm symptoms for cancer-associated emergencies was routinely performed: always (48%) or only for specific situations (52%).
The rates regarding specific patient education programmes for primary prevention and early recognition of VTE were: never (18%), always

(10%), only for patients with central venous catheter (CVC) (8%), and only for patients with CVC and/or other particular conditions (52%).
Patient education (multiple-choice questions) was performed by: specialist physicians (75%), medical residents (55%), outpatient clinic nurses (38%), daycare hospital nurses (58%), and pharmacists (14%).
Education aimed at recognizing VTE recurrence and/or bleeding complications in cancer patients with VTE was routinely performed in 62% of the participating centres.

Conclusions

Patient education for recognizing potentially life-threatening symptoms related to cancer, anticancer therapies and cancer-associated complications such as VTE poorly covered in our setting.
The implementation of strategic educational programmes aimed at increasing patient awareness about cancer-associated emergencies and VTE is an area requiring further research and development.

PS21

Emerging Targets and Pathways in Chemotherapy-Associated Cognitive Impairment

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Chemotherapy-associated cognitive impairment is a challenging adverse effect that has limited treatment options, owing to the poor understanding of its underlying mechanisms and pathophysiology. Past investigations have attempted to improve or mask the signs and symptoms of cognitive impairment by using central nervous system stimulants or memory-enhancing drugs; however, effectiveness of these pharmacological agents in clinical practice are greatly limited. In this talk, we will discuss the emerging targets and pathways that are currently under investigation for this debilitating condition in patients and survivors.

PS22

A randomized assessor-blinded wait-list controlled trial to assess the effectiveness and cost-effectiveness of acupuncture in the management of chemotherapy-induced peripheral neuropathy

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Introduction

The aim of the study was to test the effectiveness of an 8-week course of acupuncture in the management of chemotherapy-induced peripheral neuropathy in cancer patients who were receiving/received neurotoxic chemotherapy.

Methods

Randomized assessor-blinded controlled trial with two arms; one arm received acupuncture twice weekly for 8 weeks, while the other arm was a wait-list control group receiving only standard care. Primary outcome was pain intensity and interference over the past week using the Brief Pain Inventory at the end of the intervention. Secondary outcomes included CTCAE grading and Total Neuropathy Score-clinical version and Nerve Conduction Studies; and patient-reported outcome measures (FACT-COG-Ntx), [baseline, end of treatment(8-weeks), week 14 and week 20). For the health economics analysis, a within trial cost-utility analysis was used.

Results

Eighty-seven patients were randomized to the experimental arm (n=44) and the standard care arm (n=43). Significant changes at 8-weeks were detected in relation to primary outcome (pain), the clinical neurological assessment, quality of life domains and symptom distress (all $p<0.05$). Improvements in pain interference, neurotoxicity-related symptoms and functional aspects of quality of life were sustained in the 14-week assessment ($p<0.05$) as it was physical and functional well-being at the 20-week assessment ($p<0.05$). in the economic evaluation there was little difference in QALYs between the two arms (mean change 0.209 and 0.200 in the acupuncture and usual care arm respectively.

Conclusions

Acupuncture is an effective (but not cost-effective) intervention for treating chemotherapy-induced peripheral neuropathy and improving patients' quality of life and experience with neurotoxicity-related symptoms with longer-term effects evident.
ClinicalTrials.gov Identifier: NCT02553863

PS23

PREVENTION OF OXALIPLATIN-INDUCED PERIPHERAL NEUROPATHY (OIPN): RANDOMIZED PLACEBO-CONTROLLED TRIAL RESULTS INVESTIGATING EFFICACY AND SAFETY OF A RECOMBINANT SOLUBLE HUMAN THROMBOMODULIN (ART-123)

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Introduction

Oxaliplatin frequently induces severe neuropathy which results in treatment discontinuation and impacts on patient's quality of life. This was the first trial to investigate ART-123 effect in preventing OIPN.

Methods

pStage II/III colon cancer patients planning mFOLFOX6 as an adjuvant chemotherapy were randomly allocated to PLACEBO (placebo polysorbate on day1-3), 1-DAY ART (ART-123 380 U/kg on day1 and placebo on day2 and day3), and 3-DAY ART (ART-123 380 U/kg on day1-3) group in a double-blind manner. Study drug was given intravenously for 30 minutes once daily before oxaliplatin administration. Neuropathy was evaluated using FACT/GOG-NTX-12 (range: 0-48, lower score indicating severe symptom) and NRS (range: 0-10, higher value indicating severe pain) by a patient, and NCI-CTCAE by a physician. FACT/GOG-NTX-12 and NRS were assessed at baseline, day1 and day8 of every cycle, and day15 and day43 of Cycle12. NCI-CTCAE was assessed at baseline, on day1-3 of every cycle and day15 and day43 of Cycle12.

Results

Eighty patients were randomized and 79 patients (PLACEBO n=28, 1-DAY ART n=27, and 3-DAY ART n=24) were received study drug and analyzed. FACT/GOG-NTX-12 score showed both 1-DAY ART and 3-DAY ART had less severe neuropathy compared to PLACEBO. Same trend favoring ART group was observed with NRS. The cumulative incidence of NCI-CTCAE Grade2 or higher in sensory and motor neuropathy were numerically less in ART group compared to PLACEBO. No substantial difference in adverse events observed.

		PLACEBO (n=28)	1-DAY ART (n=27)	3-DAY-ART (n=24)
Overall scores in FACT/GOG-NTX-12 (the least-square mean (SE))	Baseline	46 (0.4)	47 (0.5)	46 (0.5)
	end of Cycle8	34 (1.8)	38 (1.8)	38 (1.9)
	end of Cycle12	29 (1.9)	36 (1.9)	32 (2.0)
Overall scores in NRS (the least-square mean (SE))	Baseline	0.0 (0.1)	0.1 (0.1)	0.1 (0.1)
	end of Cycle8	3.1 (0.6)	2.6 (0.6)	2.4 (0.6)
	end of Cycle12	4.7 (0.7)	2.9 (0.7)	4.3 (0.7)
Sensory neuropathy NCI-CTCAE (% Grade2 or higher)	Baseline	0%	0%	0%
	end of Cycle8	43%	22%	21%
	end of Cycle12	64%	41%	46%
Motor neuropathy NCI-CTCAE (% Grade2 or higher)	Baseline	0%	0%	0%
	end of Cycle8	11%	0%	4%
	end of Cycle12	21%	0%	4%
Median total dose of oxaliplatin (mg/m^2) (range)		819 (84-1000)	849 (331-1037)	921 (255-1012)

Conclusions
ART-123 showed promising efficacy in preventing OIPN without major safety concerns. This positive result warrants further drug development worldwide in near future.

PS24
Treatment of Neutropenia in High-Risk Patients Including Acute Leukemia and Bone Marrow Transplants

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Suspected neutropenic sepsis is an acute medical emergency and empirical antibiotic therapy should be administered immediately. The goal of empirical therapy is to cover the most likely pathogens that will cause life-threatening infections in neutropenic patients.
Alongside the specific empirical antimicrobial therapy, patients with neutropenic sepsis require the same management as those with non-neutropenic sepsis ensuring adequate end-organ perfusion, early interventions and aggressive resuscitation.
Assessing and identifying patients who are at high or low risk using the MASCC score for the development of severe infection and significant medical complications is important when managing patients with febrile neutropenia. High risk patients, including those with acute leukaemia and enzyme deficiencies, such as DPD, require intensive monitoring and treatment.
Early recognition of high risk neutropenic sepsis is important not only to initiate treatment but also to facilitate decisions regarding whether escalation of care and cardiopulmonary resuscitation is appropriate. Algorithms for the emergency management of neutropenic sepsis have been created and adapted as diagnostic and management techniques improve.

PS25
The Papaldo's hypothesis: the effectiveness of a reduced dosing of G-CSF in chemotherapy (CT)-treated patients with a low to moderate risk of febrile neutropenia (FN)

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Introduction
FN and its complications remain a major problem in CT-treated patients irrespective of the risk of developing FN in relationship to the given CT. Moreover, there are indications that the G-CSF prophylaxis may be effective even when the risk of FN is low. Papaldo et al. suggested, in a retrospective study, that a limited number of G-CSF administrations might be as effective as standard regimens in patients with low risk of FN.
Methods
We compared 2 injections of Tevagrastim to no prophylaxis in breast cancer patients receiving a first course of adjuvant or neo-adjuvant chemotherapy. Female patients, aged <65, were randomly allocated to receive Tevagrastim (300 or 480μg) on Day+8 and Day +12 after CT or to a control approach without prophylaxis.
Results
110 patients were included between 15/6/2012 to 25/5/2018; this trial (initially planned to include 71 patients per arm) had to be discontinued due to radical changes regarding G-CSF prescription in Belgium early in 2018. Among the patients who received prophylactic G-CSF after CT(53) we observed 2(3.8%) cases of FN while among those allocated to the no-prophylaxis group (57) 5(8.8%) episodes of FN were observed. The difference is not statistically significant (p=0.44). The overall incidence of FN in this trial was 6.4% (95% CI: 2.8%-13.1%).
Conclusions
Our trial failed to confirm the Papaldo's observations suggesting that a limited number of G-CSF prophylactic administrations would be beneficial in patients treated with CT regimens associated with a low risk of FN. Overall, the incidence of FN in our population was very low (6.4%).

PS26
Mortality due to febrile neutropenia in the era of personalized oncology: single center data of 521 consecutive patients.

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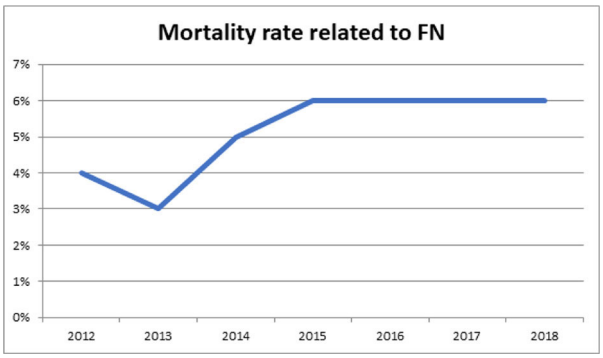
Introduction
Despite the development of new targeted anticancer treatments and immunotherapy, febrile neutropenia (FN) due to myelosuppressive chemotherapy is still a common potentially life-threatening complication in daily oncology practice. The aim of the present study was to assess the rate and clinical and microbiological characteristics associated with FN-related mortality in our setting.
Methods
We reviewed the clinical features and microbiological strains of consecutive patients with FN related to chemotherapy for solid non-hematological tumors in a general tertiary care urban hospital (January 2012-December 2018). In each patient, one single FN episode was randomly selected.
Results
In 521 consecutive patients (45% men; mean age: 61 y), 596 FN episodes were analyzed. Thirty-one patients died due to FN-related complications, with an overall FN-related mortality rate of 5.95% (CI 95%, 3.96% to 8.04%) which remained stable during the study period (4% in 2012; 3% in 2013; 5% in 2014; 6% in 2015; 6% in 2016; 6% in 2017; and 6% in 2018). Specific infectious agents were identified in 17 out of 31 (54%) patients who died including 7 positive blood cultures for Gram-negative bacilli (4 multisensitive *Pseudomona aeruginosa*, 2 multisensitive *Stenotrophomona maltophilia* and 1 extended spectrum beta lactamase-producing *Escherichia coli*), 1 sputum isolation of *Haemophilus influenza*, 2 influenza A virus in nasopharyngeal secretions and 3 cases of invasive aspergillosis.



Conclusions
The mortality rate due to FN-related complications remained stable over the study period. Specific infectious agents were identified in only half of the patient who died mostly involving multisensitive Gram-negative bacilli.

PS27

Sexual and Reproductive Health of Adolescent and Young Adult Patients

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Adolescent and young adult cancer patients and survivors (AYAs) consistently indicate the need for improved clinician-patient communication on sexual health topics, including dating, safe sex practices during treatment, contraception, body image, sexuality, fertility, and psychosexual adjustment. Unfortunately, clinicians often underestimate the relevance of sexual health issues among AYAs and rarely include sexual health in routine conversations through treatment and survivorship. In this presentation we will review data on the sexual health care practices and information needs of AYAs, review clinician and AYA patient-perceived barriers and facilitators to sexual health communication and discuss strategies to promote sexual health conversations throughout the course of cancer care.

PS28

Sexual Health and Preparedness in Survivors of Childhood Cancer: The Child-to-Adult Transition

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The transition to adulthood is a critical stage of human development during which young people leave childhood behind and take on new roles and responsibilities. It is a period of social, psychological, economic, and biological transitions. For many, it also involves demanding emotional challenges and important life and health choices. For young people with cancer we know this transitional period can be less than straightforward. They must assume increasingly independent responsibility for the management of their condition and at the same time they maybe required to transition from child to adult services. Both these transitional processes require support from healthcare professionals, and that is best achieved through the delivery of developmentally appropriate transitional care.

Work by colleagues on behalf of the Transition Collaborative Group in the UK have described five conceptual dimensions of developmentally appropriate care (2016). Underpinning all of these dimensions is the need for adjustments to be made by the young person, adjustments to be made by parents, and for healthcare professionals to anticipate, prepare for and support these adjustments through effective communication, coordinated and consistent joined up working across specialities.

Open discussions with young people about how cancer is affecting different aspects of their life, is a crucial strategy in the delivery of this approach to care. Sexual health is just one aspect, but important, as consistently research indicates that young people feel unprepared. There could be many reasons for this, from the patient and provider perspective, where there could be both an 'avoidance to ask' and an 'avoidance to tell'. This presentation will take the delivery of developmentally approriate transitional care as a framework to share research and practice initiatives that best illuminates preparedness in relation to sexual health.

Reference:

Farre A Wood V Rapley T Parr JR McDonagh JE 2016. Developmentally appropriate healthcare for young people: a scoping study. Archives of Disease in Childhood 100(2) 144-51.

PS29

Sexual Dysfunction in Adolescent and Young Adult Patients and Survivors

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Research is needed on sexual dysfunction among adolescent and young adult cancer survivors. Ten studies published since 2010 concur that survivors have elevated rates of sexual dysfunction. Eight surveyed cohorts ranging from 95 to 599 survivors, often recruited for broader studies. Response rates varied from 47% to 77%. Two studies matched survivors to sibling controls. Most included mixed cancer types, but one focused on young breast cancer survivors, one on women at high genetic risk for breast cancer, and one on men after acute lymphoblastic leukemia. Questionnaires measuring sexual function were very brief. Only two studies utilized questionnaires considered gold standards, making it difficult to estimate rates of specific sexual dysfunctions. Prevalence of dysfunction appears to increase with aging and may be correlated with measures of physical health or emotional distress. Women report more sexual dysfunction than men.

Only two pilot studies have examined interventions to improve sexual health in this population, both demonstrating feasibility. Programs in the United States for Adolescent and Young Adult (AYA) patients typically have oncofertility education and referral, but only a minority offer special services for sexual health. Every patient should be asked about sexual problems and staff experts should be trained to do assessments. Multidisciplinary treatment is important. Psychosocial factors often include damaged body image, social isolation, and fears about dating. Unintended pregnancy and resorting to emergency contraception are too common among young women. On the medical side, hypogonadism in men and premature ovarian failure in women are major contributors to sexual dysfunction.

PS30

NEEDS FOR INFORMATION AND SUPPORT ABOUT SEXUALITY-RELATED ISSUES OF ADOLESCENT AND YOUNG ADULT CANCER PATIENTS: ROOM FOR IMPROVEMENT?

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Introduction

The negative impact of cancer on sexuality is widely known. In adolescents and young adults with cancer (AYAs), treatment can even have a bigger impact as it interfere with sexual development. AYAs report unmet psychosexual needs. Inadequate support from physicians and lack of information regarding sexuality-related issues may contribute to unmet needs. The aim of this study was to explore AYAs view on information received regarding sexuality-related issues, to determine what information patients want and the optimal timing to discuss sexuality-related issues.

Methods

39-item questionnaire was developed in co-creation with AYAs. The questionnaire was administered among AYAs(15-39 years) who attended Dutch AYA congress and members of secured Dutch AYA online community in March 2018.

Results

The questionnaire was completed by 56 AYAs, mean age of 29.4(20-41) at the moment of the questionnaire. Three-quarter of them reported sexuality-related issues as result of cancertreatment. Information regarding these issues was considered as important by 91%. 41.1% did receive information from a professional. 79% of this group was unsatisfied with

the existing information. The best way of information provision was through a website(66%) or consultation with a professional (64%) (figure 1). The nurse practitioner was the most preferred professional(62%). AYAs valued to discuss sexuality during multiple moments throughout cancer trajectory, with preferred moments; before(64%), during(52%) and after treatment(50%).

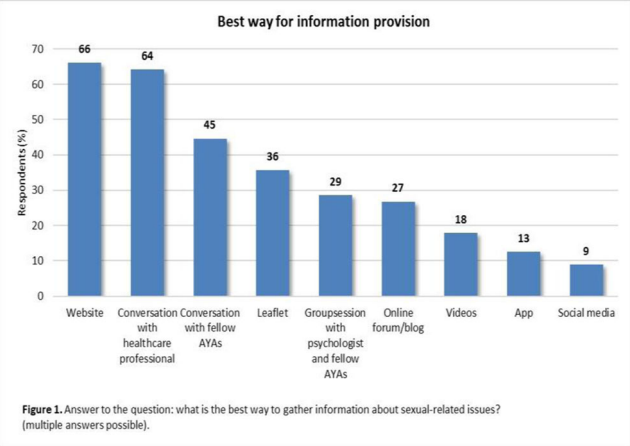

Figure 1. Answer to the question: what is the best way to gather information about sexual-related issues? (multiple answers possible).

Conclusions

AYAs do report unmet needs regarding adequate information about sexuality-related issues. A website or consultations with a nurse practitioner during multiple moments throughout disease trajectory were preferred. Future research will focus on improvement of information and its provision.

PS31

COMPARISON OF THE DIETARY INTAKES BETWEEN CHILDREN WITH SOLID TUMORS AFTER THE COMPLETION OF CHEMOTHERAPY AND HEALTHY CONTROLS

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Introduction

Malnutrition is a common complication in children with cancer. Few studies have compared the dietary intakes between children with solid tumors and healthy controls. This study aimed to compare the dietary intakes between children with solid tumors after completing chemotherapy and healthy controls.

Methods

Children (7-18 years) with solid tumors were recruited during year 1 after completing chemotherapy. Healthy controls were recruited via flyers. Children completed the Block Kids Food Screener for dietary intakes in the past week. Mann-Whitney U tests were conducted to answer the research question.

Results

Forty-nine children (25 cancers/24 controls) were analyzed. No differences were found in age, race, sex and BMI levels between two groups. For macronutrient intakes, children with solid tumors reported significantly higher mean daily intakes of calories (1503kcal vs 1059kcal), protein (63g vs 45g), fat (63g vs 44g), carbohydrate (176g vs 123g), and fiber (13g vs 8g) than controls. No differences were found for energy ratios (%kcal) of protein (17% vs 17%), fat (37% vs 38%) and carbohydrate (48% vs 46%) between two groups. Children with cancer also reported significantly higher mean intakes of antioxidant nutrients: vitaminE (4mg vs 3mg), vitaminC (88mg vs 57mg) and selenium (72mcg vs 52mcg).

Conclusions

Children with cancer reported significantly higher intakes of macronutrients and antioxidant nutrients than healthy children, but no differences in major energy ratios. Higher dietary intakes among cancer children may be due to fatigue and weight change associated with cancer and cancer treatment. Future work should explore associations between dietary intakes and fatigue and weight change.

PS32

Gabapentin Mitigates Neuropsychiatric Symptoms in Patients Undergoing Concurrent Chemo-Radiation for Head and Neck Cancer: Interim Results from a Randomized Trial

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Introduction

Pain and dysphagia are substantive factors in the quality of life of head and neck cancer (HNC) patients. Preliminary evidence exists that gabapentin can be effective for the management of some HNC-related pain. We have undertaken a randomized trial in HNC patients undergoing primary or adjuvant concurrent chemoradiation therapy (CCR). The primary outcome is pain with exploratory outcomes being measured via the Vanderbilt Head and Neck Symptom Survey+ Generalized Symptom Survey (VHNSS+GSS). We report the interim analysis of the exploratory endpoints. Because pain is the primary outcome of the study, it will not be reported until the study is completed.

Methods

HNC patients planned for CCR were randomized to standard management or standard care plus escalating doses of gabapentin as tolerated up to 900 mg thrice daily. Participants completed the VHNSS+GSS weekly during treatment and quality of life assessments at baseline and end of treatment.

Results

Data from 71 patients (5.5 average surveys completed) were included. The gabapentin arm experienced a reduction in overall systemic symptoms as measured by the GSS (11-items, p=0.0073), fatigue (two-items, p=0.013), sleep disturbance (five items, p <0.0001), neurosensory eating (3 items, p=0.026), phlegm-related symptoms (4 items, p=0.004), and trend to better smell (2 items, p=0.055).

Conclusions

This analysis suggests that gabapentin may be useful for mitigating local and systemic neuropsychiatric symptoms in patients undergoing CCR. Further studies specifically targeted at these exploratory findings are warranted.

PS33

Fixed-Dose 7.5 mg Rasburicase Is Safe and Cost-Effective in Preventing Tumour Lysis Syndrome in Adult Haematology Patients at University College London Hospitals (UCLH) NHS Trust

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Introduction

Haematological malignancies with a high tumour burden and/or cell turnover are at risk of tumour lysis syndrome (TLS) which is an oncological emergency. Rasburicase prophylaxis is recommended for patients at high risk of TLS development (Cairo *et al* 2010) and the licensed TLS prophylactic and treatment dose is 200micrograms/kg/day. At UCLH Rasburicase prophylaxis is recommended at 7.5mg fixed dose in high risk patients (see Figure 1). A retrospective audit was conducted to assess the efficacy of Rasburicase 7.5mg fixed dose in the prevention of TLS in high risk adult haematology patients.

Figure 1: Excerpt of UCLH Trust supportive care guidelines on Tumour Lysis risk stratification

Table A: Tumour Lysis Risk Categories

Risk category	Treatment Column
Disease subtype	A
Disease subtype **plus** ≥ 2 elevated laboratory values[a]	B
Disease subtype **with/without** ≥ 2 elevated laboratory values **plus** renal dysfunction[b]	C
[a]Elevated laboratory values is indicated by Uric acid ≥ULN; Potassium ≥6.0mmol/L; Phosphate ≥1.45mmol/L	
[b]Renal dysfunction is indicated by a GFR <60ml/min or evidence of renal infiltration	

Table B: Risk stratification of tumour lysis syndrome according to haematological malignancy and laboratory values

Disease subtype	COLUMN A Baseline risk	COLUMN B If elevated uric acid, K+ or PO4 levels	COLUMN C If renal dysfunction
Multiple myeloma / Myeloproliferative neoplasms / Hodgkin and Indolent Non-Hodgkin lymphoma			
All patients and sub-types	Low	Low	Intermediate*
Chronic Myeloid Leukaemia			
Chronic phase	Low	Low	Intermediate
Blast crisis	see below	see below	see below
Chronic Lymphocytic Leukaemia			
Treatment with alkylating agents	Low	Low	Intermediate*
Venetoclax – All lymph nodes<5cm AND ALC<25x10^9/L	Low	Low	Intermediate
Venetoclax – Any lymph node 5-10cm OR ALC ≥25x10^9/L	Low	Intermediate	Intermediate
Venetoclax – Any lymph node ≥10cm **OR** ALC ≥25x10^9/L AND any lymph node ≥5cm	High	High	High
Acute Myeloid Leukaemia or Chronic Myeloid Leukaemia blast crisis			
WBC <25x10^9/L with LDH <2xULN	Low	Low	Intermediate
WBC <25x10^9/L with LDH ≥2xULN	Intermediate	High	High
WBC ≥25x10^9/L and <100x10^9/L	Intermediate	High	High
WBC ≥100x10^9/L	High	High	High
Acute Lymphoblastic Leukaemia			
WBC <100x10^9/L with LDH <2xULN	Intermediate	High	High
WBC <100x10^9/L with LDH ≥2xULN	High	High	High
WBC ≥100x10^9/L	High	High	High
Burkitt Leukaemia			
All patients	High	High	High
Burkitt Lymphoma			
Stage 1-2 with LDH <2xULN	Intermediate	Intermediate	High
Stage 1-2 with LDH ≥2xULN	High	High	High
Stage 3-4	High	High	High
Aggressive Non-Hodgkin lymphoma			
All patients with LDH <ULN	Low	Low	Intermediate*
Non-bulky disease with LDH ≥ULN	Intermediate	High	High
Bulky disease with LDH ≥ULN	High	High	High

Methods

High risk adult haematology patients who received 7.5mg Rasburicase prophylaxis over a 12-month period from April 2017 were audited. Patients were identified using electronic records and reviewed for TLS development. Cost of fixed dose Rasburicase was compared to the licensed dose.

Results

Fixed dose 7.5mg Rasburicase was administered to 57 high risk patients (see Table 1). Only 3 out of 57 patients (5.3%) developed TLS (see Table 2). Over 12 months at UCLH, using a Rasburicase 7.5mg fixed dose in high risk patients resulted in a 54% cost saving compared to the licensed dose (see Table 1).

Table 1: Patient details who received Rasburicase fixed dose 7.5mg prophylaxis and cost-analysis at UCLH over a 12 month period.

Patient demographics	n=57
Sex: Male, n (%)	36 (63%)
Age in years, median [range]	55 [20-83]
Weight in kg, median [range]	80 [48.5-143]
Diagnosis, n (%)	
Aggressive Non-Hodgkin Lymphoma (NHL)	14 (24.5)
Burkitts Lymphoma	5 (8.8)
Acute Myeloid Leukaemia (AML)	18 (31.6)
Acute Lymphoblastic Leukaemia (ALL)	9 (15.8)
Chronic Lymphocytic Leukaemia (CLL)*	11 (19.3)
Rasburicase fixed dose 7.5mg usage	
Total number of fixed doses administered	108
Fixed dose 7.5mg administered, median [range]	1 [1-6]
Rasburicase cost analysis	
Total cost if licensed dose of 200microgram/kg/day administered	£98,777.86
Total cost of fixed dose 7.5mg administered	£45,012.24
Total cost saving over 12 months	£53,765.62
*Venetoclax treatment with high tumour burden of lymph node >10cm and/or renal impairment	

Table 2: Incidence of tumour lysis syndrome (TLS) in patients who received Rasburicase 7.5mg fixed dose at UCLH over a 12 month period

	Patient 1	Patient 2	Patient 3
Diagnosis	AML	Burkitts lymphoma	Aggressive NHL
Number of prophylactic fixed dose 7.5mg given	4	2	1
Laboratory TLS[1] occurred	Yes	Yes	Yes
Clinical TLS[2] occurred	No	Yes	Yes
Number of treatment dose 200microgram/kg/day Rasburicase given	2	2	3
Outcome	Alive	Alive	Alive
[1]Defined as abnormal serum values of 2 or more (uric acid, potassium, phosphate, albumin-adjusted calcium) either at presentation or change by 25% within 3 days before or 7 days after chemotherapy			
[2]Defined as laboratory evidence of TLS plus 1 or more of the following: serum creatinine >1.5xULN; cardiac arrhythmia or sudden death; seizure			

Conclusions

A meta-analysis of adults who received Rasburicase prophylaxis reported 7.4% of patients (n=768) developed clinical TLS (Lopez-Olivo *et al* 2013). This is similar to the incidence of TLS in our institution in high risk patients who received fixed dose Rasburicase. Prophylactic fixed dose 7.5mg Rasburicase in patients at high risk of TLS development is safe and cost-effective.

PS34

Symptoms Predictive of Overall Quality of Life Using the Edmonton Symptom Assessment Scale in Breast Cancer Patients Receiving Radiotherapy

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Introduction

Breast cancer patients often experience multiple symptoms which negatively impact their quality of life (QOL). Patient-reported scores on symptom screening tools are used by healthcare professionals to manage QOL. The objective of this analysis is to examine which symptoms from the Edmonton Symptom Assessment Scale (ESAS) are most predictive of overall wellbeing (QOL) in breast cancer patients over the course of radiation therapy (RT).

Methods

All non-metastatic breast cancer patients completed the ESAS before, during, and after RT. Simple univariate linear regression analysis, followed by backward stepwise selection was applied to select the most significant ESAS symptoms related to overall QOL at all three time points.

Results

A total of 1224 patients were included in the study. Before RT, multivariable analysis identified five symptoms that were strongly associated with

overall QOL: pain, tiredness, anxiety, depression, and loss of appetite (Table 1). During RT, pain, tiredness, and anxiety were the most significant predictors of QOL. After RT, six symptoms were found to have the strongest correlation with QOL – pain, tiredness, anxiety, depression, loss of appetite, and drowsiness (Table 2). At each time point, patients with higher scores for the identified significant symptoms were likely to have worse overall QOL.

Table 1. Univariate and Multivariable Linear Regression Analysis with Predictive Factors of Overall Wellbeing

	Before RT				During RT				After RT			
Analysis	Coefficient	SE	p-value	MSE	Coefficient	SE	p-value	MSE	Coefficient	SE	p-value	MSE
Univariate												
Pain	0.480	0.026	<.0001	0.42	0.507	0.050	<.0001	0.36	0.540	0.024	<.0001	0.39
Tiredness	0.591	0.022	<.0001	0.34	0.681	0.046	<.0001	0.28	0.648	0.021	<.0001	0.31
Nausea	0.454	0.044	<.0001	0.50	0.336	0.079	<.0001	0.46	0.519	0.042	<.0001	0.49
Depression	0.543	0.023	<.0001	0.37	0.520	0.047	<.0001	0.35	0.558	0.023	<.0001	0.37
Anxiety	0.514	0.023	<.0001	0.38	0.536	0.046	<.0001	0.33	0.564	0.022	<.0001	0.36
Drowsiness	0.477	0.025	<.0001	0.42	0.443	0.050	<.0001	0.38	0.530	0.024	<.0001	0.40
Loss of appetite	0.473	0.025	<.0001	0.42	0.427	0.055	<.0001	0.40	0.503	0.027	<.0001	0.43
Dyspnea	0.401	0.029	<.0001	0.47	0.367	0.064	<.0001	0.44	0.441	0.029	<.0001	0.46
Multivariable												
Intercept	0.290	0.027	<.0001	0.27	0.222	0.054	<.0001	0.23	0.288	0.026	<.0001	0.25
Pain	0.138	0.024	<.0001		0.199	0.046	<.0001		0.171	0.024	<.0001	
Tiredness	0.315	0.025	<.0001		0.454	0.049	<.0001		0.314	0.028	<.0001	
Anxiety	0.191	0.027	<.0001		0.266	0.044	<.0001		0.172	0.028	<.0001	
Depression	0.159	0.029	<.0001		NS				0.106	0.028	<.0001	
Loss of appetite	0.113	0.024	<.0001		NS				0.110	0.024	<.0001	
Drowsiness	NS				NS				0.073	0.026	<.0001	

SE: Standard error. MSE: Mean square error. NS: Non-significant in the multivariable analysis.

Table 2. Predictors of Overall Wellbeing Over the Course of RT

	Before RT	During RT	After RT
ESAS Symptoms	Pain	Pain	Pain
	Tiredness	Tiredness	Tiredness
	Anxiety	Anxiety	Anxiety
	Depression		Depression
	Loss of appetite		Loss of appetite
			Drowsiness

Conclusions

Of the ESAS symptoms identified as significant predictors of QOL, pain, tiredness, and anxiety correlated with overall wellbeing at all time points. Special attention should be paid to manage symptoms that are most predictive of overall QOL, in order to ensure optimal symptom management in breast cancer patients receiving RT.

PS35

Treatment-Related Mortality in Children with Acute Lymphoblastic Leukemia in a Low-Middle-Income Country

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Introduction

Despite noteworthy improvements in the outcome of children with acute lymphoblastic leukemia (ALL), treatment-related mortality (TRM) is a common cause of treatment failure. The objectives of this study were to determine the frequency, etiology and factors associated with TRM in children with ALL in a low-middle income country (LMIC).

Methods

An observational; retrospective, cohort study conducted in the department of Pediatric Hematology-Oncology, The Children's Hospital Lahore, Pakistan.

Results

During the study period of 21 months, total 742 new patients of ALL were registered while 247 patients (33.28%) expired. We enrolled 159 patients who fulfilled the inclusion criteria. The incidence of TRM was 64.4%. The median age was 5 years with male-to-female ratio of 1.3:1. The most common cause of TRM was sepsis (n=126, 79.2%), followed by hemorrhagic complications (n=11, 6.9%), drug toxicity (n=4, 2.5%), tumor lysis syndrome (n=2, 1.3%) and thromboembolism (n=1, 0.6%). Fifteen patients (9.4%) expired due to progressive disease during remission induction chemotherapy. Significant factors associated with TRM were weight-for-age (WFA), primary diagnosis and reason for admission. WFA less than 25th percentile was found in 89 patients (60.1 %), commonest diagnosis was B-cell ALL (n=137, 86.2%) and majority of patients (n=109, 68.6%) were admitted for remission induction chemotherapy.

Conclusions

The incidence of mortality is quite high in patients with ALL in LMIC. TRM though potentially avoidable is still a significant cause of treatment failure. Infections are a major challenge in managing TRM and infection control is imperative in improving the outcome.

PS36

Myth Busters of Clinical Tobacco Intervention in the Oncology Setting and Professional Perceptions

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Continued smoking after a cancer diagnosis can worsen clinical outcomes. As part of a Cancer Care Ontario province wide strategy, tobacco screening and cessation programs for cancer survivors have been implemented across all major cancer centres in Ontario since 2014. During this process, we have identified multiple myths related to tobacco cessation interventions and identified professional perceptions related to tobacco cessation for cancer survivors. In this session we will review some of the specific challenges of the oncology setting including timing of discussions, achieving institutional support and motivation towards change among front-line staff, clinicians and policy makers. We also discuss about the opt-out approach that has been implemented by cancer centres to help encourage patients to take part in cessation programs being offered and the impact this strategy has had on tobacco screening and referral rates. Specific strategies that have helped with local implementation including using a multi-disciplinary approach will be reviewed during the session. Lastly, professional perceptions and factors that motivate clinicians to encourage patients to quit smoking will be also discussed.

PS37

Cancer Patient Awareness and Attitudes about Tobacco Cessation

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Background

Continued smoking after a cancer diagnosis is associated with poorer outcomes. Understanding factors influencing tobacco cessation and patient perceptions of tobacco can help with developing tobacco cessation strategies for cancer survivors.

Methods

Cancer survivors at Princess Margaret Cancer Centre (2012-2017) completed survey studies evaluating tobacco use, second-hand smoke (SHS) exposure, patient awareness and perceptions of the harms of continued smoking and their preferences and attitudes towards tobacco cessation.

Results

Many cancer patients self-reported being unaware that continued smoking can result in greater cancer surgical complications (53%), increased radiation side-effects (62%), decreased quality-of-life during chemotherapy (51%), decreased chemotherapy or radiation efficacy (57%), increased risk of death (40%) and increased development of second primaries (38%). Despite this, many patients (>65%) perceived tobacco as harmful on quality-of-life, fatigue and survival and these risk perceptions were associated

with tobacco cessation after diagnosis. Most patients (>95%) felt tobacco should be assessed at the first visit, were comfortable with being assessed and felt it was important for healthcare providers to be aware of their tobacco use. Patients exposed SHS were less likely (aOR 2-8) to quit smoking after a cancer diagnosis; most patients who quit, did so during the peri-diagnosis period. Many patients felt that oncologists have a role in screening, assessing and managing SHS exposure around them.

Conclusions

Many patients self-report being unaware of the harms of continued smoking. Risk perceptions and SHS exposure were associated with tobacco cessation after cancer diagnosis. Cessation strategies should focus on improving patient education and reducing SHS exposure.

PS38
Emergencies

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Checkpoint inhibitors have significantly improved outcomes for patients in a number of malignancies. These treatments are associated with toxicities which stem from increased activity within T cell lineage similar to that observed in autoimmunity. These immune-related toxicities can affect virtually any organ system and are potentially fatal. The timing of the onset of the adverse events is dependent on the organ system affected and can be delayed significantly after initiation or completion of therapy.

The critical first step in the emergency management of immune-related toxicities is their recognition. The increasing indications for, and usage of, checkpoint inhibitors means that more patients on these therapies will present to emergency settings. Determining if these patients have an immune-related toxicity requires careful clinical workup and necessitates education of health care professionals working in acute care settings. Early recognition and intervention can reduce the duration and severity of the complications. This necessitates that consideration is given to the models of acute care utilised in the emergency management of patients on checkpoint inhibitors. Guidelines for the acute management of immune-related toxicities have been developed and published. The basics of treatment are to withhold the checkpoint inhibitor, supportive treatment of the organ system affected and potentially the use of immune modulating medications, such as corticosteroid therapy. This presentation will consider the emergency management of immune-related toxicities, the clinical workup of acute presentations in patients on checkpoint inhibitors and the challenges of ensuring safe care for these patients in various emergency oncology models.
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PS39
Rheumatological Toxicities

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Rheumatological side effects of immune checkpoint inhibitors (CI) occur in only 5-10% of treated patients but can be 1. refractory, requiring long-term immunosuppression (e.g. CI-associated arthritis), or 2. life-threatening (e.g. CI-associated myositis). Half of patients with CI-associated joint pain have a condition identical to rheumatoid arthritis ("RA-phenotype") with positive rheumatoid factor and/or anti-cyclic citrullinated peptide antibody (CCP) in 60%, and a high prevalence of the RA-associated HLA-DRB1 "shared epitope". The remaining patients with CI-associated joint pain have a large-joint inflammatory arthritis (± tenosynovitis), polymyalgia rheumatica, or arthralgia without arthritis. Early treatment of high-grade "RA phenotype" CI-arthritis with TNF inhibitors can help to minimize long term exposure to high-dose corticosteroids. CI-associated myositis can take an aggressive course requiring treatment with high dose corticosteroids, IVIG and mycophenolate mofetil. Anti-striated muscle antibodies are sometimes found in these patients, but myositis-specific auto-antibodies are not usually present. Cancer patients who have an underlying rheumatic disease can be treated with CI. Half of them will experience a flare of their underlying disease, and a third will experience de novo immune related adverse events (IRAE), but their overall rate of IRAE is not increased. Anti-rheumatic drugs should be held at the time of CI-initiation in order to maximize cancer responses.

PS40
Opioids for Cancer Pain - What Is the Evidence?

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What is the Evidence for Opioids in the Management of Cancer Pain
Mellar P Davis

There have been 120 unique studies involving 13,254 patients with pain from cancer, yet despite numbers of studies and patients the evidence has been rated as low t o very low[1]. Why? First there are no placebo-controlled trials which seems to be an unethical approach but in fact enrichment enrollment with randomized withdrawal trials (allowing for rescue) have been done for chronic pain with a SMD 0f -0.42 ($p<0.0001$) (NNT 6)[2]. Cancer pain trials suffer largely from imprecision due to small numbers of participants per trial and outcomes which may not have clinical relevance such as mean differences in pain severity, pain intensity reductions of 30 and 50%. The Cochrane Reviews use no more than mild pain at 14 days which has clinical relevance because of time frame. Meta-analysis often included < 10 trials, missing data was accounted for by either including completers only or by LOCF rather than BOCF which biases responses. Many trials have > 10% missing data. Non-statistical differences were interpreted as "non-inferiority" where the absences of statistical differences do not mean there are not differences. Despite low quality evidence, 95 % of patients should have no more than mild pain at 14 days with 1 out of 10 discontinuing their opioid for adverse effects[1]. This lecture will review the evidence for individual opioids and make recommendations regarding trial design.

1. *The Cochrane database of systematic reviews.* 2017;7:CD012592.
2. *J Pain Res.* 2018;11:923-934.

PS41
Opioid Addiction in Cancer Patients: Prevention and Management

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Opioid Addiction in Cancer Patients: Prevention and Management

Two clinical scenarios may present:

1. A new cancer diagnosis +/- pain in the setting of prior opioid addiction
2. Concerns around inappropriate opioid use - or diversion - in someone with a current (or past) cancer diagnosis on opioids for cancer-related pain.

The two scenarios require different approaches, but effective pain control is still possible.

Current concerns about the opioid epidemic are well-founded in the wider society but lessons from other patient populations cannot automatically be applied to cancer. Experiences in various cancer sub-populations, e.g.

postoperative pain, cannot be applied to metastatic disease. Good documentation is essential to protect physicians from excess regulatory zeal.
There is frequent confusion between the concepts of Opioid Dependency and Opioid Addiction. Pseudo-Addiction refers to ineffective pain management leading to drug-seeking behavior as a rational response to distress. Clinicians should know the criteria for Opioid Use Disorder and Opioid Withdrawal Syndrome. Opioid management in established addiction is often complicated by simultaneous alcohol, benzodiazepine or cannabinoid use/abuse.
Opioids have significant gastrointestinal and neuropsychological effects which must be considered in addition to the pain. It is also important to remember that not all pain in cancer patients is due to the cancer. Buprenorphine, methadone, naloxone, naltrexone and lofexidine are important drugs in management. They are effective and safe in expert hands. Addiction as a clinical problem occurs only in a minority of cancer patients (family members can be more problematic).

PS42
AN INVESTIGATION OF THE SENSITIVITY OF THE ROME IV CRITERIA FOR OPIOID-INDUCED CONSTIPATION

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Introduction
The aim of this study was to investigate the prevalence of opioid-induced constipation (OIC) using different diagnostic criteria, and specifically the new Rome IV criteria.
Methods
This was a prospective, multi-centre, observational study of 350 patients with cancer who were receiving regular opioid analgesia for cancer pain. Patients were assessed for OIC using: a) Simple question ("are you constipated?"); b) Camilleri definition; c) EAPC definition (constipation); d) Rome IV criteria; e) comprehensive Specialist Palliative Care (SPC) clinician assessment. Patients also completed the Bowel Function Index (to assess adequacy of treatment), the PAC-QOL (to assess related quality of life), and the MSAS-SF (to assess correlation between constipation and other physical and psychological symptoms).
Results
The prevalence of OIC according to different diagnostic criteria was:
- "Simple" question: 32.8%
- EAPC definition: 27.7%
- Camilleri definition: 59.4%
- Rome IV criteria: 23.4%
- SPC clinician assessment: 60.8%

Of the 213 patients who were deemed to have OIC by comprehensive SPC clinician assessment, only 79 were Rome IV positive (and 134 were Rome IV negative). Thus, the sensitivity of Rome IV criteria was only 37.4%, (specificity 98%). In contrast, there was a good correlation between the SPC clinician assessment and the Camilleri definition (sensitivity 85.7%; specificity 73.2%).
Conclusions
Asking a simple question ("are you constipated") will miss many patients with OIC. The "gold standard" appears to be a comprehensive SPC clinician assessment, although the Camilleri definition appears to be a useful screening question. The Rome IV criteria does not appear to be a sensitive method for diagnosing OIC.

PS43
The effect of abdominal massage in managing opioid-induced constipation

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Introduction
Incidence of opioid-induced constipation was reported to be between 17-88% in the literature and very important.
Methods
This study, which is a single-blind randomized controlled trial, was conducted between February 2017 and January 2018 with the participation of 204 patients with opioid-induced constipation complaint. 102 patients were assigned to experimental group and 102 patients were to control group using the previously prepared randomization checklist. Patients in the experimental group were given a 15-minute video-guided abdominal massage training by the researcher, and the patients in this group were asked to perform abdominal massage for 4 weeks, twice a day, 30 minutes after breakfast and dinner. In the control group, the standard approach of the clinic was applied. Patient Data Form, Defecation Diary, Visual Scale, Patient Assesment of Constipation Quality of Life Questionnaire were used to obtain the study data.
Results
The study showed that abdominal massage decreases the severity of constipation, the feeling of incomplete bowel emptying, the severity of straining, the severity of anal pain and bloating ($p < 0.05$), provides better stool consistency ($p < 0.05$) and increases the number of defecation as well as the score of quality of life ($p < 0.05$).
Conclusions
As a result, it was determined that abdominal massage application increased the number of defecation by 13% and it is an effective approach in the managing opioid-induced constipation symptoms.

PS44
Adult Cancer Survivors

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The ageing of the population, increasing cancer incidence and improved treatments are leading to a growing number of people living with and beyond cancer; that is 'cancer survivors.' The majority of survivors are aged 70 years or over and the vast majority have coexisting illnesses. Unfortunately, current models of post-treatment care are suboptimal. Survivors report significant unmet needs, including for improved symptom management, and greater levels of information and support across physical, psychosocial and practical domains. A new approach to follow-up care is needed to better meet the needs of survivors while also dealing with the challenges of provider shortages and increasing healthcare costs. Models of post-treatment care should address the holistic healthcare needs of survivors through provision of optimal cancer-specific follow up, management of comorbid conditions, and general preventive health care. Over a decade ago, the Institute of Medicine made recommendations for improved survivorship care that include surveillance and prevention of recurrence, new cancers and late and long-term effects, as well as interventions for the various issues that cancer survivors may experience. Survivors should be provided with a treatment summary and a plan for follow up, and care should be coordinated between specialists and primary care providers to ensure that survivors' needs are met. Care needs to move from a 'one-size-fits-all' approach to one that is more personalised, better utilises primary care and other available services, and supports self-management. There is growing evidence that such models are feasible, can improve patient outcomes and reduce costs.

PS45
Symptom Clusters in Cancer Survivors

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Introduction
Little is known about how symptoms cluster together in cancer survivors. Study purposes were to evaluate for differences in number and types of symptom clusters using ratings of occurrence, severity, and distress and evaluate for differences in symptom cluster severity scores using a number of phenotypic characteristics.
Methods
Memorial Symptoms Assessment Scale (MSAS) was used to assess occurrence, severity, and distress of 32 symptoms. Exploratory factor analyses were used to identify the symptom clusters. Regression analyses were used to identify differences in mean symptom severity scores for a number of phenotypic characteristics.
Results
The 623 survivors were 60.1 (±11.2) years of age and 4.7 (±4.8) years from their cancer diagnosis. Three symptom clusters were identified across the three symptom dimensions. For the fatigue cluster, lack of energy and feeling drowsy were consistent across the three symptom dimensions. For the psychological cluster, difficulty concentrating, feeling nervous, feeling sad, worrying, feeling irritable were consistent across the three symptom dimensions. For the constitutional cluster, itching, dizziness, swelling of arms and legs were consistent across the three symptom dimensions. For all three symptom clusters, severity scores were significantly higher in survivors who were younger, female, reported a history of depression, had multiple morbidities, and a higher BMI.
Conclusions
Findings suggest that the number and types of symptom clusters are relatively similar regardless of the symptom dimension used to create the clusters. Specific phenotypic characteristics associated with a higher symptom cluster factor score provide evidence of validity for these clusters.

PS46
Utilising a web enabled solution to ensure a Sustainable Survivorship Program

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Introduction
In Australia, pilot programs to date have identified issues with sustainability of Survivorship Programs due to heavy resource requirements in the preparation of Survivorship Care Plans (SCP), documentation and communication between health professionals and services. These pilots have recommended the utilisation of IT systems to improve access, communication, collate information and reduce resource requirements. We have implemented a web based patient portal (WBPP) to create structured SCP's, enable population based research and measure long-term outcomes.
Methods
Patients complete validated screening tools at key points via the WBPP. In consultation with the patient a Clinical Nurse Consultant (CNC) will make appropriate allied health referrals and surveillance recommendations. Relevant information is extracted electronically from the patients Electronic Medical Record (EMR) into a SCP reducing the time required for the CNC to complete. The patient controls access to their information. Data collection informs resource allocation, referral and communication pathways.
Results
100% of patients that have come through the program have registered on the WBPP. Within a 12 month periods 123 patients were introduced to the survivorship program, 97 patients completed their initial consults with 97 SCP provided. The program has been sustainable with one nurse working three 8 hour shifts/week..
Conclusions
The use of the WBPP offers an efficient, sustainable solution. The WBPP reduces time spent configuring SCP's and manually completing paper based questionnaires and assessments, allowing resources to be focused on patient contact and program development. Decreasing time pressure on resources through the use of an online portal will ensure sustainability of the Survivorship Program.

PS47
Acute and Long-Term Swallow Dysfunction in Head and Neck Cancer Patients: Evaluation and Management

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Dysphagia is one of the most common acute and late effects of head and neck cancer therapy. This may be due to tissue damage from cancer, extirpation of neuromuscular structures critical for swallow function during primary surgery or the effects of radiation therapy. During this invited session, the pathophysiology of swallow dysfunction and methods for swallow assessment will be reviewed. The session will also provide an evidence-based algorithm for interdisciplinary management of dysphagia from a speech pathology perspective, and review proactive and reactive therapy models.

PS48
Every Cancer Survivor Must Have a Written Cancer Survivorship Care Plan

Soto-Perez-de-Celis E., D. Mayer, B. Koczwara, M. Jefford, F. Gibson, W. Dale

While survivorship care plans are endorsed by a number of organisations, and are included within some clinical standards, evidence supporting their use is limited and implementation is challenging. An international panel of experts will examine these challenges in a MASCC-first, Oxford-style debate, weighing the challenges and opportunities of survivorship care plan delivery.

PS49
Best Practices: Optimizing Supportive Care Interventions in Electronic Medical Records

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Supportive care interventions to relieve distressing symptoms rely on accurately and comprehensively capturing and conveying patients' symptom severity to clinicians, who ideally craft assessment and treatment plans based on general consensus guidelines (e.g. NCCN, ESMO, MASCC). Health care organizations (HCOs) need to support systematic collection of Patient Reported Outcomes (PROs) from multiple consumer platforms (smart phones, tablets or desktop computers) to obtain real-time insight into patient distress. Some HCOs enable automated delivery of PROs through Electronic Health Records (EHRs) (sometimes called Electronic Medical Records), graphically displaying trends of symptom status. Automatic alerts detecting patients reporting severe symptoms can trigger nurse interventions, referrals to appropriate specialists (e.g. social workers), and severity-specific symptom management pathways. The use of alerts enhances treatment tolerance and decreases unplanned visits and hospitalizations. Advanced systems use Clinical Decision Support (CDS) that generates patient-specific recommendations for further assessment and treatment at the point of care, using PRO symptom data and selected data (labs, medication doses, age) available from the EHR. For quality improvement, analysis of data from EHRs can compare outcomes, e.g. differences attributed to varying from CDS-recommended treatments. On a limited scale, Natural Language Processing (NLP) has been recently

used with narrative reports to identify patients experiencing symptoms when a systematic PRO assessment is not possible or underestimates symptom severity. EHRs paired with PROs, CDS and NLP therefore offer the potential for a revolution in value: improved patient quality of life and decreased cost from avoidable clinician visits and hospitalizations.

PS50

Criteria for Referral: Standardizing Palliative Care Referral with Automatic Triggers

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Multiple randomized controlled trials and meta-analyses found that timely referral of patients with advanced cancer to outpatient palliative care can improve health outcomes. However, palliative care referral currently occurs in a haphazard manner, contributing to inconsistent and delayed access to palliative care. The supportive care needs of patients are often under-recognized, under-diagnosed, and under-managed. There is also significant variation among oncologists in their attitudes and beliefs toward a palliative care referral. Automatic referrals have been proposed to standardize timely palliative care access. There are four major prerequisites to automatic referrals: (1) establishment of consensus referral criteria between the oncology and palliative care teams, (2) systematic screening of these criteria in the oncology clinic, (3) process for triggering referral when patients meet criteria, and (4) adequate resources in the outpatient palliative care clinic to see patients in a timely fashion. Electronic health records have the potential to streamline the first, second and third steps. Specifically, data gathered from electronic health records can be used to identify thresholds for referral, patients can be prompted to complete patient-reported outcomes electronically, and best practice alerts may be used to remind the oncology team once a patient meets criteria for referral. In this presentation, we will share our experience with implementation of automatic referrals at our cancer center and discuss the challenges and opportunities.

PS51

PHASE 2 TRIAL OF SYMPTOM SCREENING WITH TARGETED EARLY PALLIATIVE CARE (STEP) FOR PATIENTS WITH ADVANCED CANCER

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Introduction
Routine early palliative care (EPC) improves quality of life for patients with advanced cancer, but may not be scalable. We conducted a phase 2 trial of STEP to plan for a larger trial.
Methods
Participants with advanced cancer were recruited from medical oncology clinics. Symptoms were screened at each visit using the Edmonton Symptom Assessment System-revised (ESAS-r); moderate/severe scores (≥4/10: pain, nausea, dyspnea, depression, anxiety; ≥7/10: fatigue, appetite, drowsiness, well-being) triggered an e-mail to a nurse, who called the patient, offering an EPC consultation. Participants completed measures at baseline, 2, 4 and 6 months (primary endpoint). Trial feasibility criteria were: i) ≥100 patients accrued in 12 months; ii) ≥70% complete screening for ≥70% of visits; iii) ≥60% of those for whom a call is triggered meet at least once with EPC; iv) ≥60% complete measures.
Results
From 11/2016-1/2018, 116 patients were enrolled; 89/116 (77%) completed screening for ≥70% of visits. Of those receiving a call, 62% (43/69) received EPC; 3 further patients were referred by their oncologist. Measure completion was 79%/2 months, 61%/4 months, 57%/6 months. By 6 months, patients who received a call and accepted EPC had better symptom control than those deferring EPC (ESAS-r-CS: -0.07±16.9 vs 11.8±13.7, p=0.02) and less deterioration in mood (change in PHQ-9: 0.4 ±3.4 vs 2.6±2.3, p=0.003); there was no difference in quality of life or satisfaction with care.
Conclusions
STEP is feasible in patients with advanced cancer. More than half of patients have moderate/severe symptoms, and acceptance of the triggered EPC involvement should be encouraged.

PS52

Early and Systematic Integration of Palliative Care in Multidisciplinary Oncology Care: A Randomized Controlled Trial

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Introduction
The aim is to examine whether early and systematic integration of palliative care (PC) alongside to standard psychosocial oncological care provides added benefit.
Methods
We randomly assigned advanced cancer patients with a life expectancy of one year to either early and systematic integration of PC into oncological care (intervention) or standard oncological care alone (control). QOL was assessed at baseline, 12 and 18 weeks with the European Organization for Research and Treatment of Cancer Quality of Life Questionnaire (EORTC QLQ C30) and McGill Quality of Life (MQOL). Frequency of contact with health care professionals between baseline and 18 weeks was collected from the medical records.
Results
From April 29, 2013 to February 29, 2016, we enrolled 186 patients. At 12 weeks, QOL was significantly higher in the intervention group (mean score: QOL scale of the EORTC QLQ C30 (primary outcome), Intervention: 62.0 [95% CI 57.02-66-95] vs. Control: 54.4 [49.23-59.56], P = 0.03; mean score: MQOL Single Item, Intervention: 7.1 [6.59-7.50] vs Control: 5.9 [5.50-6.39], P < 0.001). Similar effects were found at 18 weeks (EORTC QLQC30, Intervention: 68.2 [58.78-69.59] vs Control: 54.7 [49.09-60.32], P= 0.01; MQOL, Intervention: 7.0 [6.45-7.55] vs. Control: 5.5 [4.96-6.07], P < 0.001). The number of consultations with psychologists was significantly higher in the intervention group (Control: median =0, IQR 0-0, Intervention: median=0, IQR 0-1.75, P= 0.02).
Conclusions
Early and systematic integration of PC in oncological care is more beneficial for cancer patients than PC consultations offered on demand, even when psychosocial support has already been offered.

PS53

Sexual Issues in Partners of Cancer Patients

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Introduction

Research has increasingly recognised the profound impact that cancer can have upon embodied subjectivity and gender identity. However, there has been little acknowledgment of the experiences of partners, and marginalisation of the experiences of lesbian, gay, bisexual and transgender (LGTBT) cancer survivors.

Methods

This paper will present the results of a program of Australian mixed method research examining sexual embodiment and subjectivity after cancer across a range of cancer types and stages in partners of people with cancer, across heterosexual and LGBT relationships. Surveys and interviews were conducted with 47 partners of gay, bisexual and lesbian cancer survivors, and 53 heterosexual partners, who took part in a study of sexuality across tumour types.

Results

Across gender and sexual identities, participants took up the following post-cancer subject positions: 'Dys-embodied sexual subjectivity' - characterised by bodily betrayal, sexual loss, lack of acceptance, challenges to gender identity; 'Re-embodied sexual subjectivity' – characterised by greater sexual confidence, acceptance, the exploration of non-coital sexual practices, and increased relational closeness; and 'Oscillating sexual subjectivity' – involving a shift between states of sexual dys-embodiment and sexual re-embodiment. Gay and bisexual men were more likely than lesbian, bisexual and heterosexual women to report disembodied sexual subjectivity, associated with reports of psychological distress and disruption to intimate relationships. However, sexual renegotiation was higher in LGB relationships. Dissatisfaction with communication with health care professionals was more common in gay/bisexual and lesbian participants.

Conclusions

The findings point to the importance of an intersectional framework in understanding sexual subjectivity of partners and cancer survivors.

PS54

DISCUSSING SEXUALITY IN CANCER CARE: WHAT INFORMATION DO PATIENTS NEED?

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Introduction

Cancer patients and survivors needs regarding discussing sexuality are frequently unmet, with many not receiving adequate information. To optimize information about sexuality and cancer, patients' perspective is needed. The goals of this study was to investigate information needs regarding sexuality-related issues of Dutch cancer patients.

Methods

The Dutch Federation of Cancer Patient Organizations (NFK) developed and conducted a nationwide 28-item online survey, regarding influence of cancer on sexuality and information needs. The survey was distributed among cancer patients and survivors in March 2017, through the 19 cancer patient organizations that are member of NFK and social media.

Results

In total, 2657 (ex)cancer patients participated, with a mean age of 59.7. Half were male(45.2%). The majority(66.7%) stated their sexuality had changed negatively due to cancer. Of the respondents, 65% were in need of information about sexuality. Half of them (46%) did not find useful information. Most information was considered as too general. When focusing on content, patients were most in need of practical tips regarding sexual problems(60%) and experiences from others(54%). A small part was in need of a referral to a professional(16%). To make information more widely available, 57% suggested that it would be of help if care providers give information systematically, not only if asked by the patient.

Conclusions

This study shows that the respondents are mostly in need of practical information specific to their disease. Cancer patient and survivors prefer to get standard information by their care providers. Further research will focus on development of suitable information regarding sexuality-related issues.

PS55

PREDICTORS OF WOMEN'S SELF-EFFICACY TO COMMUNICATE WITH THEIR PARTNER ABOUT SEX AND INTIMACY AFTER CANCER TREATMENT

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Introduction

Women surviving cancer value their ability to maintain sexual activity and intimacy despite physical and psychosocial impacts of cancer treatment. Studies highlight the importance of partner communication within women's sexual wellbeing interventions. The Self-Efficacy to Communicate about Sex and Intimacy (SECSI) scale is a newly-developed valid and reliable measure assessing women's confidence to communicate with their partner about sex and intimacy following cancer treatment. The purpose of this study was to examine predictors of SECSI scores in women treated for cancer.

Methods

Stepwise block regression was used to predict SECSI scores using secondary data analysis of survey data from 226 adult women treated for cancer. Independent variables in blocks included: 1) Dyadic Adjustment Scale and Dyadic Sexual Communication Scale, 2) Female Sexual Function Index and Female Sexual Distress Scale, 3) Generalized Anxiety Disorder and Patient Health Questionnaire, 4) cancer-related characteristics, 5) Functional Assessment of Cancer Therapy–General subscales, and 6) sociodemographic characteristics.

Results

The model explained 57.8% of variance in SECSI scores. Two blocks contributed significant incremental variance: Block 1, adjR2= 0.55, $p<.001$, and Block 5, adjR2=0.59, $p<.05$. Individual variables of satisfaction with sexual communication ($\beta=.59$, $p<.001$), and social/family wellbeing ($\beta=.34$, $p<.001$) predicted SECSI scores.

Conclusions

Measures of satisfaction with sexual communication and social/family wellbeing were significantly associated, but not redundant with the conceptually unique newly-developed SECSI measure. Future research will determine clinically meaningfully SECSI scale cut point scores which may be used to guide interventions for intimate partner communication following cancer treatment.

PS56

What Do We Mean by Palliative Care?

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Definition of Palliative Care: Where Are We?
Mellar P Davis MD FCCP FAAHPM

Definitions transmit meaning and constitute what and how we palliate[1]. Derek Doyle quipped, "No sooner is a new (palliative) service started anywhere…,people sit down and write a new definition."[2]Over the half century palliative care has existed, descriptions have been: "care of the dying", "terminal care", "care for those with active progressive far-advanced illnesses", or "life-threatening illnesses", or "serious illnesses" or "applied early even in those receiving curative intent therapy". Such descriptions render studies not generalizable and without external validity for different patient populations. Rarely do RCT define palliative care. Palliative care does not define a population but reflects a function, a philosophy and an organization. Palliative care is described as "the study and care of", as "expanding on traditional medical care", as "patient-centered care " and "intrinsic to all specialties" as a philosophy of care. There is not a clear timeframe. Descriptors of" terminal"," far-advanced"," serious"," progressive and active" are in the eye of the beholder. Most describe an important palliative outcome as "quality of life" but few if any define what is meant. As we move upstream in multiple non-cancer illnesses, my fear is the loss of boundaries. When is it appropriate to start integrating palliative care without being redundant, increasing burdens and costs to families and medical systems? How will we train fellows who will need working knowledge in multiple subspecialties and what outcomes should we measure to show our worth?

1. *Palliat Med.* 2008;22(3):222-232.
2. *Palliat Med.* 2003;17(1):9-10.

PS57
How Should Palliative Care Services Integrate into Oncology Services?

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Multiple randomized controlled trials have underscored the importance of timely referral to palliative care for patients with advanced cancer. Outpatient palliative care can facilitate timely referral and is increasingly available in many cancer centers. The key question is which model of outpatient palliative care is optimal. There are currently many variations for how palliative care is delivered in the outpatient setting, including (1) Interdisciplinary Specialist Palliative Care in Stand-Alone Clinics, (2) Physician-Only Specialist Palliative Care in Stand-Alone Clinics, (3) Nurse-Led Specialist Palliative Care in Stand-Alone Clinics, (4) Nurse-Led Specialist Palliative Care Telephone-Based Interventions, (5) Embedded Specialist Palliative Care with Variable Team Makeup, and (6) Advanced Practice Providers-Based Enhanced Primary Palliative Care. It is important to make a clear distinction among these delivery models of outpatient palliative care because they have different structures, processes, and outcomes, along with unique strengths and limitations. In this session, we will provide a critical appraisal of the literature on studies investigating these models. At this time, interdisciplinary specialist palliative care in stand-alone clinics remains the gold standard for ambulatory palliative care because this approach has the greatest impact on multiple patient and caregiver outcomes. Although the other models may require fewer resources, they may not be able to provide the same level of comprehensive palliative care as an interdisciplinary team. Further research is needed to evaluate the optimal model of palliative care delivery in different settings.

PS58
THE ENHANCED SUPPORTIVE CARE PROGRAMME: IMPROVING ACCESS TO SUPPORTIVE AND PALLIATIVE CARE IN THE CANCER CENTRE

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Introduction
'Enhanced supportive care' (ESC) is a new NHS England initiative that promotes better access to supportive and palliative care services in cancer centres. Implementation of ESC aims to achieve: 1. Improved patient experience / reduced symptom burden. 2. Reduction in overall healthcare costs (primarily through reduction in emergency hospital admissions).
Methods
14 cancer centres across England signed up to a 3-yr ESC pilot. All adopted the 6 ESC principles: 1. earlier involvement of supportive (and palliative) care services – all patients offered referral within 6 weeks of diagnosis of incurable cancer; 2. Supportive care teams that work together; 3. A positive approach (with rebranding from 'palliative care' to 'supportive care' or 'symptom team'); 4. Evidence-based practice in supportive / palliative care; 5. Technology in communication 6. Best practice in chemotherapy care, including management of treatment-related problems.
Results
Analysis of data from ESC providers indicated that between 2016-2018, 500 unplanned admissions were avoided. This equated to savings of £1,967,000 ($2.5m). Outcome data showed positive changes (reduction) in IPOS scores (i.e. improved symptoms) following ESC assessment, across a range of symptoms. A retrospective single-system design study demonstrated improvement in several patient and system outcomes, many of which were statistically significant - prolonged survival, reduction in chemotherapy deferral rates, improved physical symptoms, less psychological distress and reduced 30-day chemotherapy mortality.
Conclusions
Data from this national ESC programme aligns with growing evidence that good supportive care, provided early to patients with incurable cancer, can improve quality of life, reduce symptom burden and benefit the health economy.

PS59
THE EFFECTIVENESS AND COST-EFFECTIVENESS OF HOSPITAL PALLIATIVE CARE FOR ADULTS WITH ADVANCED DISEASE: A SYSTEMATIC REVIEW

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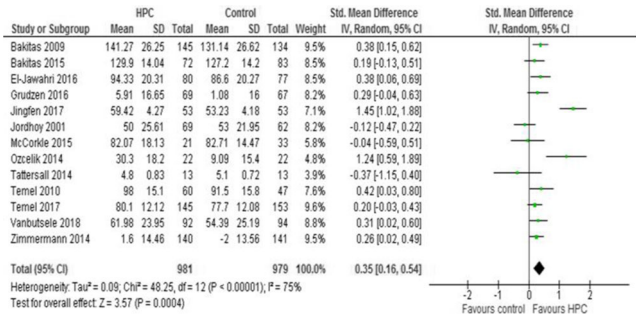
Introduction
Most cancer deaths still take place in hospital. This systematic review aimed to assess the effectiveness and cost-effectiveness of Hospital Palliative Care (HPC).
Methods
Population: Adults with advanced disease; *Intervention:* HPC; *Comparator:* Usual care; *Outcome measures:* Included Health-related quality of life (HRQoL) and symptom burden; *Study Design*: RCTs; *Data sources*: Included six databases to Aug 2018.
Results
38 RCTs, 6571 patients included (cancer-13 RCTs, 1960 patients). In cancer: HPC improved HRQol (13 studies, SMD 0.35, 95% CI 0.16 to 0.54, I2=75%) (figure 1).

Figure 1:



The most effective models were: *1) multiple setting* improved HRQoL (7 studies, SMD 0.22, 95% CI 0.10 to 0.33, I2 = 15%), symptom burden (5 studies, SMD -0.16, 95% CI -0.29 to -0.03, I2 = 0%) and home deaths (3 studies, OR 1.46, 95% CI 1.00 to 2.13, I2 = 0%) *2) Early HPC* improved HRQoL (8 studies, SMD 0.26, 95% CI 0.16 to 0.37, I2 = 0%), symptom burden (7 studies, SMD -0.21, 95% CI -0.33 to -0.09, I2 = 0%) and home deaths (4 studies, OR 1.43, 95% CI 1.02 to 2.02, I2 = 0%) *3) multidisciplinary team (MDT)* improved HRQoL (9 studies, SMD 0.26, 95% CI 0.10 to 0.42, I2 = 51%), symptom burden (5 studies, SMD -0.25, 95% CI -0.39 to -0.11, I2 = 0%) and home deaths (3 studies, OR 1.58, 95% CI 1.02 to 2.43, I2 = 0%). HPC did not cost more or cause harm.

Conclusions

HPC, particularly models that are provided early, MDT focused, and traverse multiple settings are most effective.

PS60

Are There Strategies to Improve Antiemetic Access?

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To provide the best antiemetic treatment to each patient regardless of availability

Background and Purpose

Worldwide, adherence to guidelines and accessibility to medicines varies markedly among countries, institutions, physicians and patients.

To provide the best antiemetics to every patient, regardless of individual situations, we must recognize the present status including differences in policy, drug supplies and physician knowledge and preferences all over the world.

Methods

We aimed to investigate the present situation of CINV globally, to the extent possible. We initially sought information from regulatory agencies, several world-wide trading pharmaceutical companies. The next step in our research was reviewing published articles related to drug access and adherence to guideline recommended medicines.

Results and Discussions

The information obtained from regulatory agencies and pharmaceutical companies was very limited due to their rules and territorial restrictions. On the other hand, several reports were useful for our research. Reviewing these publications, we were able to draw a conclusion. While providing drugs is both time- and money-consuming, information such as updated guidelines is not always readily available. Once such information is obtained, awareness of what must be done rises. Until oncologists in developing countries have caught up with practices in the industrialized world, they will seek to review past evidence when resources are limited or they might be encouraged to launch trials possibly contributing to the optimization of patient care in their own countries given the resources available. My talk will present reported examples of such efforts together with considerations on how to move forward in these endeavors.

PS61

Olanzapine, Do the Guidelines Have It Right?

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There is no longer any dispute about whether olanzapine is an effective antiemetic hence it is included in the major antiemetic guidelines. Unlike 5-HT3 RA, NK1 RA and corticosteroids, sedation is very common with the recommended olanzapine dose (10 mg daily). Although grade 3 sedation is uncommon, lesser degrees of sedation can be important to patients as it can impair function for several days.

This talk will review the evidence for efficacy, the prevalence of sedation and evidence about dose-response.

It is important to remember that the goal of antiemetic therapy is NOT to minimize nausea/vomiting but to maximize quality of life.

PS62

ALTERATIONS IN PATTERNS OF GENE EXPRESSION AND PERTURBED PATHWAYS IN THE GUT-BRAIN AXIS ARE ASSOCIATED WITH CHEMOTHERAPY-INDUCED NAUSEA

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Introduction

Despite current advances in antiemetic treatments, ~50% of oncology patients experience chemotherapy-induced nausea (CIN). The aim of this study was to evaluate for differentially expressed genes (DEGs) and perturbed pathways associated with the gut-brain axis (GBA) across two independent samples of oncology patients who did and did not experience CIN.

Methods

Oncology patients (n=709) completed study questionnaires in the week prior to their next cycle of chemotherapy (CTX). CIN occurrence was assessed using the Memorial Symptom Assessment Scale. Gene expression analyses, that controlled for significant demographic and clinical characteristics, were performed in two independent samples using RNA-sequencing (sample 1, n=357) and microarray (sample 2, n=352) methodologies. Fisher's combined probability method was used to determine genes that were significantly differentially expressed and pathways that were significantly perturbed between the two nausea groups across both samples.

Results

CIN was reported by 63.6% of the patients in sample 1 and by 48.9% of the patients in sample 2. Across the two samples, 703 genes were differentially expressed and 37 pathways were found to be perturbed between the two CIN groups. We identified nine perturbed pathways that are involved in mechanisms associated with alterations in the GBA (i.e., mucosal inflammation, disruption of gut microbiome).

Conclusions

Persistent CIN remains a significant clinical problem. Our study is the first to identify novel GBA-related pathways associated with the occurrence of CIN. Our findings warrant confirmation and suggest directions for future clinical studies to decrease CIN occurrence.

PS63

US PHYSICIAN CONCORDANCE WITH UPDATE TO GUIDELINES CLASSIFYING CARBOPLATIN AUC ≥ 4 AS HIGHLY EMETOGENIC CHEMOTHERAPY (HEC)

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Introduction
MASCC, NCCN and ASCO antiemetic guidelines recently classified carboplatin AUC ≥4 as HEC, recommending upfront triple prophylaxis (NK1 receptor antagonist (RA) + 5HT3 RA + dexamethasone). US physician concordance, and consequences for avoidable post-chemotherapy acute care, merit study.
Methods
In IBM Explorys electronic health records, we identified carboplatin courses (≥14-day cycles as proxy for AUC ≥4) and ≥7-day cycles of other HEC and non-HEC from October 2012 through August 2018. Guideline concordance (triple prophylaxis at HEC initiation) was evaluated. We assessed 30-day post-chemotherapy acute care (inpatient or emergency department) involving nausea or vomiting (NV) or eight other toxicities deemed avoidable by US Centers for Medicare & Medicaid's oncology outcome measure OP-35.
Results
Among 11,554 carboplatin courses identified, upfront triple prophylaxis grew from 14% in 2013 to 16% in mid-2017. Rates then rose to 15%-26% following the guideline changes. In 31% of carboplatin courses we noted acute care, of which 75% involved ≥1 of the OP-35 toxicities. NV (+/- acute care) occurred in 24% of courses; 27% of total OP-35 acute care involved NV. Rates for NV, and acute care after carboplatin, matched HEC chemotherapy, and exceeded non-HEC chemotherapy.
Conclusions
Upfront triple antiemetic prophylaxis grew marginally for carboplatin AUC ≥ 4 since re-classification as HEC, perhaps due to low awareness of the guideline changes. NV and related 30-day acute care event rates for carboplatin matched those for other HEC, validating the HEC classification. More triple prophylaxis is needed to reduce NV and NV-related avoidable acute care with carboplatin AUC ≥ 4.

PS64
Management of "Terminal Agitation": Evidence Versus Pragmatism

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There is controversy about whether terminal agitation as a diagnosis exists. There are different nomenclatures and definitions about confusion and delirium as death approaches. There is varied evidence about the diagnosis and possible interventions for delirium. There is heated dispute about indications for pharmacological and non-pharmacological interventions. There are widely differing views about safety and efficacy of pharmacological therapies, many with historical use as justification. A review of the literature and gaps in knowledge will be presented with a pragmatic plan about how to manage delirium and agitation as the end of life actively approaches.

PS65
How did the introduction of Medical Assistance in Dying impacted palliative care in Canada?

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Introduction
Medical Assistance in Dying (MAID) describes interventions that can be provided by medical practitioners to cause death. In June 2016, MAID became legal in Canada for patients who meet pre-defined criteria. The introduction of MAID has sparked an intense debate about its impact on palliative care (PC). The study aims to qualitatively explore the impact of the introduction of MAID on PC professionals and practice.
Methods
We interviewed PC physicians and nurses who practiced for six months, or more, before and after MAID legalization in MAID accessible PC settings. Purposeful sampling was used to recruit participants with diverse personal views and experiences with MAID. Semi-structured interviews were conducted. Interviews were transcribed and analyzed using a modified grounded-theory approach.
Results
Conceptual saturation achieved after interviewing 21 PC professionals –11 MDs and 10 nurses. Different themes emerged from PC professionals' experience with MIAD. Participants felt that MAID had created many opportunities including increasing patient's choices, encouraging open dialogue about death, higher satisfaction, improving access to PC, building strong trust in PC providers. Participants identified many themes of challenges including lack of laws clarity, blocking PC and symptoms management, lack of skilled communication, greater demands of patients and families, added burden on PC professionals. All participants cited a need for additional support resources. Many expressed reluctance to engage in individual support sessions.
Conclusions
The practice of PC has been affected as a result of the legalization of MAID. A better understanding of PC professionals' distress and more resources are needed to support PC providers.

PS66
Integrating Medical Cannabis within a Quaternary Oncology Center: The Cannabis Pilot Project at the McGill University Health Centre

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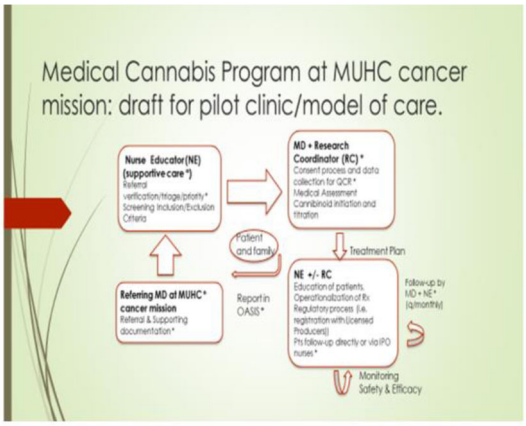
Introduction
Access to medical cannabis is becoming a common request by patients and caregivers in oncology and palliative care worldwide, however health care providers (HCPs) still face critical challenges to integrate it as a complementary treatment for symptom control.
Methods
The Cannabis Pilot Project (CPP) aimed to implement a medical cannabis clinicat the MUHC and evaluate its feasibility. Referral to the CPP was reserved for patients who were already receiving supportive care but without adequate symptom relief. An interdisciplinary team was established to systematically assess patients, prescribe and monitor cannabis treatments (Figure 1). The development and evaluation of the CPP was based on the Guiding Principles of Models of Care (MoC, *Agency for Clinical Innovation*2013).

Figure 1: Model of Care for Cannabis Pilot Project at the McGill University Health Centre



QCR: Quebec Cannabis Registry; IPO: Infirmière pivot/Pivot nurse

Results

Sixty-fivepatients have been enrolled (mean age 61 years; 52% female) in the CPP over seven months. Gastrointestinal cancer (29%) and pain (68%), were respectively the most frequent diagnosis and symptom. Cannabis products rich in Cannabidiol (53%) and oral administration (i.e. cannabis oil) (88%) were most frequently prescribed. 30.8% of patients had only a baseline visit, 27.7% 2 visits, 24.6% 3 visits, 7.7% 4 visits, 4.6% 5 visits, and 4.6% 6 visits. Up to 4 patients were seen per half-day clinic. Resources required to support direct patient care included: 3 hours (nurse), 2.7 hours (research coordinator), 2.2 hours (palliative care physician) per clinic. MoC evaluation is reported in Table 1.

Table 1: Evaluation of the cannabis care delivery model

This care delivery model….

Is patient centric	Yes (complementary cannabis treatment takes into account patient needs, values and choices; knowledge and information are freely shared between and among HCPs, patients and caregivers)
Has localized flexibility and considers equity of access	Not optimal (while access to the pilot project was open to all cancer patients, the available resources limit the number of patients who could benefit from this service)
Supports integrated care	To a large degree (cannabis treatment is offered within the same setting as other supportive care treatment options, however it is not supported by all palliative care HCPs)
Supports efficient utilization of resources	Not optimal for nursing (admin tasks done by nursing during the pilot phase could be done by administrative personnel)
Supports safe, quality care for patients	Yes (based on the scientific evidence derived from the preliminary research on the use of cannabis for medical purposes)
Has a robust and standardized set of outcome measures and evaluation processes	To a certain degree (ESAS-r, BPI were part of the Quebec Cannabis Registry requirements)
Is innovative, considers new ways of organizing and delivering care and sets the vison for services in the future	Yes- the focus of this clinic-based service was on an innovative treatment rather than a more general perspective in supportive/palliative care; the approach was structured to determine indication, contraindications and precautions for cannabis use along with "ad hoc" patient and family education.

ESAS-r: revised Edmonton Symptom Assessment System; BPI: Brief Pain inventory

Conclusions

To ensure sustainability of the CPP, a transition from a stand-alone clinic to a fully integrated consultation model is recommended.

PS67

Psychosocial Consequences of Skeletal Toxicity, Fractures, and BRONJ

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Consequences of fractures due to osteoporosis may be self evident but are often underappreciated. Many fractures are painful. Most limit function of the area involved, temporarily in some cases, life-long in others. Affected patients may need help with activities of daily living (eating, dressing, continence/toileting, transferring, and ambulation). Not so obvious are the psychosocial complications: anxiety (fear of falling, avoiding crowds), withdrawal from social activities (how long before the next pain medication), diminished self worth (feeling non-productive), anxiety and depression. These complications can lead to a cycle of deconditioning, solitude, and depression (and depression further increases the risk of fracture). It is important to recognize and try to deal with these issues when they are present.

Some cancer treatments are known to increase bone loss and fracture risk (e.g., aromatase inhibitors, androgen deprivation therapy). Cancer does not protect against osteoporosis; even if treatment for cancer doesn't cause bone loss, cancer patients may already be at high risk of fracture. These psychosocial consequences of osteoporosis must add to the burden of cancer treatment and cancer survival. The good news: effective measures/countermeasures are available to prevent bone loss and reduce fracture risk. By preventing fractures, functional and psychosocial consequences can be avoided.

PS68

Effect of Fractures on Overall Survival in Cancer Patients: The NHANES database

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[2]*Baylor University, Medicine- Epidemiology and Population Sciencs, Houston, USA*

Introduction

Background: Fractures are a significant cause of morbidity and mortality in older adults who are cancer-free. We evaluated the effect of fractures in older patients with cancer.

Methods

Methods: The National Health and Nutrition Study (NHANES) assessed the health and nutritional status of the U.S. The NHANES database is publicly available. All participants provided informed consents both before the interview and examination stages. A total of 62,160 individuals participated in NHANES during 1999-2010. Our analyses included older adults (65 years of age and older) with cancer diagnosis, with a follow-up till 2011.

Results

Results: In total, 1,718 older adults with cancer and with available follow up were included for final analysis. There were 303 participants with fractures (17.6%) and 581 deaths (33.8%) that occurred over a median follow up 4.3 years (range 0.1-12.8 years). Mean age was 74.8 ± 0.2, with females 49.6%. Cancer types included among solid tumors, colorectal 9.0%, breast cancer 17.4%, prostate cancer 17.7%, lung 3.0%. Among hematologic malignancies, lymphoma 1.6%, myeloma 7.2%, CLL 1.2%. Hip fractures were associated with advanced age, obesity, diabetes, stroke, functional impairment, and mortality. Spine fractures were associated with advanced age, cardiovascular disease, functional impairment and mortality. Univariate analysis for overall survival in older adults in NHANES revealed an increased risk with spine fractures H.R. = 1.89, (95% CI 1.11, 3.2, p=0.02) and hip fractures H.R. = 2.66, (95% CI 1.41, 5.02, p <0.01).

Conclusions

Conclusion: In older cancer patients, vertebral and hip fractures were associated with an increased risk for mortality.

PS69

PAIN FLARE-EFFECT PROPHYLAXIS WITH CORTICOSTEROIDS ON BONE RADIOTHERAPY TREATMENT: A SYSTEMATIC REVIEW

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Introduction
Radiotherapy applied to treat metastatic bone pain can produce a transitory pain worsening called flare effect (FE). Different studies have been published trying to demonstrate the efficacy of prophylaxis with corticoids in this issue. Purpose To summarize the evidence available in efficacy and toxicity using corticosteroids to prevent FE.
Methods
We performed a peer-review systematic search (PROSPERO PROTOCOL-CRD42018090351), in COCHRANE, MEDLINE and SCOPUS databases until September 2018. Inclusion criteria included clinical trials and cohort series carried out in adult patients with painful bone metastases undergoing to radiotherapy, assessing the use to corticoids to prevent the FE. We admitted studies wrote in English, French, Catalan, and Spanish. The risk of bias was assessed by the Cochrane Collaboration tool.
Results
Of 4393 studies there were 4 eligible clinical trials and 1 prospective cohort study. The overall incidence of FE was 28% (21% vs 37% in the prophylaxis vs non-prophylaxis group). 3 comparative studies described a relative risk reduction of 25, 67 and 72% respectively. Orally dexamethasone at 8mg-od from radiotherapy-day for 5 days was the most studied scheme and it was studied in the best designed studies. One study used methylprednisolone. No remarkable toxicity was reported.
Conclusions
There is strong evidence of using dexamethasone preventing FE for patients undergoing radiotherapy to treat bone metastases. The dose established would be 8mg-od of dexamethasone, from the radiotherapy day to 4 days after. New clinical trials should be performed to confirm these results as well to establish the most aproppiate dosage.

W01

Effective Patient-Provider Communication

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Effective communication between healthcare providers and patients can have positive objective and subjective outcomes including blood pressure control, adherence to medications and improved patient satisfaction among others. Despite these benefits, effective communication does not always occur due to barriers and challenges for the providers as well as patients.
With an emerging emphasis on communication, resources are available to develop strong communication skills. Some of these resources include national guidelines, continuing education and skills training.
Providers can develop their core communication skills and skills in specific conversations such as discussing goals of care, clinical trial participation, end-of-life care and costs of care. They can also learn to facilitate family and caregiver involvement in care and learn to overcome barriers to effective communication. Special populations may also require a unique skill set for the provider.
Ongoing research efforts will provide needed information on communication behaviors that lead to better outcomes and how to incorporate communication training into healthcare education. A recent study in cancer survivors found that patients with higher satisfaction had better mental health, general health and fewer office visits than patients with lower satisfaction. Information is emerging that in addition to the diagnosis, prognosis and treatment components of medical care, to help our patients achieve their best we also need to focus on caring and skilled communication.
This session will focus on what we know about effective communication in oncology and how this knowledge translates to patients and providers discussing immunotherapy as a treatment option.

eP001

A FOUR-DRUG COMBINATION OF OLANZAPINE, APREPITANT, PALONOSETRON, AND DEXAMETHASONE FOR NAUSEA AND VOMITING IN PATIENTS WITH BREAST CANCER RECEIVING ANTHRACYCLINE: A RETROSPECTIVE OBSERVATIONAL STUDY

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Introduction
This study aimed to compare the antiemetic efficacy and safety of a four-drug combination with those of a standard three-drug combination in Japanese patients with breast cancer treated with anthracycline.
Methods
We retrospectively analyzed data from Japanese patients with breast cancer, who had received their first cycle of anthracycline and were treated with aprepitant, palonosetron, and dexamethasone with or without olanzapine. This retrospective observational study was performed at Ehime University Hospital using the electronic medical records (approval number: 1804012). Multivariable and propensity score-adjusted analyses were performed to compare the onset of complete response (CR) failure between the groups.
Results
One-hundred and thirty patients were included in this study and the four- and three-drug group had 22 and 108 patients, respectively. The proportion of patients in the four-drug group who had CR in the overall, acute, and delayed phases was 63.6%, 68.2%, and 86.4%, respectively. This improvement was remarkably higher than that in the three-drug group (38.0%, 43.5%, and 52.8%, respectively). Similar to multivariable logistic regression analysis, propensity-adjusted logistic regression analysis revealed that the four-drug group was markedly associated with a decreased odds of CR failure in the overall, acute, and delayed phases (odds ratio (OR): 0.27, 95% confidence interval (CI): 0.10-0.73; OR: 0.28, 95% CI: 0.10-0.76; and OR: 0.15, 95% CI: 0.04-0.57, respectively). Additionally, treatment-related adverse events were well tolerated in both the groups.
Conclusions
These findings suggest that the antiemetic efficacy of the four-drug combination is superior to that of the standard three-drug combination.

eP002

NETUPITANT PLUS PALONOSETRON (NEPA) FOR THE PROPHYLAXIS OF CHEMOTHERAPY-INDUCED NAUSEA AND VOMITING (CINV) IN HIGHLY AND MODERATELY (AC-BASED CHEMOTHERAPY) EMETOGENIC CANCER TREATMENT: A COST-EFFECTIVE CHOICE

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Introduction
International antiemetic guidelines recommended the addition of NK_1-receptor antagonists to a combination of a serotonin ($5\text{-}HT_3$)-receptor antagonist (palonosetron) and dexamethasone (DEX) for the prophylaxis of nausea and vomiting in adults receiving highly emetogenic chemotherapy (HEC) or anthracycline and cyclophosphamide (AC)-based chemotherapy for cancer treatment. The analysis was conducted to integrate the effect of antiemetic treatments, such as complete response (CR; defined as the absence of emesis and rescue medication) with the cost of drugs.
Methods
The present evaluation was restricted to pivotal phase III randomized controlled trials (RCTs) of netupitant plus palonosetron (NEPA) versus (vs.) palonosetron for the prophylaxis of chemotherapy-induced nausea and vomiting (CINV) in highly and moderately emetogenic chemotherapy for cancer treatment. We calculated the pharmacological costs necessary to get the benefit in CR, for each trial. The costs of drugs are at the Pharmacy of our Hospital and are expressed in euros (€).
Results
Our analysis evaluated 2 RCTs, including 1720 patients (Table 1). Referring to both highly and moderately emetogenic chemotherapy, NEPA plus DEX was economic superior to palonosetron plus DEX, with 13 312 € and 7885 € gain in medical costs every 100 patients treated, respectively and with 17 810 € and 10 549 € gain in total costs (medical costs plus indirect costs) every 100 patients treated with NEPA plus DEX vs. palonosetron plus DEX, respectively (Table 1).

Table 1. Economic evaluation of pivotal phase III RCTs of NEPA plus DEX vs. palonosetron plus DEX for the prophylaxis of CINV in highly and moderately emetogenic chemotherapy for cancer treatment

Authors	Emetogenic risk	Comparative Regimens	Total N patients	Primary endpoint	CR	p-value	Pharmacological cost for each cycle (€)	Gain in CR*	Gain in monthly medical costs every 100 patients (€)*	Gain in monthly economic costs (medical costs + indirect costs) every 100 patients (€)*
Hesketh et al. Ann Oncol 25:1340-46	highly emetogenic	NEPA	135	CR	89.6	0.003	99.48	13.1	13 312**	17 810**
		palonosetron	136		76.5		45.15			
Aapro et al. Ann Oncol 25:1328-33	moderately emetogenic	NEPA	724	CR	74.3	0.001	99.48	7.7	7885***	10 549***
		palonosetron	725		66.6		45.15			

Legend: N= number, NEPA= netupitant 300 mg + palonosetron 0.5 mg; CR= complete response (no emesis, no rescue medication) during the overall (0–120 h) phase; *= NEPA versus (vs.) palonosetron; **= with a median of 2 cycles of cisplatin at 75 mg/m²; ***= with a median of 2 cycles of antracycline-cyclophosphamide chemotherapy

Conclusions
The combination of NEPA plus DEX is cost-effective for the prophylaxis of CINV in highly and moderately (AC-based chemotherapy) emetogenic cancer treatment.

eP003
CHEMOTHERAPY-INDUCED NAUSEA AND VOMITING: THE EXPERIENCE OF AN ONCOLOGY CENTER IN A LOW-INCOME COUNTRY

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Introduction
Chemotherapy-induced nausea and vomiting (CINV) are among the worst adverse effects in patients receiving chemotherapeutic agents. This study aimed to assess incidence and predictors of acute and delayed CINV at one oncology center in a low-income country.
Methods
An institution-based cross-sectional study was conducted from March 5 to May 3, 2018 at University of Gondar Comprehensive Specialized Hospital, Gondar, Ethiopia. The Multinational Association for Supportive Care in Cancer antiemesis tool was employed to assess acute and delayed CINV among cancer patients. Binary logistic regression and chi-square tests were used to assess predictors of acute and delayed CINV, respectively.
Results
A total of 151 patients were included in the final analysis. The mean age of patients was 41.64±13.68 years. Majority of them were female (68%). Acute nausea and vomiting were reported in 48.3% and 55.6% patients, respectively. Delayed nausea and vomiting were reported in 46.4% to 68.2% of individuals. Cancer type, the presence of comorbidity and residence were identified as factors independently associated with acute vomiting among patients with cancer. Delayed vomiting was associated with chemotherapy cycle (p =0.004) and the presence of comorbidity (p =0.007). Similarly, delayed nausea was associated with chemotherapy cycle (p =0.012).
Conclusions
Acute and delayed CINV were frequently reported among cancer patients at UOGCSH. Emetogenicity of chemotherapeutic agents was not associated with CINV. Rather, lung cancer, the presence of comorbidities, and cycles of chemotherapy predisposed patients for acute nausea and vomiting. Chemotherapy cycles and the presence of comorbidities were also associated with delayed CINV.

eP004
A NATIONWIDE SURVEY TO INVESTIGATE THE INCIDENCE OF CINV; A CARBOPLATIN-BASED ANALYSIS FROM THE PROSPECTIVE REGISTRY BY THE CINV STUDY GROUP OF JAPAN

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[2]*National Hospital Organization Kyusyu Cancer Center, Cancer Biostatistics Laboratory, Fukuoka, Japan*
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Introduction
We previously reported the results of a prospective registry nationwide survey of chemotherapy induced nausea and vomiting (CINV) of patients who were scheduled for moderately or highly emetogenic chemotherapy by the CINV study group of Japan. In the present study, we investigated the frequency of CINV and risk factors for CINV in registry patients who received carboplatin-based chemotherapy.
Methods
CINV data were collected from patient diaries for 7 days. Risk factors of CINV were analyzed by multivariate logistic regression models.
Results
In total, 400 patients scheduled for carboplatin-based chemotherapy were registered. Two hundred sixty-seven patients received a 2-drug antiemetic prophylaxis regimen (5-HT3RA and DEX), and 118 received a 3-drug antiemetic prophylaxis regimen (5-HT3RA, DEX,

and NK1RA). In these patients, the overall, acute, and delayed phases, the complete response, defined as no vomiting or retching episodes with no rescue medication, rates were 67.0%, 98.2%, and 67.5%, respectively. The rate of no nausea in the overall, acute, and delayed phases was 55.6%, 94.0%, and 56.1%, respectively. The rate of no vomiting in the overall, acute, and delayed phases was 81.3%, 99.0%, and 81.8%, respectively. Logistic regression analysis revealed younger age (P=0.0040), female sex (P=0.0135), 2 antiemetic regimen (P=0.0311), and lung cancer (P=0.0311) as a risk factor for non-CR in overall period.

Conclusions

Under medical practice conditions, adherence to the antiemetic guideline in patients who received CBDCA-based chemotherapy was quite high, but control of CINV is still inadequate. Further improvement in antiemetic treatment is needed to optimize care.

eP005

A NEW TARGET FOR FUTURE ANTIEMETICS: INHIBITION OF GLYCOGEN SYNTHASE KINASE 3 (GSK-3)

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Introduction

GSK-3 is a mutifunctional kinase involved in a variety of diseases. Its two isoforms GSK-3alpha and GSK-3beta are constitutively active and upon cellular stimuli turns into its catalytic inactivation by phosphorylation at ser 21 and 9. Our preliminary findings suggest a pivotal role for GSK-3 in vomiting. To investigate a role for GSK-3 in vomiting we examined: i) least shrew brainstem GSK-3α/β phosphorylation following exposure to diverse emetogens, and ii) whether GSK-3 inhibition exerts antiemetic efficacy.

Methods

Shrews were treated with fully effective emetic doses of diverse emetogens and brainstem GSK-3α/β phosphorylation at Ser21/9 was examined at several time-points post-treatment via Western blots. Other groups of shrews were pretreated with the GSK-3α/β inhibitor SB216763 (0.25 mg/kg, i.p.) to determine its antiemetic potential against different emetogens.

Results

Increases in brainstem GSK-3α/β phosphorylation at Ser21/9 were observed following administration of the serotonergic 5-HT3 (5-HT or 2-Me-5-HT, 5 mg/kg)-, tachykinin NK1 (GR73632, 5 mg/kg)-, dopamine D2 (apomorphine or quinpirole, 2 mg/kg)-, cholinergic M1 (McN-A343, 2 mg/kg)-receptors, the L-type calcium channel agonist (FPL 64176, 10 mg/kg) and proposed chemotherapeutic thapsigargin (0.5 mg/kg, 0.5 mg/kg). This increase was further confirmed through immunostaining brainstem sections of FPL64176-treated least shrews. Moreover, the GSK-3 inhibitor SB216763 exerted potent and broad-spectrum antiemetic efficacy against vomiting evoked by the above discussed emetogens.

Conclusions

Our findings demonstrate a pivotal role for GSK-3 in vomiting and implies targeting signals up and/or downstream of GSK-3 enzyme may provide powerful novel avenues for developing new and potent antiemetics.

eP006

EFFICACY AND SAFETY OF 1-DAY VERSUS 3-DAY DEXAMETHASONE FOR THE PROPHYLAXIS OF CHEMOTHERAPY-INDUCED NAUSEA AND VOMITING: A SYSTEMATIC REVIEW AND META-ANALYSIS OF RANDOMIZED CONTROLLED TRIALS

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Introduction

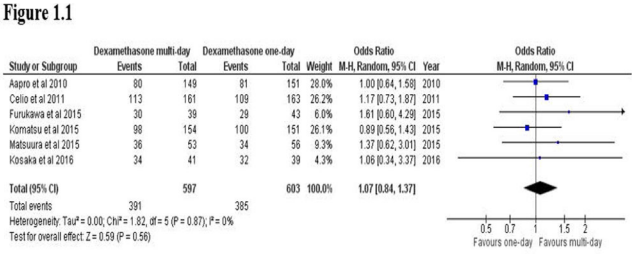
Dexamethasone is typically administered for multiple days after the start of chemotherapy to prevent delayed chemotherapy-induced nausea and vomiting (CINV). Frequent administration of corticosteroids has been associated with problematic side effects. Reducing the dose and frequency of corticosteroids administered during chemotherapy treatment may be beneficial in reducing the side effects experienced by patients, as long as it is possible to maintain its efficacy in the prophylaxis of CINV. The aim of this review/meta-analysis is to compare the safety and efficacy of multi-day versus 1-day regimen of dexamethasone

Methods

A literature search was carried out in Ovid MEDLINE, Embase and Cochrane Central Register of Controlled Trials. The primary endpoints were proportion of patients achieving complete response and complete control. Secondary endpoints were percentage of patients who experienced no nausea, no emesis, no use of rescue medication, no adverse events, no constipation, no headache, and no fatigue/insomnia.

Results

Seven randomized controlled trials were included, and a total of 659 and 649 patients were randomized to receive 1-day and 3-day dexamethasone, respectively. The two treatments were equivalent in 16 of 17 endpoints.



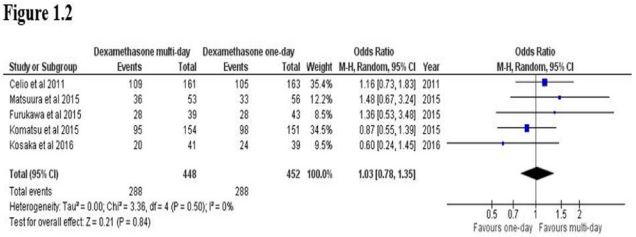


Figure 1. Efficacy of 1-day versus 3-day dexamethasone for the prophylaxis of chemotherapy-induced nausea and vomiting in the overall time phase. **1.1** Complete response **1.2** Complete control

Figure 2.1

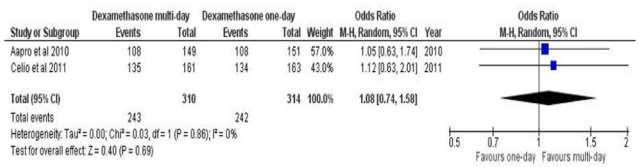


Figure 2.2

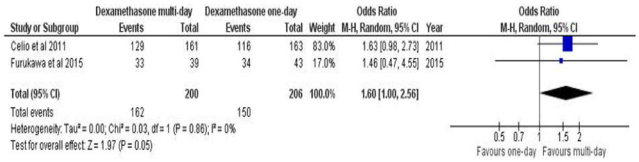


Figure 2. Efficacy of 1-day versus 3-day dexamethasone for the prophylaxis of chemotherapy-induced nausea and vomiting in the overall phase. **2.1** No emesis **2.2** No use of rescue medication

Figure 3.1

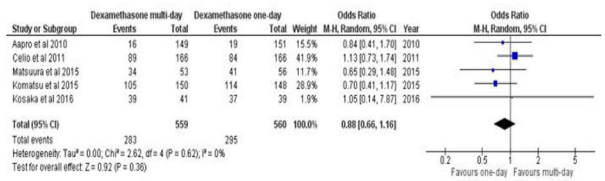


Figure 3.2

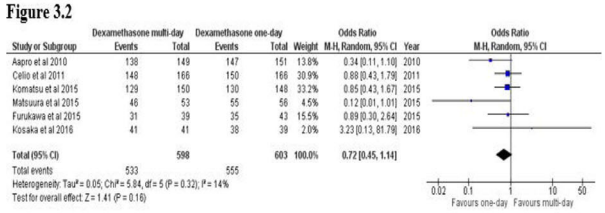


Figure 3.3

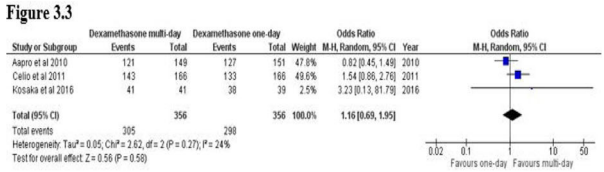


Figure 3.4

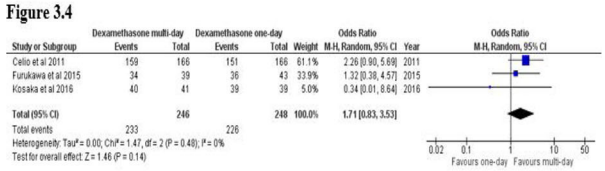


Figure 3. Safety of 1-day versus 3-day dexamethasone for the prophylaxis of chemotherapy-induced nausea and vomiting **3.1** No adverse events **3.2** No constipation **3.3** No headache **3.4** No fatigue/insomnia

Conclusions

Despite the paucity of data in this setting, we find that 1-day dexamethasone therapy provides a similar efficacy and safety profile as a 3-day treatment. The similarities in efficacy and safety suggest that 1-day can be administered as an alternative to 3-day, supporting the latest American Society of Clinical Oncology's antiemetic guidelines suggesting 1-day instead of 3-day for some patients receiving moderately-emetogenic chemotherapy.

eP007

PALONOSETRON FOR THE PROPHYLAXIS OF CHEMOTHERAPY-INDUCED NAUSEA AND VOMITING - AN UPDATED SYSTEMATIC REVIEW AND (CUMULATIVE) META-ANALYSIS

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Introduction

The aims were to update our 2014 review/meta-analysis comparing palonosetron to other 5-hydroxytryptamine receptor antagonists (5-HT_3RAs) with respect to efficacy and safety in chemotherapy-induced nausea and vomiting (CINV), and examine the effects of the latest randomized controlled trials (RCTs) to determine whether further RCTs in this subject are required.

Methods

Articles found from literature searches in Ovid MEDLINE, Embase and Cochrane Central Register of Controlled Trials were included if it reported on a primary endpoint – complete response, complete control, no emesis, no nausea or no rescue medications. A random-effects analysis model was used to generate odds ratio (OR), risk differences and accompanying 95% confidence intervals; cumulative OR assessed effect of RCTs over time. Publication bias was also assessed.

Results

Twenty-five RCTs were included: 4,145 patients were randomized to palonosetron and 4,911 to other 5-HT3RAs. Palonosetron was statistically superior in 10/19 endpoints but only clinically superior in 1 endpoint (emesis in the overall time phase). RCTs published within the last 4-5 years did not change the meta-conclusion; it confirmed and only refined point estimates of efficacy/safety. No publication bias exists, suggesting existing literature provides an accurate/representative assessment.

Conclusions

Palonosetron has been extensively studied for prevention of single-day emetogenic chemotherapy. With only 1 endpoint clinically favouring palonosetron, our results support the recent MASCC/ESMO, ASCO and NCCN guidelines in not recommending palonosetron as the preferred 5-HT3RA. Analyses assessing the effect of recent RCTs reveal that studies are not adding new meta-knowledge. CINV trial resources should be dedicated to other prophylactic treatments.

Figure 1.1

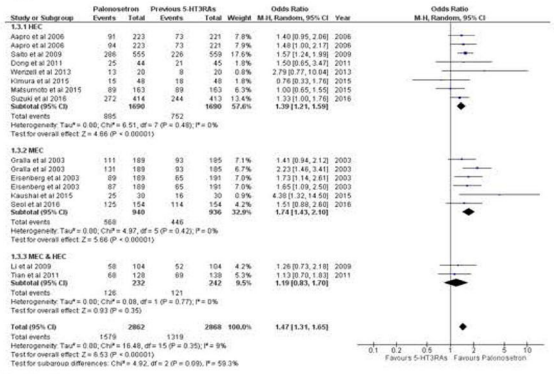


Figure 1.2

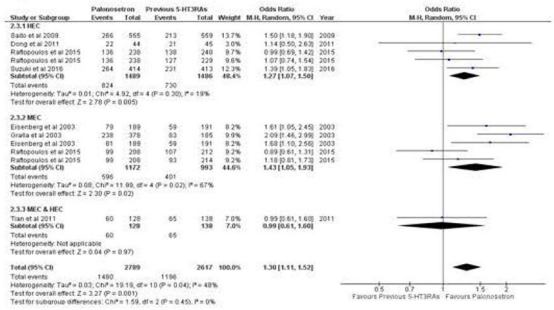


Figure 1.3

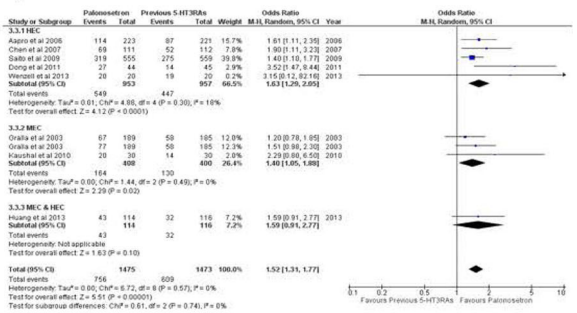


Figure 1.4

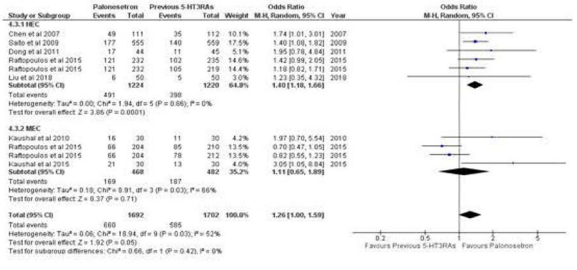


Figure 1.5

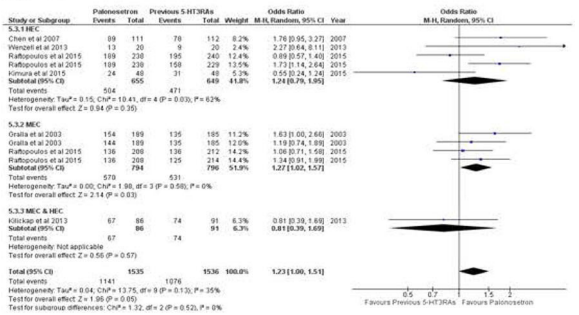


Fig. 1 Efficacy of palonosetron compared with other 5-HT$_3$RAs in the prophylaxis of chemotherapy-induced nausea and vomiting in the overall phase. **1.1** Complete response **1.2** Complete control **1.3** No emesis **1.4** No nausea **1.5** No use of rescue medication

Figure 2.1

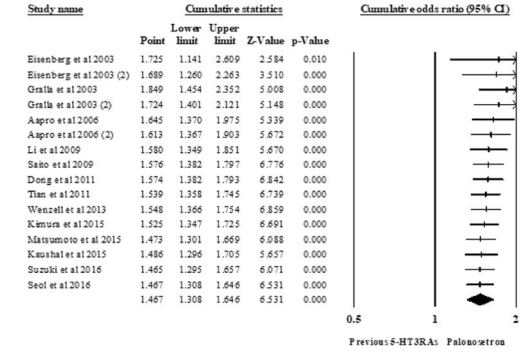


Figure 2.2

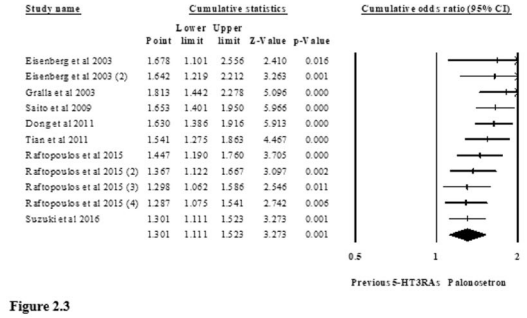
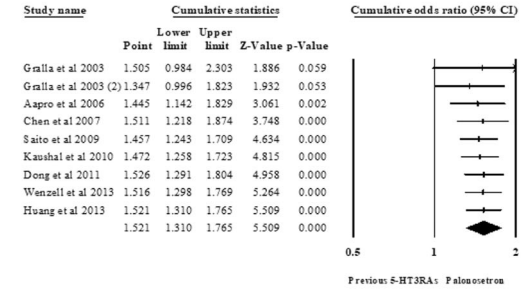


Figure 2.3



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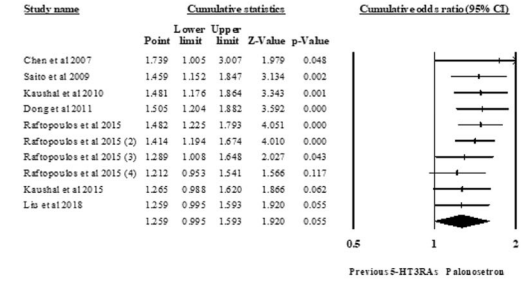

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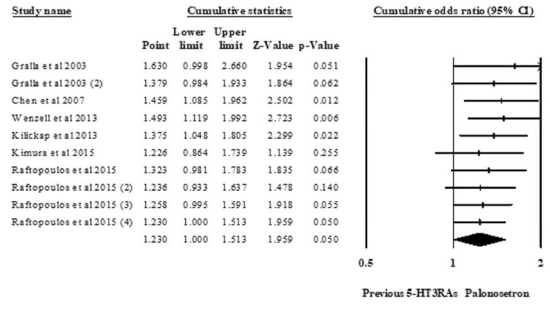

Fig. 2 The change of efficacy of palonosetron compared with other 5-HT$_3$RAs in the prophylaxis of chemotherapy-induced nausea and vomiting in the overall phase, over the course of publication-time. **2.1** Complete response **2.2** Complete control **2.3** No emesis **2.4** No nausea **2.5** No use of rescue medication

Figure 3.1

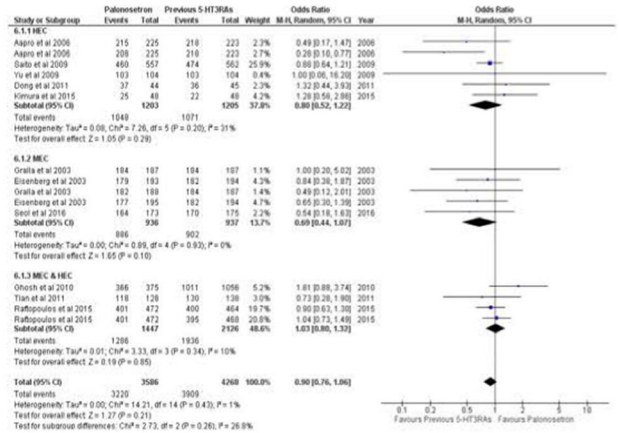

Figure 3.2

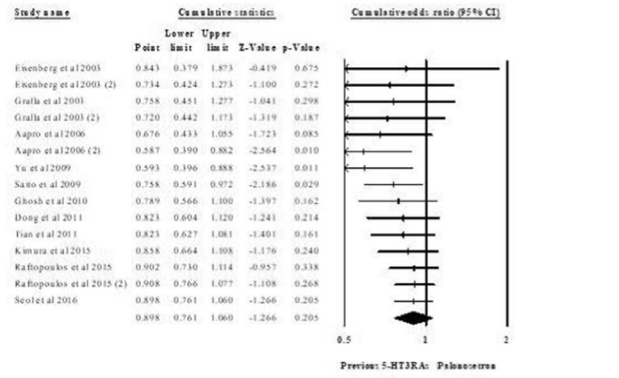

Figure 3.3

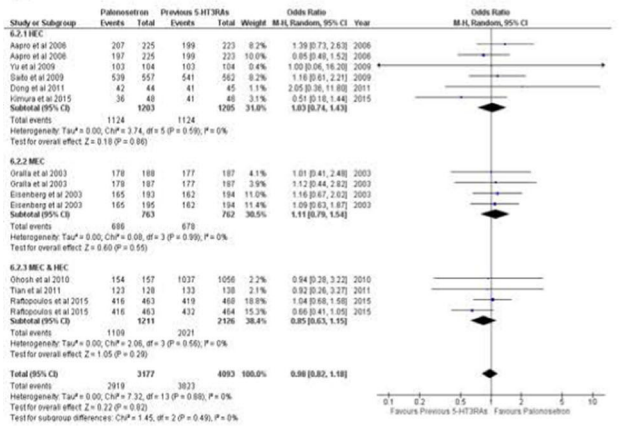

Figure 3.4

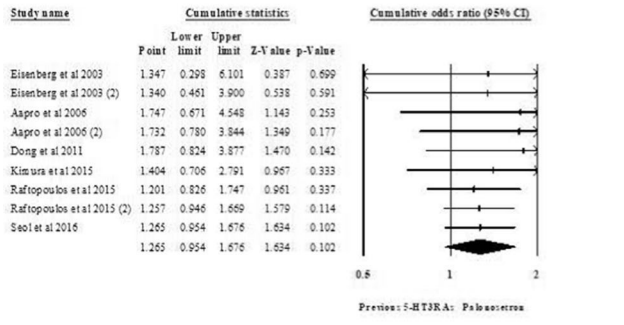

Fig 3. Safety of palonosetron compared with other 5-HT_3RAs in the prophylaxis of chemotherapy-induced nausea and vomiting. **3.1** Constipation **3.2** Constipation, analyzed over publication-time

ePOO8

IMPACT OF RADIATION-INDUCED NAUSEA AND VOMITING ON QUALITY OF LIFE

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Introduction

Radiotherapy-induced nausea and vomiting is a common side effect of radiotherapy. Although it is well-established that nausea and vomiting have a negative impact on quality of life (QOL), the relative influence of each of symptom is reported infrequently. This study aimed to compare the effects of nausea and vomiting on QOL in advanced cancer patients receiving palliative radiotherapy.

Methods

The Functional Living Index-Emesis (FLIE) is an 18-item QOL questionnaire developed in the chemotherapy-induced nausea and vomiting setting. Three prospective studies conducted at our center used the FLIE to evaluate the efficacy of various anti-emetic medications during and after palliative radiotherapy. FLIE data from these three studies were combined for the present analysis. Univariate and multivariate analyses were conducted to assess the relationships between nausea and vomiting, time of FLIE completion, and patient-reported QOL.

Results

136 patients were included in this study. Nausea and vomiting both decreased patients' QOL ($p<0.0001$ for both). Multivariate modeling showed that both symptoms significantly impaired patients' ability to enjoy meals ($p<0.0001$ for all). Nausea was also significantly associated with increased hardship for the patient ($p<0.01$), while vomiting imposed more difficulty on the patients' loved ones ($p<0.01$).

Table 1: Patient Demographics

Number of Patients	*N = 136*
Treatment group	
Palonosetron study	87 (64.0%)
Ondansetron study	30 (22.1%)
Aprepitant/Granisetron study	19 (14.0%)
Age at enrollment (years)	
N	106
Median (Inter-quartiles)	74.0 (65.0, 81.0)
KPS categories	
40	1 (1.9%)
50	6 (11.3%)
60	15 (28.3%)
70	9 (17.0%)
80	15 (28.3%)
90	5 (9.4%)
100	2 (3.8%)
Gender	
Male	86 (63.2%)
Female	50 (36.8%)
Primary cancer site	
Prostate	50 (36.8%)
Breast	27 (19.9%)
Lung	14 (10.3%)
Bladder	11 (8.1%)
Other	28 (20.6%)
Unknown	6 (4.4%)
Fractions for the radiation site	
1	87 (64.0%)
5	38 (27.9%)
10	11 (8.1%)

Table 2: Multivariable model for nausea and nausea-related QoL scores

	During Treatment					During Follow-Up				
Time-varying Independent variable	Coefficient	SE	t Value	p	AIC	Coefficient	SE	t Value	p	AIC
Intercept	0.06291	0.05200	1.21	0.2285	331.8	-0.00038	0.1343	-0.01	0.9977	317.9
Day	0.01102	0.01286	0.86	0.3950		0.02427	0.02203	1.10	0.2740	
Q4 (log)	0.7464	0.05934	12.58	<.0001*		0.5159	0.08993	5.74	<.0001*	
Q8 (log)	0.2061	0.06751	3.05	0.0034*		0.3739	0.09470	3.95	0.0002*	

* $p<0.006$ was considered statistically significant.

Table 3: Multivariable model for vomiting and vomiting-related QoL scores

	During Treatment					During Follow-Up				
Time-varying Independent variable	Coefficient	SE	t Value	p	AIC	Coefficient	SE	t Value	p	AIC
Intercept	0.02673	0.03050	0.88	0.3824	132.0	-0.07647	0.09968	-0.77	0.4453	213.9
Day	-0.00558	0.00785	-0.71	0.4808		0.02340	0.01651	1.42	0.1608	
		9								
Q13 (log)	0.5974	0.05846	10.22	<.0001*		0.4784	0.08970	5.33	<.0001*	
Q18 (log)	0.2662	0.07125	3.74	0.0004*		0.3502	0.1015	3.45	0.0009*	

* p<0.006 was considered statistically significant.

Conclusions

Nausea and vomiting both significantly influence QOL. Nausea seems to impact patients themselves, whereas vomiting affects those closest to the patient. Patients and their families may benefit from more individualized care and support services based on their nausea and vomiting symptoms.

eP009
PREVENTION OF CHEMOTHERAPY- INDUCED NAUSEA AND VOMITING WITH PALONOSETRON: A SINGLE CENTER AUDIT

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Introduction

Palonosetron has largely replaced first generation 5-HT3 receptor antagonists for the prevention of chemotherapy induced nausea and vomiting in single day chemotherapy. The aim of this audit was to confirm that chemotherapy induced nausea and vomiting is sufficiently prevented using IV palonosetron in combination with other antiemetics recommended in guidelines

Methods

This audit was conducted in the cancer care outpatient unit in an Australian tertiary hospital. Eligible patients who had chemotherapy with palonosetron were identified using the electronic prescribing system. Consented patients completed a questionnaire on nausea severity, emesis, rescue medications and their effectiveness from day 1 to day 5 of chemotherapy.

Results

A total of 82 patients were included and 40 patients responded. 22 (55%), 13 (33%) and 5 (13%) patients received highly, moderately and low emetogenic chemotherapy, respectively. 32 (80%) patients received at lease MASCC recommended antiemetic regimen, but not olanzapine. Overall, one patient had vomiting and 24 patients (60%) experienced nausea (64%, 62% and 40% of patients received highly, moderately and low emetogenic chemotherapy, respectively). Clinically significant (score >=3 out of 10) nausea was experienced by 13 (33%) patients. Similar numbers of patients experienced nausea from Day 1 to 5. Rescue antiemetics were used by 17 (42.5%) patients. Metoclopramide was the most frequently used antiemetic, followed by ondansetron and Olanzapine.

Conclusions

Vomiting was sufficiently prevented by the recommended antiemetics including palonosetron. However, majority of patients still experienced acute and delayed nausea.

eP010
ADHERENCE TO GUIDELINES FOR ANTIEMETIC USE IN CANCER: ADVANCING EVIDENCE-BASED PRACTICE IN CLINICAL SETTINGS

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Introduction

Chemotherapy-induced nausea and vomiting (CINV) remains a debilitating toxicity associated with cancer treatment. Guidelines in cancer care are important to provide a framework for evidence-based care. With the development of effective antiemetic regimens, guideline adherence can prevent 70%-80% of CINV. Adherence to guidelines can help to close the practice gap between research and patient care. Despite having evidence-based guidelines for CINV for two decades, challenges remain to implementing guidelines into practice.

Methods

An integrative literature review was conducted to understand the use of CINV guidelines in practice. The first CINV guidelines were published in 1998 (MASCC) and 1999 (ASCO) thus our literature search started in 2000. The following terms were searched in PubMed, Medline, CINAHL and Cochrane: Antiemetics, CINV, guidelines and adherence. 53 publications were identified which were then screened by two independent reviewers. 25 publications met inclusion criteria of reporting on antiemetic guidelines in a clinical setting.

Results

Full-text reviews are ongoing and summarized findings will be presented. Strategies related to successful implementation of guidelines as well as barriers and facilitators will be reported. Clinical outcomes such as reduction in the incidence of both acute and delayed CINV, side effects and improvement in quality of life will be reported.

Conclusions

Despite clinical practice guidelines on antiemetic use in cancer care challenges remain to implementing these guidelines in practice settings. Findings from multiple studies suggest that interventions to merge the gap between guidelines and clinical practice reduces the incidence of CINV and improves emetic control in patients with cancer.

eP011
THE STUDY OF THE EFFECT OF LOW DOSE OLANZAPINE ON NAUSEA IN OUR DEPARTMENT

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Introduction

In cancer chemotherapy, there are nausea and vomiting as side effects that patients feel strongly as distress. Currently the

mechanism of emesis is also clarified, but it is not yet fully controlled. For the use of olanzapine, a psychotropic drug of multireceptor action for preventing delayed nausea and vomiting after advanced emetogenic risk chemotherapy including anthracycline and cyclophosphamide in the MASCC / ESMO guideline, the antiemetic effect it is suggested that it is effective.

Methods

From April 2016 to December 2018, among surgically available primary breast cancer patients who had undergone preoperative or postoperative adjuvant therapy using anthracycline anticancer agent, 2.5 mg of olanzapine was administered as an antiemetic 29 subjects were used. For regimens using anthracycline drugs, FEC 100 therapy or TAC therapy was used.

Results

The median age was 45 years old (30 to 61 years old). In 27 cases, improvement according to Grade (CTCAE v4.0 of nausea) was improved, 15 cases (51.7%) improved to Grade 0. No cases of oral administration were withdrawn due to adverse events caused by olanzapine.

Conclusions

In adjuvant chemotherapy, it is necessary to take into consideration the balance between maximum therapeutic intensity and minimal adverse reaction symptoms and try to prevent recurrence. In particular, chemotherapy-induced nausea and vomiting (CINV) is a representative side effect, and control over it has an important role in the progress of drug therapy afterwards. Olanzapine, together with a marked antiemetic effect, could help smooth progress of cancer drug therapy.

ePO12

RADIATION-INDUCED NAUSEA AND VOMITING: A COMPARISON BETWEEN MASCC/ESMO, ASCO AND NCCN ANTIEMETIC GUIDELINES

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Introduction

Radiation-induced nausea and vomiting (RINV) can affect 50-80% of patients undergoing radiotherapy (RT) and negatively impacts quality of life. This review aimed to compare the most recent RINV antiemetic guidelines produced by the Multinational Association for Supportive Care in Cancer (MASCC), the European Society of Clinical Oncology (ESMO), the American Society of Clinical Oncology (ASCO) and the National Comprehensive Cancer Network (NCCN). Future improvements to antiemetic guidelines and research directions in RINV were also discussed.

Methods

Antiemetic guidelines produced by MASCC/ESMO, ASCO and NCCN were examined to identify similarities, differences and inadequacies within the guidelines.

Results

Table 1. Levels of emetogenic risk for radiotherapy

Risk Level	Site of radiation
High (> 90%)	Total body irradiation
Moderate (30-90%)	Upper abdomen, craniospinal
Low (10-30%)	Brain, head and neck, thorax, pelvis
Minimal (< 10%)	Extremities, breast

Table 2. Comparison of strength and evidence of recommendations by organization

	Levels of evidence/scientific confidence	Levels of consensus/grade of recommendation
MASCC	High – Repeated, well-conducted RCTs of appropriate size were available Moderate – At least one RCT supported by well-conducted phase II trials was available Low - Formal clinical trials at a level less than mentioned above Very Low – Clinical impression only No confidence possible	High - Consensus of more than 2/3 of panellists Moderate - Consensus between 1/3 and 2/3 of panellists Low - Consensus of less than 1/3 of panellists
ESMO	I - Evidence from at least one large RCT of good methodological quality (low potential for bias) or meta-analyses of well-conducted RCT without heterogeneity II - Small RCTs or large RCTs with suspicion of bias or meta-analyses of such trials with demonstrated heterogeneity III -Prospective cohort studies IV - Retrospective cohort studies or case-control studies V - Studies without control group, case reports or expert opinion	A -Strong evidence for efficacy with substantial clinical benefit, strongly recommended B -Strong or moderate evidence for efficacy but with a limited clinical benefit, generally recommended C -Insufficient evidence for efficacy or benefit does not outweigh the risk or disadvantages, optional D -Moderate evidence against efficacy or for adverse outcome, generally not recommended E - Strong evidence against efficacy or for adverse outcome, never recommended
ASCO	I - Evidence is obtained from meta-analysis of multiple, well-designed, controlled studies. RCTs have low false-positive and low false-negative errors (high power) II - Evidence is obtained from at least one well-designed experimental study. RCTs have high false-positive and/or negative errors (low power) III - Evidence is obtained from well-designed, quasi-experimental studies such as non-randomized, controlled, single-group, pre-post, cohort, time, or matched case-control series IV - Evidence is from well-designed, non-experimental studies, such as comparative and correlational descriptive and case studies V - Evidence is from case reports and clinical examples	A - There is evidence of type I or consistent findings from multiple studies of types II–IV B - There is evidence of types II–IV, but findings are generally consistent C - There is evidence of types II–IV, but findings are inconsistent D - There is little or no systematic empirical evidence
NCCN	Category I - high level evidence such as RCTs, with uniform consensus Category IIA – lower level evidence, there is uniform consensus Category IIB - lower level evidence, without uniform consensus but no major disagreement Category III - any level of evidence, there is major disagreement	

RCT = randomized control trial

Table 3. Comparison between MASCC/ESMO, ASCO, NCCN antiemetic guidelines

RISK CATEGORY	MASCC/ESMO 2016	ASCO 2017	NCCN 2017
High	Prophylaxis with a 5HT3 RA and DEX	Prophylaxis with a 5HT3 RA (granisetron, ondansetron) and DEX daily	Prophylaxis with a 5HT3 RA (granisetron, ondansetron) and optional DEX daily
Moderate	Prophylaxis with a 5HT3 RA and optional DEX	Prophylaxis with a 5HT3 RA (granisetron, ondansetron, tropisetron) and optional DEX for the first five fractions	Prophylaxis with a 5HT3 RA (granisetron, ondansetron) and optional DEX daily
Low	Prophylaxis or rescue with a 5HT3 RA, DRA or DEX Cranium – prophylaxis or rescue with DEX	Rescue with a 5HT3 RA (granisetron, ondansetron), DRA (prochlorperazine, metoclopramide), or DEX Cranium – rescue with DEX	None
Minimal	Rescue with a 5HT3 RA, DRA or DEX	Rescue with a 5HT3 RA (granisetron, ondansetron), DRA (prochlorperazine, metoclopramide), or DEX	None
SPECIAL CONSIDERATIONS			
Concomitant Chemotherapy	Antiemetic prophylaxis should follow the guidelines for CINV regimens. If emetic risk of RT is higher than that of the concomitant CT, then the risk level of RT must be chosen to tailor the antiemetic treatment.		
Breakthrough Emesis	None	None	Patients who experience breakthrough nausea and/or vomiting may be treated with a different class of agent, or with ondansetron or granisetron if they did not receive primary prophylaxis, as is the custom in CINV

CT = chemotherapy, RT = radiotherapy, CRT = chemotherapy and radiotherapy, 5HT3 RA = serotonin receptor antagonist, DRA = dopamine receptor antagonist, DEX = dexamethasone, CINV = chemotherapy-induced nausea and vomiting

Discrepancies between the various antiemetic guidelines included the addition of dexamethasone to moderate risk antiemetic regimens, the prophylactic treatment of RINV in low risk categories, and the appropriate treatment for breakthrough emesis. The guidelines were in agreement that high risk RT regimens should be treated prophylactically with a serotonin receptor antagonist. For patients receiving concurrent chemotherapy and RT, all guidelines recommended that antiemetic treatment be prescribed according to the emetic risk associated with the patients' chemotherapy regimens. The most dissension between guidelines occurred in the low and moderate risk categories. Low and minimal risk recommendations were based on low level evidence and informal consensus.

Conclusions

RINV is a frequent and distressing side effect of RT. Further research is needed to establish effective antiemetic guidelines and ensure optimal treatment outcomes.

eP013

OLANZAPINE (OLN) VERSUS APREPITANT (APR) IN PATIENTS RECEIVING HIGH-EMETOGENIC CHEMOTHERAPY: PRELIMINARY RESULTS OF SINGLE-CENTER RANDOMIZED PHASE II TRIAL

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Introduction

management of chemotherapy-induced nausea and vomiting (CINV) remains challenging. OLN might provide several benefits over APR which is current standard of care – particularly in terms of nausea control and cost effectiveness. However, sedation associated with recommended doses of olanzapine precludes its wide use in oncology practice

Methods

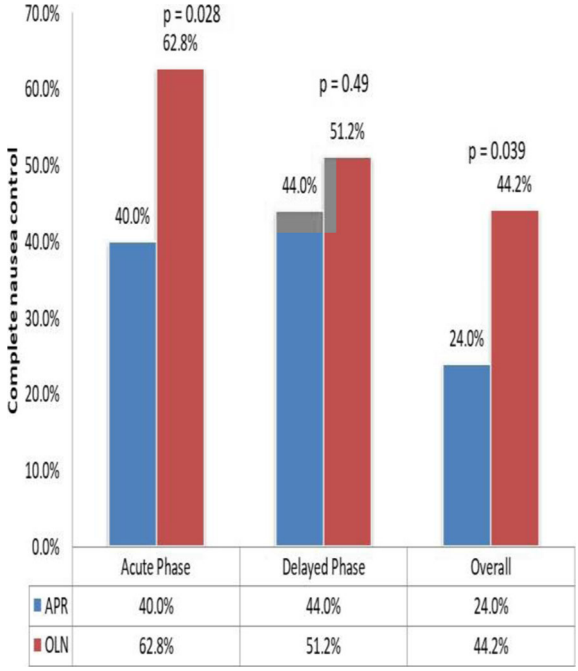
this was randomized phase II single center study aimed to compare OLN and APR in CINV prophylaxis. Key inclusion criteria were: chemo- and radio-therapy naïve patients, planned administration of high emetogenic chemotherapy (cisplatin, carboplatin AUC≥4, doxorubicin etc). Patients were randomized 1:1 ratio in the following arms: olanzapine 5 QD day 0-4 or aprepitant 125 mg day 1, 80 mg day 2,3. All patients received ondansetron 16 mg day 1 and dexamethasone 8 mg day 1-3. Primary endpoint was complete nausea control (no nausea and no rescue medication) 0-120 hours after chemotherapy. Nausea was assessed using MASCC Antiemesis Tool. Sample size: 94 patients to increase nausea control rate from 40 to 70% ($\alpha = 0,05$; $\beta = 0,80$; 10% data loss).

Results

we enrolled 93 patients. The groups were well balanced [Table 1]. The proportion of patients with no chemotherapy-induced nausea in OLN and APR groups was 44.2% and 24.0% respectively (RR 2.5; 95% CI 1.04-6.08; p = 0.039) [Figure 1]. Complete response was achieved in 74.4% and 54.0% patients respectively (RR 2.48; 95% CI 1.026-5.99; p = 0.041). No differences in rates of undesired sedations were detected.

Table 1. Patients demographics

	APR	OLN	Overall
N	50 (100%)	43 (100%)	93 (100%)
Age (median)	49 y (27-78)	49 y (26-74)	49 (26-78) y
Age <60 years	40 (80%)	34 (79%)	74 (79.5%)
Gender – female	48 (96%)	41 (95.3%)	89 (95.6%)
Gender – male	2 (4%)	2 (4.7%)	4 (4.4%)
Chemotherapy:			
Cisplatin-based	13 (26%)	14 (32,5%)	27 (29%)
AC	20 (40%)	18 (42,0%)	38 (40,8%)
Other	17 (34%)	11 (25,5%)	28 (30,2%)



Conclusions

our data suggests superiority of OLN regimen in terms of nausea control. This regimen deserves further investigation.

eP014

AFFORDABILITY OF APREPITANT FOR CANCER PATIENTS IN ROUTINE CLINICAL PRACTICE IN RUSSIA: ANALYSIS OF GOVERNMENT SUPPLIER DATABASE

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Introduction

aprepitant-based prophylaxis for chemotherapy-induced nausea and vomiting (CINV) is an established standard of care for cancer patients receiving high-emetogenic chemotherapy (HEC). However, no studies addressed the issues of affordability of aprepitant in Russia and many other low-resources countries.

Methods

for the purposes of this trial we collected data from government-establish electronic database which use is mandatory for every government-funded healthcare organization. We conducted the analysis of this database for electronic public procurement auctions of aprepitant and fosaprepitant, as well as cisplatin for the period from 01/01/2015 to 01/01/2018. The latter was chosen as a rough estimate of the number of patients receiving highly emetogenic therapy in Russia.

Results

we identified 278 electronic auctions for the purchase of aprepitant/fosaprepitant. During the study period 77045 packages of these drugs were purchased. For the same period 32474890 mg of cisplatin was purchased. This amount of cisplatin is equivalent to 240555 courses of HEC with a course dose of 75 mg/m2 and an average body surface area of 1.8 m2. The estimated rate of affordability of aprepitant drugs for cancer was only 32%. Significant interregional variability was revealed.

Conclusions

the vast majority of cancer patients in Russia do not have access to modern antiemetogenic therapy. The development of effective and more affordable methods for the prevention of CINV remains an unmet need.

eP015

ARE WE DOING ENOUGH FOR OUR HIGH-RISK PATIENTS? INCIDENCE OF CINV IN HEAD AND NECK CANCER PATIENTS RECEIVING SINGLE-AGENT CISPLATIN WITH CONCURRENT RADIATION

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Introduction
Cisplatin remains one of the highest emetogenic chemotherapy agents administered today. Although head and neck radiation is considered low emetogenic (30-60%), the location and burden of disease can cause a multitude of issues surrounding nutrition and nausea.
Methods
A retrospective chart review was conducted between March and December 2018. Eligibility criteria included cisplatin-naive patients receiving single-agent treatment and a minimum two cycles of treatment. Incidence of nausea and vomiting was determined by pharmacy follow-up reports in our electronic medical record system.
Results
77 head and neck cancer patients met the eligibility criteria (27 received low-dose cisplatin weekly and 50 received high-dose cisplatin monthly). The majority of patients received ~70 Gy in 33 fractions. 50 patients (65%) experienced no nausea after completing their first cycle and 75 patients (97%) experienced no vomiting. 10 (37%) and 17 (34%) patients experienced nausea receiving low-dose and high-dose cisplatin, respectively. Average Visual Analogue Score (VAS) for nausea for patients receiving low-dose cisplatin was 4.6 compared to 5.4 for patients receiving high-dose cisplatin. Of the 27 patients that experienced nausea/vomiting only five (18%) had changes to their antiemetics for cycle 2.
Conclusions
Incidence of chemotherapy-induced nausea and vomiting was well controlled in patients receiving single-agent cisplatin with concurrent radiation. Nausea continues to be the greatest challenge when managing antiemetic medication.

eP016

A RANDOMIZED, DOUBLE-BLIND, PLACEBO-CONTROLLED PHASE III TRIAL EVALUATING OLANZAPINE 5 MG AND STANDARD ANTIEMETIC THERAPY FOR PREVENTING CINV CAUSED BY CISPLATIN-BASED CHEMOTHERAPY : J-FORCE STUDY

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Introduction
Olanzapine 10 mg added to standard antiemetic therapy including aprepitant, palonosetron, and dexamethasone has been recommended for preventing chemotherapy-induced nausea and vomiting (CINV) caused by highly emetogenic chemotherapy. Guidelines suggest that a dose of 5 mg should be taken into consideration because of sedation. Olanzapine 5 mg showed an equivalent activity and favorable toxicity to somnolence in several phase II studies. We conducted a randomized, double-blind, placebo-controlled phase III trial to evaluate olanzapine 5 mg combined with standard antiemetic therapy for preventing CINV caused by cisplatin-based chemotherapy.
Methods
Patients receiving cisplatin (≥ 50 mg/m2) were randomly assigned to either olanzapine 5 mg or placebo on days 1–4, combined with aprepitant, palonosetron, and dexamethasone (Figure 1). The primary endpoint was complete response (CR), defined as no vomiting and no rescue medications in the delayed phase (24–120 h). A total of 690 patients were required to detect a 10% increase in CR from 65% in the placebo to 75% in the olanzapine, with a one-sided alpha of 2.5% and a power of 80%.
Results
A total of 710 patients were enrolled (olanzapine 356, placebo 354). CR in the delayed phase was 79.1% (95% CI: 74.9–83.3) in the olanzapine 5 mg and 65.8% (95% CI: 60.9–70.8) in the placebo ($p < 0.001$). Other efficacy results are summarized in Table 1. The most common treatment-related adverse event was somnolence (43.1% for olanzapine, 33.0% for placebo).
Conclusions
Olanzapine 5 mg combined with aprepitant, palonosetron, and dexamethasone can be a new standard antiemetic therapy for cisplatin-based chemotherapy.

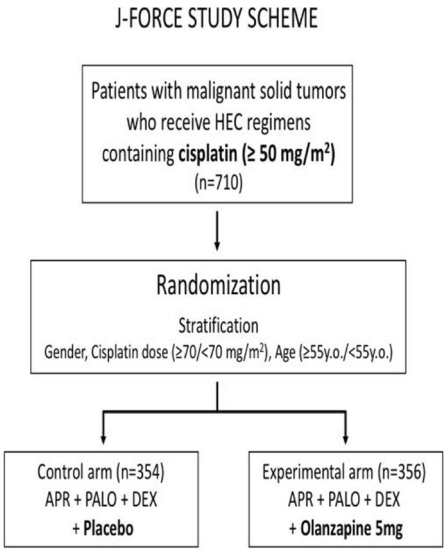

Figure 1. APR: Aprepitant, PALO: Palonosetron, DEX: Dexamethasone
OLZ or placebo is administered once daily after dinner from Day 1 to Day 4.

eP017

HIGH INCIDENCE OF NAUSEA DURING INITIAL AND REPEATED COURSES OF INTRAVENOUS CHEMOTHERAPY IN PATIENTS RECEIVING GUIDELINE CONSISTENT ANTI-EMETIC PROPHYLAXES– A PROSPECTIVE, OBSERVATIONAL, REAL WORLD STUDY

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Introduction
Current research has focused on vomiting as the primary problem of chemotherapy-induced nausea and vomiting (CINV). The incidence and impact of nausea is under-reported and remains a major unmet medical need.
Methods
This prospective, observational single centre study enrolled 95 pts undergoing intravenous chemotherapy, receiving guideline consistent CINV prophylaxis (GCCP). There were LEC = 25 pts, MEC = 24 pts and HEC = 46 pts. Patient diaries were used to collect data from day-1 to day-5, day-7 and day-10 beginning with cycle-1 for up to 3 cycles. Nausea was reported by the pts using a visual analog scale (VAS). Vomiting episodes were recorded in the patient's diaries and data was analysed as a secondary end-point.
Results
The incidence of nausea of entire population was significantly higher than vomiting for cycle 1 (58% vs 14%; Chi2 22.271 p<0.0000); for cycle 2 (51% vs 14%; Chi2 26.964 p<0.0000) and for cycle 3 (46% vs 18%; Chi2 14.161 p<0.0002). Nausea was continuous in 25% of the patients in all 3 cycles. For patients with documented intermittent nausea, the mean duration was 3.8 hours. The median maximum intensity of nausea was 6 (range 1-10) for all three cycles. The median time to development of first episode of nausea was 29 hours (range 1 to 90). Significant variables predicted for nausea in cycle 1 included, age and history of morning sickness).
Conclusions
Despite GCCP, chemotherapy induced nausea remains a major unmet medical need in cancer pts. Further research should focus on treatment of nausea and patient's risk factors.

eP018

NETUPITANT INDUCES PERSISTENT NK1 RECEPTOR INTERNALIZATION AND INHIBITS PHOSPHORYLATION IN DOWNSTREAM NK1 RECEPTOR SIGNALING IN HEK293 AND NG108-15 CELLS

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Introduction
Previous studies in our laboratory have shown that palonosetron induces 5-HT3 receptor internalization and inhibits Substance P (SP)-mediated NK1 receptor responses both in vitro and in vivo, likely as a result of inhibition of 5-HT3/NK1 receptor crosstalk. More recently, using cells that express both the NK1 and 5-HT3 receptors, we have shown that palonosetron and netupitant trigger NK1 receptor internalization in an additive manner and exhibit synergistic inhibition of the SP response at the NK1 receptor. In the present studies we focus our mechanistic description on netupitant at the cellular and molecular level beyond the antagonist-receptor interactions at the surface and immediate internalization.
Methods
NK1 receptor function in HEK293 cells was measured by the Ca^{2+} signaling response to SP following incubation and subsequent removal of netupitant. Cellular signaling changes induced by netupitant's NK1 antagonism in NG108-15 cells were measured by phosphorylation changes using ELISA (CaMKIIα, ERK ½ and MAP).
Results
Netupitant triggered NK1 receptor internalization without subsequent receptor resensitization even 6 h after exposure to the antagonist. CaMKIIα, ERK1/2 and MAP1B all underwent phosphorylation in the presence of SP. Increases in phosphorylation varied from minimal (< 2-fold for ERK-1/2) to medium (4-fold for CaMKIIα) to high (about 10-fold MAP1B). In each case, phosphorylation increases were inhibited by netupitant.
Conclusions
The sustained loss of receptor function upon netupitant exposure to HEK293 cells suggests receptor internalization is followed by receptor degradation rather than recycling. Receptor synthesis may be required before NK1 receptor function is restored.

eP019

PHASE III STUDY OF COMPARING DEXAMETHASONE ON DAY 1 WITH DAY 1-4 WITH COMBINED NEUROKININ-1 RECEPTOR ANTAGONIST, PALONOSETRON AND OLANZAPINE IN CISPLATIN-BASED CHEMOTHERAPY: SPARED TRIAL

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Introduction
Dexamethasone (DEX) is administered for multiple days to prevent chemotherapy-induced nausea and vomiting (CINV) to patients receiving high emetogenic chemotherapy (HEC). It has also been reported that DEX has notorious side effects. Our DEX-1 trial verified sparing DEX

after day2 in HEC regimen (Ito, Y, *J Clin Oncol*). In subgroup analysis, the benefit of DEX sparing was not clear for patients receiving cisplatin (CDDP)-based HEC regimens (CDDP regimens). Several phase 3 trials recently demonstrated that olanzapine (OLZ) improved CINV prevention in HEC. It is not clear whether addition of OLZ enables DEX sparing in CDDP regimens. Thus, this study aims to evaluate the non-inferiority of DEX sparing compared with DEX on multiple days when combined with NK1 receptor antagonist (NK-1RA), palonosetron (Palo), and OLZ in CDDP regimens.

Methods

Cancer patients who are scheduled to receive CDDP ($\geq$ 50mg/m^2) are eligible. Patients will be randomly assigned to receive either DEX on day 1-4 or day 1 combined with NK1-RA, Palo and OLZ (5mg). The primary endpoint is complete response (CR) rate during the delayed phase (24-120hr post-CDDP administration), defined as no emesis and no rescue medications. The non-inferiority margin is set at -15.0%. We expect that CR rates would be 75% in both arms. Two hundred sixty-two patients are required for at least 80% power to confirm non-inferiority at a one-sided significance level of 2.5%. After considering the possibility of dropouts, we set our final required sample size of 280 (UMIN000032269).

Results

As of January 2019, 18 patients patients recruited.

Conclusions

NA

eP020

ANTIEMETICS FOR PREVENTION OF NAUSEA AND VOMITING CAUSED BY HIGHLY EMETOGENIC CHEMOTHERAPY: A COCHRANE SYSTEMATIC REVIEW AND NETWORK META-ANALYSIS

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Introduction

Combining NK1- and 5-HT3-inhibitors plus dexamethasone is effective in preventing chemotherapy-induced nausea and vomiting (CINV) in patients receiving highly emetogenic chemotherapy (HEC). The study-aim was to compare different agent-combinations to rank treatments according to efficacy and safety.

Methods

We systematically searched for randomized-controlled trials including adults with any cancer type receiving HEC, according to the latest definition. Outcomes of interest were complete response (CR) and complete control of nausea in acute, delayed (DP), and overall phase (OP), adverse events (AE), and quality of life (QoL). Treatment effects are given as risk ratios (RR) with corresponding 95%-confidence intervals (CI). For network meta-analyses, we used frequentist graph-theoretical approach. Combinations of 5-HT3-inhibitors plus dexamethasone were included to strengthen the network.

BMBF Grant-number: 01KG1510

Results

Results, including 61 studies and comprising 24,900 patients and 21 treatment combinations (figure 1), showed highest CR for apre_palo during DP [RR: 1.38 (95%-CI: 1.13-1.68)] (figure 2) and OP [RR: 1.58 (95%-CI: 1.35-1.84)] compared to granisetron. Full network results will be presented during the conference. There was no discernible trend favoring any NK1/5-HT3-combination over another NK1/5-HT3-combination for AEs, QoL, and completely controlling nausea during DP and OP (figure 3). Reporting of AE and QoL was generally poor and differed between studies. Febrile neutropenia and hiccups were frequently reported side-effects.

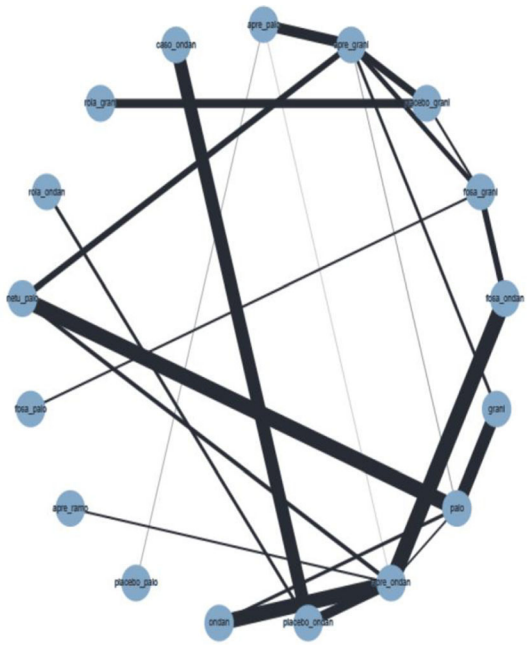

Figure 1: Exemplary network illustration for the outcome complete response during the delayed phase; line: represents direct comparisons; line widths: number of patients

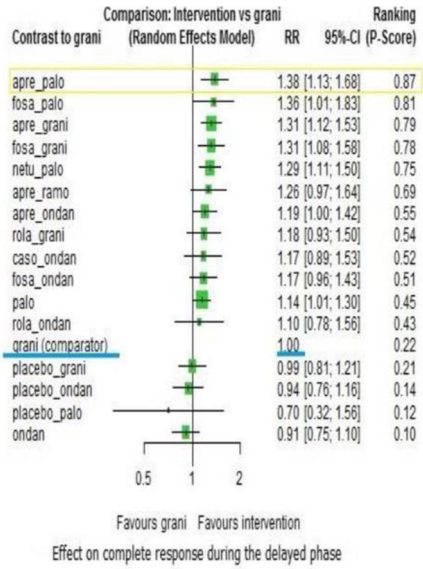

Figure 2: Exemplary network meta-analysis forest plot for the outcome complete response during the delayed phase. Network estimate of granisetron was used as exemplary reference treatment (underlined). Ranking of treatments is ordered by P-Score (descending); higher P-Score is indicating a higher probability of being the best treatment for achieving complete response. Apre_palo is at the top of the ranking (framed).

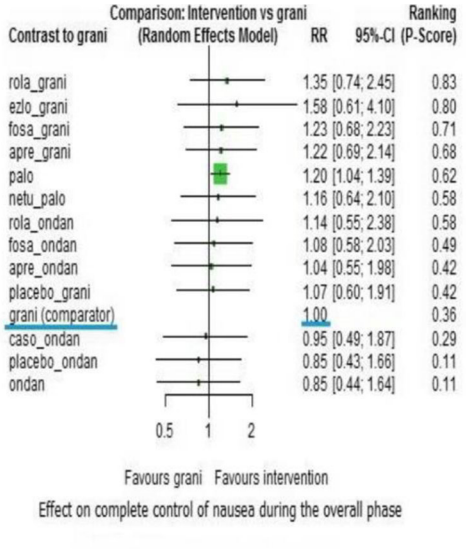

Figure 3: Exemplary network meta-analysis forest plot for the outcome complete control of nausea during the overall phase. Network estimate of granisetron was used as exemplary reference treatment (underlined). Ranking of treatments is ordered by P-Score (descending); higher P-Score is indicating a higher probability of being the best treatment for achieving complete control of nausea.

Conclusions

This is the first network meta-analyses comparing antiemetics for HEC. Results show that apre_palo appears to be most effective for achieving CR. Further trials should focus on consistent reporting of AE and QoL to ensure comparability of treatment-combinations.

eP021

ANTIEMETICS FOR PREVENTION OF NAUSEA AND VOMITING CAUSED BY MODERATELY EMETOGENIC CHEMOTHERAPY: A COCHRANE SYSTEMATIC REVIEW AND NETWORK META-ANALYSIS

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Introduction

Treatment-combinations of 5-HT3-inhibitors plus dexamethasone (5-HT3) and combinations that include an NK1-inhibitor additionally (NK1/5-HT3) are effective in preventing chemotherapy-induced nausea and vomiting in patients receiving moderately emetogenic chemotherapy (MEC). The study-aim was to determine whether 5-HT3 combinations are as effective as NK1/5-HT3-combinations and to rank treatments according to efficacy and safety.

Methods

We systematically searched for randomized-controlled trials including adults with any cancer type receiving MEC, according to the latest definition. Outcomes of interest were complete response (CR), complete control of nausea in acute, delayed (DP), and overall phase (OP), adverse events (AE), and quality of life (QoL). Treatment effects are given as risk ratios (RR) with corresponding 95%-confidence intervals (CI). For network meta-analyses, we used frequentist graph-theoretical approach. Pairwise meta-analyses were conducted to compare NK1/5-HT3-combinations to 5-HT3-combinations.

BMBF Grant-number: 01KG1510

Results

We included 38 studies comprising 12,705 patients and 20 treatment regimens (see figure 1 for exemplary network). NK1/5-HT3-combinations compared to 5-HT3-combinations showed better CR in DP [RR: 1.13 (95%-CI:1.08-1.18)] (figure 2) and OP [RR: 1.14 (95%-CI:1.08-1.19)]. Results of network meta-analysis showed highest CR for apre_palo during DP (figure 3). Reporting of nausea-outcomes, AE, and QoL was poor and differed between studies. No discernible trend favored any treatment-combination. Generally, neutropenia and hiccups were the most frequently reported AEs.

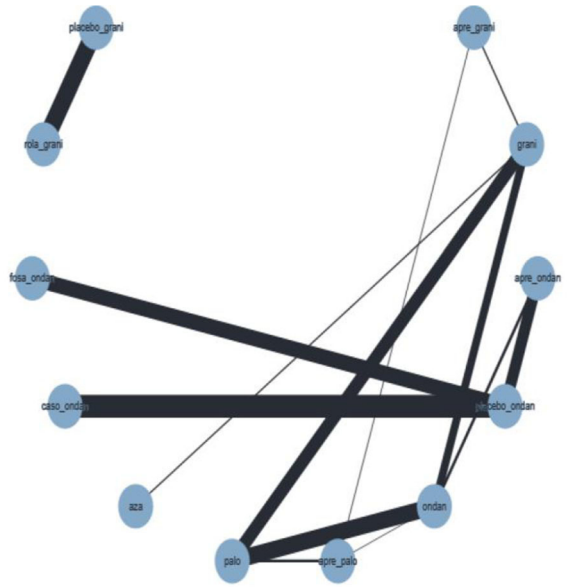
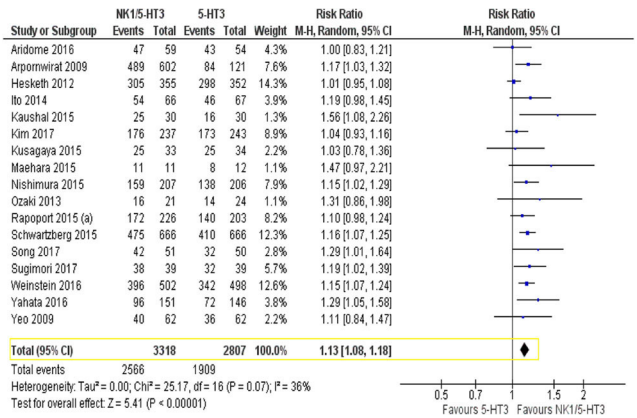


Figure 1: Exemplary network illustration for the outcome complete response during the delayed phase; line: represents direct comparisons; line widths: number of patients



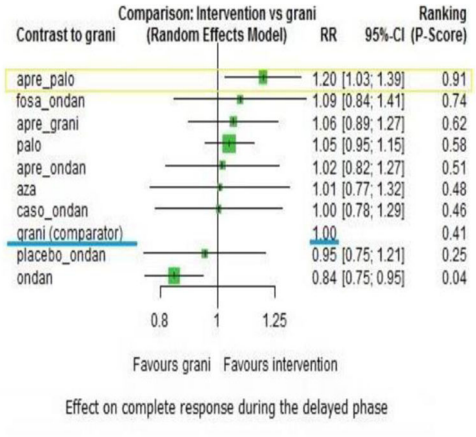


Figure 3: Exemplary network meta-analysis forest plot for the outcome complete response during the delayed phase. Network estimate of granisetron was used as exemplary reference treatment (underlined). Ranking of treatments is ordered by P-Score (descending); higher P-Score is indicating a higher probability of being the best treatment for achieving complete response. Apre_palo is at the top of the ranking (framed).

Conclusions

This is the first network meta-analysis comparing antiemetics for MEC. NK1/5-HT3-combinations achieve higher CR than 5-HT3-combinations; apre_palo appears to be most effective during DP. Further trials should focus on consistent reporting of nausea-outcomes, AE, and QoL to ensure comparability of treatment-combinations.

eP022

EFFECT OF AN ELECTRONIC QUALITY CHECKLIST ON PRESCRIPTION PATTERNS OF PROPHYLACTIC ANTIEMETICS AND PAIN-FLARE MEDICATIONS IN THE CONTEXT OF PALLIATIVE RADIOTHERAPY FOR BONE METASTASES

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Introduction

International guidelines recommend prophylactic antiemetics and pain flare medications for subsets of patients receiving palliative radiotherapy for bone metastases. Anecdotally however, prescription rates seem variable. We hypothesized that a simple electronic quality checklist could increase the evidence-based use of these medications.

Methods

We implemented a single centre default force-function electronic quality checklist for all patients planned to receive palliative radiotherapy for lumbar spine bone metastases. We reviewed prescription rates from 6 months pre- and post-intervention. Patients were stratified according to if they were treated within a dedicated rapid palliative (RPAL) radiotherapy program or not. Khi-square tests compared rates of prophylactic antiemetic and pain flare medications pre- and post-intervention and RPAL vs not.

Results

204 patients were identified with 12% treated in the RPAL program. The proportion of the 204 patients prescribed prophylactic antiemetics and pain flare medications pre- and post-intervention were respectively 31% vs 71% ($p<0.001$) and 26% vs 48% ($p=0.003$). The corresponding proportions of the 24 patients from the RPAL program were 41% vs 81% ($p=0.05$) and 58% vs 100% ($p=0.01$).

Conclusions

Our data shows that a simple electronic quality checklist can have a significant effect on the evidence-based use of prophylactic antiemetic and pain flare medications for patients treated with palliative radiotherapy for lumbar spine bone metastases. We believe such strategies should be routinely included in other clinical pathways to improve use of symptom control medications.

eP023

SAFETY OF INTRAVENOUS (IV) NEPA AND ORAL NEPA FOR PREVENTION OF CINV IN PATIENTS WITH BREAST CANCER RECEIVING ANTHRACYCLINE/CYCLOPHOSPHAMIDE (AC) CHEMOTHERAPY

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Introduction

Unlike other IV NK_1RAs, fosnetupitant solution does not require a surfactant, emulsifier, or solubility enhancer and contains no allergenic excipients. In a pivotal study, no infusion-site or anaphylactic-like reactions related to IV NEPA (fosnetupitant/palonosetron) were reported in patients receiving cisplatin-based highly emetogenic chemotherapy. Hypersensitivity reactions and anaphylaxis have been reported with IV aprepitant, fosaprepitant and rolapitant, with the highest rate (35%) reported for fosaprepitant in the AC setting. We report on the safety of IV NEPA in breast cancer patients receiving AC chemotherapy.

Methods

In this Phase 3b, double-blind study (NCT03403712) female patients naïve to highly/moderately emetogenic chemotherapy were randomized 1:1 to receive a single 30-minute infusion of IV NEPA or a single oral NEPA capsule prior to AC for 4 cycles. Dexamethasone was administered to all patients on Day 1. The primary objective was assessment of safety based primarily on treatment-emergent adverse events (TEAEs). Secondary objectives included efficacy assessments. No formal between groups statistical comparison was planned.

Results

402 patients were included in the safety population. The AE profiles were similar for the two groups; cycle 1 results are reported (Table).

Comparable overall (0-120h) complete response (no emesis, no rescue) rates were seen during cycle 1 for IV NEPA (73.0%) and oral NEPA (77.2%).

n (%) pts with at least one	IV NEPA (N = 200)	Oral NEPA (N = 202)
TEAE	121 (60.5)	122 (60.4)
Severe TEAEs	11 (5.5)	10 (5.0)
Serious TEAEs	2 (1.0)	1 (0.5)
Treatment-related (TR) TEAE	13 (6.5)	12 (5.9)
TR infusion-site TEAE	0	0
TR TEAE leading to discontinuation or death	0	0
Most common (≥2%) TR TEAEs		
Headache	5 (2.5)	3 (1.5)
Dizziness	4 (2.0)	1 (0.5)

Conclusions

There were no IV NEPA-related infusion-site AEs and no anaphylaxis reported for either formulation. Consistent with the pivotal study, IV NEPA is safe and effective in patients receiving AC. As a simplified single-dose formulation, IV NEPA may be better tolerated than other NK1 RAs.

eP024
THE ACTION OF THE ORALLY BIOAVAILABLE GHRELIN AGONIST, HM01, TO ANTAGONISE CHEMOTHERAPY-INDUCED EMESIS MAY INVOLVE A SUPPRESSION OF FREE RADICAL PRODUCTION

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Introduction
Chemotherapy is hypothesised to induce free radical damage that contributes to a release of 5-HT and an activation of 5-HT_3receptors to drive the emetic response. HM01 alone, or in combination with palonosetron and netupitant, is useful to reduce cisplatin-induced emesis. However, it is not known if HM01 can prevent emesis induced by other chemotherapeutic drugs, free radicals, or mechanisms associated with elevated 5-HT levels. Here, we explore the potential of HM01 to prevent cyclophosphamide-induced emesis and the emesis induced by the free radical generator, pyrogallol, and the selective serotonin re-uptake inhibitor, fluoxetine.
Methods
HM01 (3-30 mg/kg, p.o.) or vehicle (water, 2 ml/kg, p.o.) was administered 1 h prior to the injection of cyclophosphamide (200 mg/kg, i.p., 24 h observation), pyrogallol (128 mg/kg, i.p., 8 h observation), or fluoxetine (100 mg/kg, p.o., 24 h observation). The number of retches and/or vomits were recorded.
Results
Cyclophosphamide induced 53.7±9.5 retches+vomits that was dose-dependently antagonised by HM01 (ID50~2.7 mg/kg; maximum reduction ~92 %, P<0.01). Pyrogallol and fluoxetine induced 69.0±21.5 and 49.8±16.6 retches+vomits, respectively. HM01 antagonised the emetic response induced by pyrogallol (ID50~2.9 mg/kg; maximum reduction ~99 %, P<0.01), but was less effective against fluoxetine (a non-significant 46 % reduction was seen at 10 mg/kg, P>0.05).
Conclusions
The profile of anti-emetic action of HM01 suggests that a suppression of free radical production may contribute to mechanisms of emesis induced by chemotherapy.

eP025
DEXAMETHASONE-SPARING ANTIEMETIC STRATEGY IN HEAD AND NECK CANCER PATIENTS RECEIVING CISPLATIN BASED CHEMOTHERAPY: A THREE YEAR RETROSPECTIVE ANALYSIS

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Introduction
The use of dexamethasone-sparing strategy in cisplatin containing regimens has been a controversial topic in recent years. In view of this, we reviewed the prescribing trends of dexamethasone in head and neck cancer patients at our institution.
Methods
We performed a retrospective chart and medical record review of head and neck cancer patients receiving platinum-based chemotherapy between January 2016 to January 2019. We identified 68 patients in two treatment groups: low-dose 40mg/m^2 weekly regimen (n=32) and high-dose 100mg/m^2three weekly regimen (n=36). Patients treated with TPF regimen (docetaxel, cisplatin and fluorouracil) were excluded from the analysis. Our primary endpoint was complete response (CR), defined as no emesis and no rescue medications between 0 to 120 hours post cisplatin infusion.
Results
Patients in the low-dose group typically received 12mg dexamethasone on day 1 with palonosetron and neurokinin-1 (NK1) antagonist. CR was achieved in 53% of patients in this group. In the high-dose group, patients received 12mg dexamethasone on day 1 with palonosetron, NK1 antagonist and 8mg dexamethasone on day 2 to 4 every three weeks. 62% of these patients achieved CR. The patient reported side effects such as hot flushes, ankle oedema, increased blood glucose level and mood changes were similar in incidence rates for both groups.
Conclusions
Dexamethasone-sparing strategy has some roles in low-dose cisplatin regimens for head and neck patients and would be worthwhile explored in further studies.

eP026
ONDANSETRON (OND) VERSUS PALONOSETRON (PALO) AS A MARKER OF NON-ADHERENCE TO ANTIEMETIC PROPHYLAXIS GUIDELINES IN HIGHLY EMETOGENIC CHEMOTHERAPY (HEC)

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Introduction
MASCC antiemetic guidelines recommend upfront triple prophylaxis (NK1 receptor antagonist (RA) + 5HT3 RA + dexamethasone) for patients receiving HEC. Physicians exhibit high variation in HEC guideline adherence, principally regarding NK1 inclusion. Whether HEC adherence is associated with choice of the specific 5HT3 agent is unknown.
Methods
In IBM Explorys electronic health records, we identified HEC courses and related nausea/vomiting (NV) from 2012-2018. We defined HEC guideline adherence as triple prophylaxis at chemotherapy initiation. We assigned courses of ≥ 7 day cycles of cisplatin, or AC, or carboplatin ≥ 14 day cycles, to oncologists based on encounter frequency. We categorized each physician treating ≥ 5 HEC courses based on their most commonly used 5HT3.
Results
Of 12,262 HEC courses, 57% involved physicians that more commonly used OND (mean OND to PALO ratio 3.9:1). These courses had lower physician guideline adherence (because of NK1 omission) and higher rates of NV. NV rates for cisplatin did not vary by 5HT3 used. For physicians commonly using PALO (mean OND:PALO ratio 0.2:1) superior guideline adherence and NV rates were seen, despite a slightly higher-risk population (younger and/or female).
Conclusions
HEC antiemetic guidelines recommend NK1 use, independent of 5HT3 agent selection. However, we observed lower NK1 use when OND was preferred, which may have caused the observed higher rates of NV with

OND. Further evaluation should assess whether pharmacy cost minimization is a driver of both OND preference and NK1 omission in HEC.

	HEC / Preferred 5HT3 RA							
	Combined HEC		AC		Cisplatin		Carboplatin	
	OND	PALO	OND	PALO	OND	PALO	OND	PALO
Courses	7027	5235	489	966	1511	1006	3972	2814
Age (mean)	62	61	55	54	61	61	64	64
% female	65%	72%	98%	99%	41%	45%	70%	74%
Guideline adherence	37%	44%	77%	88%	76%	71%	12%	18%
NV per course	29%	24%	34%	20%	33%	33%	27%	22%

eP027

EFFICACY AND INFUSION SITE ADVERSE EVENTS (ISAES) OF FOSAPREPITANT AFTER MIXING METHOD MODIFICATION: 1-YEAR EXPERIENCED IN PRIVATE TERTIARY CARE CENTER

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Introduction
According to high incidence of Infusion Site Adverse Events (ISAEs) of fosaprepitant from previous studies (10-34%) and our records, pharmacy oncology services unit has modified fosaprepitant dilution by reducing final concentration from manufacturer recommendation to 150 mg of fosaprepitant dilute in saline 200 mL and extend the infusion time from 30 to 40 minutes.
Methods
To investigate fosaprepitant-associated infusion site adverse events incidence and efficacy among patients receiving platinum- and anthracycline-based chemotherapy regimens after applied new mixing method. A descriptive retrospective study of 108 cancer-patients who received fosaprepitant as premedication for platinum- and anthracycline-based chemotherapy regimens. Data collection from electronic medical record since February 2018 to January 2019 from Bumrungrad International Hospital. The Injection Site Reaction (ISR) assessed by CTCAE V.5 and Efficacy defined as no vomiting. 108 patients are 61 females and 47 males, diagnosed with hematopoietic cancers (n=28), genitourinary and gynecologic cancers (n=26) and breast cancer (n=19), received Highly Emetogenic Chemotherapy (HEC) 32%, 96% and 63%, respectively.
Results
The incidence of ISAEs associated with fosaprepitant administration was 4.7% (n=14) of 299 dispensed doses. 8 patients experienced more than one type of ISAE, categorized as Grade 2 ISR. The most common report were: pain (n=5), swelling (n=4), erythema (n=2) and phlebitis (n=2). The incidence of nausea and vomiting was 1.3% (n=4, HEC).
Conclusions
The efficacy of fosaprepitant for Chemotherapy-Induced Nausea and Vomiting (CINV) prevention is over 98%. Although the incidence and severity of ISAEs associated modified fosaprepitant dilution were reduced. Chemotherapy vesicant properties and fosaprepitant appropriateness use need to be concerned.

eP028

A STUDY EVALUATING STEROID INDUCED METABOLIC SYNDROME AFTER ANTIEMETIC DEXAMETHASONE THERAPY IN PATIENTS RECEIVED HIGH EMETIC RISK CHEMOTHERAPY

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Introduction
Dexamethasone are often administered to prevent chemotherapy induced nausea and vomiting. The aim of this study was to assess the incidence of and factors associated with steroid induced metabolic syndrome in cancer patients receiving high emetic risk chemotherapy with antiemetic dexamethasone therapy.
Methods
This study was conducted retrospectively chart review of 356 patients who received high emetic risk chemotherapy with dexamethasone, aprepitant, and 5-HT3 antagonist between September 2015 and December 2017 at Chung-Ang university college of medicinel. Fasting plasma glucose levels. systolic blood pressure, diastolic blood pressure, triglyceride, HDL for the diagnosis of metabolic syndrome were performed before chemotherapy and 6 months after the start of chemotherapy.
Results
In total, 256 patients met the inclusion criteria and were included in analysis. The incidence of newly diagnosis metabolic syndrome was 17.5% (45 patients) after chemotherapy. The incidence of newly diagnosis diabetes and hypertension was 5.8% (15 patients), 26.2% (67 patients) after 6 months follow up. The mean metabolic syndrome score was 1.4 (range : 0-4) after chemotherapy. Multivariate analysis showed significant association of the incidence of streroid induced metabolic syndrome with BMI ≥ 25 (OR = 3.497, 95% CI = 1.064 – 11.494, p = 0.039) and colorectal cancer (OR = 0.088, 95% CI = 0.010-0.731, p = 0.024).
Conclusions
The incidence of steroid-induced metabolic syndrome after antiemetic dexamethasone therapy was high (17.4%). Therefore, we suggested that carefully measure glucose as well as LDL, triglyceride, blood pressure during antiemetic dexamethasone therapy.

eP029

THE EFFECT OF (HIGHLY OR MODERATELY EMETOGENIC CHEMOTHERAPY) ON PATIENTS WORK PRODUCTIVITY AND ACTIVITY IMPAIRMENT TAWAM HOSPITAL EXPERIENCE

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Introduction
Chemotherapy-induced nausea and vomiting (CINV) are major adverse effects of cancer chemotherapy. We compared the impact of acute (during the first 24 hours postchemotherapy) and delayed (days 2 through 5 postchemotherapy) CINV on patients' Work Productivity and Activity Impairment after highly or moderately emetogenic chemotherapy (HEC and MEC, respectively).
Methods
This prospective, single centre experience, 50 patients from infusion centre oncology practices enrolled; 50 patients (35 HEC; 15 MEC) completed 100 % of instrument items. The (WPAI:NV) validated instrument to assess Work Productivity and Activity Impairment and the Multinational Association of Supportive Care in Cancer (MASCC) Antiemesis Tool (MAT) validated instrument to assess the degree and number of nausea and vomiting on day one chemotherapy and on day 4 were used.
Results
A total of 50 patients were assessable (35 HEC patients, 15 MEC patients). Emesis was reported by 36.4% of patients (13.2% acute, 32.5% delayed) and nausea by 59.7% (36.2% acute, 54.3% delayed). Among all patients, the nausea score was significantly lower than the vomiting score (50.0 and 55.3, respectively; P = .0097). And 9 (18%) patients reported a health care visit for CINV during the 5 days following chemotherapy. Thirty seven % of all patients reported reduced daily functioning and of those with poorly managed CINV and about 15% reported a significant impact on daily functioning.

Conclusions
CINV continues to adversely affect patients' Daily living and work productivity despite antiemetic therapy, and even in the subgroup of patients who do not experience nausea and vomiting during the first 24 hours.

eP030
A MULTICENTER PROSPECTIVE STUDY ON THE EFFICACY AND SAFETY OF DENOSUMAB IN GASTROINTESTINAL CANCER PATIENTS RECEIVING SHORT-TERM PERIODIC STEROID PREMEDICATION FOR PREVENTION OF CINV. (ESPRESSO-02/HGCSG1602)

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Introduction
We previously reported that short-term periodic premedication of glucocorticoids (GCs) used with chemotherapy for gastrointestinal cancer (GIC) caused the reduction of bone mineral densities (BMD) (ESPRESSO-01). We conducted this study to evaluate the efficacy and safety of denosumab for prevention of chemotherapy-induced BMD decreasing.
Methods
The eligibility criteria were as the follows: 1) Histologically confirmed GIC. ; 2) A schedules of periodical steroid administration as a premedication of chemotherapy that was weekly, biweekly, and triweekly. ; 3) High risk patient with steroid induced secondary osteoporosis. ; 4) No prior treatment for osteoporosis. The dose of denosumab is 60mg administered as a single subcutaneous injection within a week before the induction of chemotherapy. The primary endpoint is to investigate the BMD change on lumbar spine between baseline and 16 weeks after induction of chemotherapy.
Results
From April 2017 to Feb 2018, 49 cases were enrolled. Two patients did not meet the inclusion criteria. One patient died before treatment and one patient refused just after enrollment. One case was not measured BMD on baseline and four patients were not measured BMD on 16 weeks such as refusal, discontinuation of treatment, and death. In 30 patients (71.4 % of FAS), the levels of BMD at 16w were significantly increase compared with baseline and the average percent change of BMD of lumbar spine was +2.772% (n=42, 95% CI: 1.350% to 4.195%, p<0.0001). No one suffered any bone fraction in FAS population.
Conclusions
We found that denosumab administration could prevent the reduction of BMD and bone fraction.

eP031
ANALYSIS OF RISK FACTORS AND TREATMENT OUTCOMES OF OSTEONECROSIS OF THE JAW IN CANCER PATIENTS RECEIVING ANTI-RESORPTIVES: AUDIT OF CASES

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Introduction
Osteonecrosis of the jaw (ONJ) is a serious side effect of antiresorptive drugs namely, bisphophonates, denosumab. Risk factors for MRONJ are the potency and duration of antiresorptives, dentoalveolar surgery. Other treatments, such as corticosteroids, immunosuppressors and hormone therapy, may also increase the risk of MRONJ.
Methods
Subjects with proved malignant disease and bony metastases receiving antiresorptives were accrued. These patients were observed in two groups.
Group 1: Patients, referred prior to the initiation of anti resorptive treatment.
Group 2: Patient referred after initiation of antiresorptives.
These patient's dental status, symptoms were recorded. Patients were observed at six monthly interval. In case of oral complaints, indicated treatment was rendered.
Demographic details, and the details of antiresorptive drugs, dental status and were recorded. At every follow up visit the drug details, disease, and oral status were noted. The calcium levels and presence of any skeletal related events, osteonecrosis of jaw (staging and treatment) were recorded.
Results
Details of Age, gender, occupation, socioeconomic status, education, general health, medical history, diet history, tumor site, TNM classification, tumor stage, antiresorptive drugs and dental status, were noted. The calcium levels and presence of any skeletal related events, osteonecrosis of jaw (staging and treatmentwere recorded. Data will be analyzed using descriptive statistic using SPSS software version 20.0
Conclusions
Ongoing study. Results of this study will be presented

eP032
COST ANALYSIS OF BONE FRACTURE IN COLORECTAL CANCER PATIENTS RECEIVING CHEMOTHERAPY.

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Introduction
Although bone health has gained increasing attention in gastrointestinal cancer care, there is few data of assessing the economical impact of fracture. We investigated the cost caused by fracture in colorectal cancer patients who had received chemotherapy.
Methods
We retrospectively analyzed the cost of fracture in colorectal cancer patients from January 2015 to December 2018, reviewing the medical fee bill of health insurance.
Results
Fracture events were detected in 18 patients. Four patients were not able to follow due to the changing hospital for several reasons (14 patients were the full analysis set). Patient characteristics were as follows: median age 70.6 (range 52-85), female/male 9/5, adjuvant/non-adjuvant 6/8, vertebral/hip/pelvic/other fractures 5/2/2/5, fall/osteoporosis/others 7/4/3. The average cost for a month just after fracture was 213,000 Japanese Yen (JPY), or 1,930 United States Dollar (USD). In two patients (14.3% of FAS), hip arthroplasty was done and the average cost for a month in these two cases was 1,280,000 JPY (11,600 USD). There was a significant correlation between hip fracture and surgery (p = 0.011). The cost of hip fracture was significantly higher than that of other fractures (p = 0.026). There was no difference in survival time after fracture between hip and non-hip fracture (p = 0.093).
Conclusions
We found that hip fracture would not affect survival but it was required large medical expenses, which worsened the financial burden associated

with cancer care. Therefore, it is necessary to be careful of hip fracture in colorectal cancer patients.

eP033
MULTI CENTRIC EXPERIENCE OF MANAGEMENT OF BONY METASTASES DUE TO VARIOUS MALIGNANCIES

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Introduction
Bone metastases one of the most common presentation of various malignancies and typically associated with a short-term prognosis in cancer patients. These patients primarily visit the clinics with complain of pain with poor quality of life and functional disability.
Methods
To analyze the demographics, treatment profile and survival of cases treated in different centers combined. A total of 500 patients with symptomatic bone metastases were studied retrospectively over the period of 4 years from 2013 to 2017.
Results
The median age of presentation was 50 years. The most common primary cancer associated with bone metastasis were prostate (32%), breast (35%) and lung (30%). Almost 75% cases of bone metastasis in female patients encountered due to breast followed by cervix and lung. The predominant reason for clinical presentation was bony and/or neuropathic pain (70%), followed by pathological fracture (20%), including spinal cord compression and fracture impending associated with or without soft tissue mass (10%). Out of 410, 30% had synchronous visceral metastasis to single or multiple sites like brain, lung and liver. 90% cases received palliative radiation with multiple radiation dosing schedules, decided a per the patient's general conditions. The median survival observed was 12-60 months in prostate, 7-15 months in lung; 12-30 months in breast cancer and 20 months in thyroid.
Conclusions
80% patients had symptomatic improvement with continuous pain management, 90% of patients had improved QOL. Overall bone metastases from primary cancers have poor survival but it is still possible to maintain a good quality of life with prompt diagnosis and proper symptomatic management.

eP034
HIGH-DOSE VITAMIN D SUPPLEMENTATION AND EXERCISE FOR CANCER-TREATMENT-INDUCED BONE LOSS IN BREAST CANCER PATIENTS ON AROMATASE INHIBITORS: A PHASE II RCT

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Introduction
Cancer-treatment-induced bone loss (CTIBL) is a side effect of aromatase inhibitors (AIs) andcan result in osteoporotic fractures. This RCT collected data on the feasibility, safety, and preliminary efficacy of high-dose VITD (with/without exercise) on bone mineral density (BMD) versus the recommended daily allowance (RDA).
Methods
Non-metastatic breast cancer patients starting AIs with low VITD (<32 ng/ml) were randomized 1:1:1 into 3 arms: 1) placebo 2) high-dose VITD (50,000 IU/week) or 3) high-dose VITD + Exercise for Cancer Patients (EXCAP): a home-based, personalized walking and resistance band training program for 24 weeks. All subjects received the RDA of VITD 600 IU/day. Serum VITD and calcium levels were assessed at baseline, weeks 6, 12, 18, and 24. BMD was assessed at the hip via DXA at baseline and week 24.
Results
Of the 116 subjects randomized (mean age=60; 94% white; mean VITD=24.6 ng/mL), 90 provided evaluable data. ANCOVA showed significant between-group differences on final VITD (high-dose=63.6 vs high-dose + EXCAP=60.3 vs placebo=32.0 ng/mL; $p<0.01$) but none in calcium (high-dose=9.4 vs high-dose + EXCAP=9.5 vs placebo=9.4 ng/mL; $p=0.78$). The placebo group lost a significant amount of hip BMD (−1.7%; $p<0.01$) while BMD was maintained in the high-dose (−0.1%; $p=0.77$) and high-dose + EXCAP (−0.2%; $p=0.74$) groups resulting in significant between-group differences for high-dose + EXCAP vs placebo ($p=0.04$) and high-dose vs placebo ($p=0.05$).
Conclusions
Our novel high-dose VITD and exercise intervention significantly reduced CTIBL in breast cancer patients while demonstrating safety and feasibility. A phase III RCT is needed to confirm these findings. Funding: NCI-K07CA168911

eP035
MEDICATION- RELATED OSTEONECROSIS OF JAWS (MRONJ): A CLINICO-RADIOLOGICAL ANALYSIS

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Introduction
Medication – Related Osteonecrosis of Jaw (MRONJ) is still being an unsolved problem in dental clinics. Therefore, it is important to assess clinical and radiological features that could help the clinician identify the risk of MRONJ. The objectives of the study was to assess how dependable clinical and radiological features are in diagnosis and follow up of MRONJ.
Methods
Fifty consecutive patients of a surgeon between December 2015-March 2018 with the risk of MRONJ were evaluated. Clinical examinations included soft and hard tissue of oral cavity along with cervical lymph nodes and radiological features of bone sclerosis, bone sequestration, cortical surface irregularity, osteolytic changes, persistant extraction sockets and periostal response were also screened by cone beam computed tomography (CBCT). The clinical presentation, radiological features were correlated with the diagnosis and follow up of MRONJ suspected cases.
Results
Total of 50 patients (39 female and 11 male) with mean age 62,28 were evaluated. 64% bone sclerosis, 64% cortical surface irregularity, 64% osteolytic changes and 36% bone sequestration were detected with correlation of high prevalence exposed bone and purulence exudation. 22% persistent extraction socket and 20% periosteal reaction were more prone to have silent clinic appearance.
Conclusions
CBCT has becoming popular in recent years for the imaging of MRONJ. Easy and inexpensive access to 3-dimensional images of bone structures of very high resolution and lower exposure to radiation when compared to computed tomography are the main advantages of CBCT and many signs of MRONJ could be screened and monitored for long time follow up.

eP036
EFFICACY AND SAFETY OF PULSED RADIOFREQUENCY AND STEROID INJECTION FOR INTERCOSTOBRACHIAL NEURALGIA IN POSTMASTECTOMY PAIN SYNDROME- A CLINICAL TRIAL

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Introduction
Breast cancer is a common neoplastic tumor in women, and the postmastectomy pain syndrome has been reported frequently after surgical treatment. The injury of the intercostobrachial nerve is considered the major cause of this type of pain.
Purpose
Evaluation of efficacy and safety of pulsed radiofrequency (PRF) and steroid injection on the 2nd and 3rd thoracic (T2 and T3) dorsal root ganglions (DRGs) for intercostobrachial neuralgia (ICBN) postmastectomy.
Methods
This study was conducted on 100 patients with ICBN postmastectomy. The PRF waves were applied for 120 s twice on T2 and T3 DRGs then 1 ml of 4 mg dexamethasone and 1 ml of bupivacaine 0.25% were injected at each level then the technique was repeated three times 1 week apart for each patient.
Results
After 6 months from the latest intervention, the mean of visual analog scale dropped from 7.48 to 4.7 ($P = 0.005712$) and the mean of the quality of life scale improved to 6.88 after being 4.66 ($P < 0.00001$) before the intervention and 64.68% of the patients decided that they would certainly repeat the procedure if they could go back in time and 66.64% would certainly recommend the same procedure to a family member. The analgesics consumption decreased mainly in the 1st month but increased again after 6 months (not significant). No serious complications were recorded.
Conclusions
PRF and steroid injection on T2 and T3 DRGs assumed an effective and safe method for ICBN postmastectomy treatment.

eP037
ROUTINE USE OF ULTRASONOGRAPHY IN PREDICTION OF PAEDIATRIC ENDOTRACHEAL TUBE SIZE PREOPERATIVELY.

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Introduction
Endotracheal intubation is a crucial skill in anaesthesia. Uncuffed paediatric endotracheal tube (ETT) size can be calculated by various methods like age-based formula or by using ultrasound to measure minimal transverse subglottic diameter (MTSD). This study aimed to compare both age-based formula and ultrasound to assess the advantage of routine use of ultrasound to determine paediatric ETT size.
Methods
Forty children of 2-10 years of age. ASA class ≤ II, Mallampati airway classes I and II, scheduled for surgery away from the head and neck were included. Uncuffed ETT size for each child was calculated using age-based formula. After induction of balanced general anaesthesia an ultrasound was done to measure MTSD and an endotracheal tube was selected accordingly. After intubation an air leak test was done and the ETT was accordingly changed (if needed).
Results
ETT size by age-based formula strongly correlated with the size measured by ultrasound (Pearson correlation 0.913; P <0.001). The percentage of the need to change endotracheal tube according to the leak test was only 7.5%.
Conclusions
The ETT size calculation was similar for both age-based formula and ultrasound. So, we could not justify the routine use of ultrasound for calculating ETT size for intubation in paediatric patients.

eP038
BARRIERS AND TRENDS IN CANCER PATIENTS' PAIN MANAGEMENT IN QATAR: A RANDOMIZED COHORT PROSPECTIVE STUDY

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Introduction
Up to 70% of cancer-patients experience pain during the course of illness
Physicians are facing different challenges to accurately assess pain
NCCCR treating-physicians may prescribe analgesics to their patients or refer them to the Pain Management-Service (PMS) based on their evaluation or as requested by patients
This study will explore the factors which might lead to under-treatment of cancer-pain in Qatar, it will focus on cancer-patients' pain management-satisfaction and PMS-awareness
Methods
we evaluated patients-perception via a validated Questionnaire (SF-MPQ-2-Arabic & English) & structured-interview by outpatient Pharmacists at a single point of time, to assess patients' awareness towards PMS, if they are receiving pain medications, experiencing any pain, pain-severity, and patients' level of satisfaction
A sample of 400 patients was randomly selected from cancer-population visiting NCCCR-Pharmacy over a specific-period of time. Participants were consented & interviewed
Results
400 patients agreed to participate; the median-age was 50
Male:Female ratio was 3:7
61% (245/400) of participants were not aware of the existence of the PMS
20% (78/400) were aware and followed by PMS, with satisfaction rate of 76% (59/78)
69% (276/400) were on pain-medications, only 70% (191/276) were satisfied
from the satisfied-patients, 57% (109/191) rated their pain as 4-10 at the time of interview (ATI)

In the 31% (124/400) that were not taking any pain medications; 77% (96/124) didn't know about the PMS, 44% (55/124) had 4-10 pain severity (ATI)

Conclusions

Factors leading to undertreating of cancer-pain: unawareness of the PMS existence, pain treatment by unspecialized-physicians, and patients-reluctance to express their pain

Thus, raising patients' awareness and standardizing the referral-criteria can improve pain-control and QoL

eP039

BARRIERS AND TRENDS IN CANCER PATIENTS' REFERRALS TO PAIN MANAGEMENT IN QATAR: A RANDOMIZED COHORT PROSPECTIVE STUDY

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Introduction

Studies showed that 40-50% of cancer patients receive insufficient analgesia, beside the challenges to accurately assess pain

In NCCCR, the treating primary physicians (PP) may prescribe analgesics to their patients or refer them to the Pain-Management Team (PMT), based on clinical evaluation or as requested by patients

This study will address the clinical concerns of PP, which may lead to refer the patients to PMT, moreover the clinical judgement of PMT on the referred-cases whether they need to be refereed or not

Methods

PMT is going to assess the referred-patient to their clinics according to pain-assessment methods, any unnecessary-referral will be documented based on the following

If the patient;

- was referred by hematologist/oncologist
- required specialized-treatment, urgent treatment / prescription, further consultation by PMT
- could be managed by PP

Results

195 patients were newly referred to the pain clinic during the period from March, 8th till August, 31st 2018 12% (23/195) were deemed unnecessary-referrals based on PMT assessment, 43% (10/23) out of them were hematology-patients, while 57% (13/23) were oncology

The majority was for breast-cancer & sickle-cell disease with 35% for each

According to the PMT, 61% {14/23 (95% CI 40.79% to 77.84 %)} considered unnecessary referrals due to improper basic pain assessment & management by PP, while 30% {7/23 (95%CI 15.60 % to 50.87%)} asked for REFILL medications.

Conclusions

There is 12% unnecessary referrals to PMT, which needs improvement via development of a definite referral-criteria to PMT PP should be encouraged to provide basic pain-treatment, to consider multidisciplinary-management with appropriate coordination for better improvements in patients' QOL

eP040

OXIDATIVE STRESS AND ANTI-OXIDANTS IN PRE AND POST-OPERATIVE CASES OF BREAST CARCINOMA

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Introduction

Breast cancer is one of the most common types of cancer, which accounts for highest rate of morbidity and mortality in women. One of the mechanisms of breast cancer is the oxidative stress, which plays a crucial role in its pathogenesis. The increased production and ineffective scavenging of oxidants may play a crucial role in tissue damage leading to cancer.

Methods

This study included 50 control volunteers, 50 patients with breast cancer, and 50 patients with post-operative breast cancer. Patients with pre-operative cancer were clinically and histopathologically diagnosed for breast carcinoma with stage 0, not having therapeutic history. The control 50 healthy female volunteers had the same socio-economic status, and no history of any cancer. After obtaining consent, venous blood was collected from the volunteers by vein puncture using sterile disposable syringe and needle. The levels of MDA, NO, GSH, and activities of RBC-SOD, NOS, copper, zinc GPx, CAT, and vitamins A, C, and E metabolites were measured in the sera of each group.

Results

The activities of RBC-SOD and the levels of MDA, NO, as well as the NOS were higher in the sera of patients with breast cancer as compared with the controls. However, the levels of GSH and vitamins A, C, and E, also the activities of copper and zinc GPx and CAT were decreased in patients.

Conclusions

Patients with higher levels of MDA showed deficiencies of antioxidants and trace elements in the serum. A poor dietary antioxidant and high oxidant are associated with the risk of breast cancer.

eP041

ROLE OF PALLIATIVE RADIOTHERAPY IN BONE METASTASIS IN PATIENTS WITH CANCER IN GANJAVIAN HOSPITAL

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Introduction

The management of painful bone metastases requires multidisciplinary care, with external beam radiation therapy (EBRT) providing relief that is effective and time efficient.

Methods
Between 1.6.2012 and 1.6.2013 a total of 48 patients, 33 patients with all Bone metastatic cancers esp. Breast and Prostate cancer was 11 males and 37 females with an average age of 38 years (minimum 27 and maximum 79 years). We reviewed the literature focusing on studies investigating the efficacy of hypo fractionated radiotherapy for bone metastases. We also addressed the problem of treating multiple skeletal lesions with irradiation
Results
External beam irradiation that our patients treated in Ahwaz center and other radiotherapeutics centers achieves pain palliation in more than 75% of patients with bone metastases, even with EBRT down to a single-dose administration. The results of exclusive radiotherapy in the cord compression syndrome depend on a prompt diagnosis, patient presentation and the intrinsic radiosensitivity of tumor cells in three patients. Palsy can always be avoided in these patients.
Conclusions
In our study the efficacy of external beam irradiation in the palliation of bone metastasis-related symptoms is confirmed by this study, even with short treatments and single-dose administrations. This is important for both patient expectations and the necessity for improved resource allocation with reference to the territorial distribution and waiting lists of radiotherapy centers. The issue of their efficacy in combination with antiblastic drugs (Bisphosphonates drugs such as Zoledronic acid) and/or external beam irradiation (EBRT) remains open and will be clarified only with further randomized clinical trials.

ePO42
A NURSING EXPERIENCE OF THE BRAIN TUMOR WITH METASTASIS PATIENT CARING BY OREM THEORY

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Introduction
This article describes the nursing experience of a 58-year-old patient who suffering brain tumor with metastasis and being hospitalized because of fever and consious change. During July 12 to 30, the writer collected the data by observation, assessed the health problems of patient by using Orem self-care theory
Methods
Four major health problems have been found: inactive elimination of the respiratory passages, less than physically needed nutrition, self-care deficit and hopelessness. In addition to improving physical discomfort by giving the appropriate measure of caring for the case, provide the training techniques of sputum clearance to implement correctly. The medical team to jointly develop the use of gastrostomy tube feeding care plan and sustained attention training to assist them in getting enough nutrition needs. Supply the follow–up care and support system according to the individual case, show the concern emotion, encourage patient to express his feelings so that patient can participate the treatment actively, reach self–care ability,
Results
Through these approaches, the patient learned to release stress, and to express his feelings, so that he could adapt to his current life, changed as it was by the illnesses, and face the impact of those illnesses with a positive attitude and reduce the feeling of hopelessness
Conclusions
We herein address this nursing care experience to provide deeper understanding of the similar cases for all nursing colleagues, thereby enhancing the quality of care in the future. The objective of this case report was to share the nursing experience with clinical nursing staff caring for patients.

ePO43
EXPLORING THE FEASIBILITY AND ACCEPTABILITY OF A HOME-BASED, SMART HEALTH SENSING SYSTEM TO IMPROVE CANCER PAIN MANAGEMENT FOR PATIENTS AND CAREGIVERS

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Introduction
Technology can support safe and effective management of cancer pain in the home environment. We tested a package of wearable and environmental sensors, **B**ehavioral and **E**nvironmental **S**ensing and **I**ntervention for **C**ancer (BESI-C) to: 1) understand the contextual factors that predict and influence the experience of pain; and 2) explore the dyadic effect between patient and caregiver experiences related to cancer pain.
Methods
Patient-family caregiver dyads were recruited from an outpatient oncology palliative care clinic. In Phase I, interviews explored: 1) challenges of managing cancer pain at home; 2) contextual variables relevant to cancer pain; and 3) design feedback regarding BESI-C components. Responses were analyzed using qualitative content analysis. In Phase II, in-home BESI-C deployments explored: 1) fidelity of data capture; 2) system utilization; and 3) dyad experiences via in-person de-briefings and correlation of ground truth with recorded sensor data.
Results
In Phase I, dyads validated: 1) pain challenges such as impact on sleep, unpredictability, and medication concerns; 2) variables that influence pain related to medication, wellness, interactions, and environment; and 3) high receptivity to the BESI-C system. Phase II deployments iteratively addressed issues related to human-computer interaction, participant burden, and data capture. Preliminary analysis shows the ability of BESI-C to correlate activity/mobility, environmental and ecological momentary assessment data with marked pain events.
Conclusions
Dyads are open to novel approaches to managing pain in the home. Significant potential exists for BESI-C to inform and deliver personalized interventions to patients and caregivers, particularly those in underserved areas or enrolled in home hospice programs.

ePO44
EXPERIENCE AND KNOWLEDGE OF PAIN MANAGEMENT IN CANCER OUTPATIENTS: IMPLICATIONS FOR PRACTICE

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Introduction
In spite of the existing practice guidelines and knowledge for effective pain management, a big proportion of cancer patients are still treated inadequately for pain. Under-treatment of pain is particular important for oncology outpatients, because studies have shown that these patients are often not fully assessed for pain.
Methods
This is a prospective, cross-sectional study of cancer patients who were seen at outpatient clinics in a cancer center in Taipei, Taiwan. Brief Pain Inventory (BPI), Pain Management Index (PMI), and Morisky

Medication Adherence Scale (MMAS) were administered to measure pain intensity, pain management quality, experience and adherence for pain medication at home.

Results

Sixty patients with advanced cancer diseases participated in this study. About 60% of these patients' report of the worst pain in 24 hours was moderate and severe. The average pain interference total score measured by BPI was 24.5+17.3 (range from 0 to 63); in which subscale scores the average affective interference score is higher than activity interference score (11.5+9.8 vs. 9.8+7.4). Bivariate analysis found that patients' PMI was directly related to average pain severity and pain interference scores. About 85% of these patients were in the category of low and moderate pain-medication adherence measured by the MMAS.

Conclusions

Cancer outpatients have to manage their pain at home on a daily basis. Our results identify the need to incorporate patient-reported outcomes in the assessment and treatment of cancer pain in the outpatient settings. The results also highlight the importance of self-management support to enable patients to manage pain at home.

eP045
DIOCAT PROJECT: QUALITY IN THE MANAGEMENT OF BREAKTHROUGH CANCER PAIN PATIENTS

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Introduction

Breakthrough Cancer Pain (BTcP) is one of the symptoms lowering most the patients' quality of life. Although its pharmacological treatment has been improved in the last years, quality criteria on its clinical management are still missing. The aim of this study was to reach a consensus agreement on BTcP clinical management quality indicators.

Methods

A two round modified Delphi method was used to assess the opinion of 120 representative Spanish experts on BTcP from Pain Clinic, Palliative Care, Clinical Oncology and Radiation Oncology. It was used an on-line survey using a questionnaire with 75 questions which cover 4 dimensions (diagnostic, treatment, patient empowerment and clinical practice). Participants were asked to score each item on a 1 to 9-point Likert scale: median score ≤ 3 meaning large disagreement; ≥ 7, large agreement. Items scored as ≥ 7 (with an interquantile range < 4) by at least 66.7% of participants, were stablished as "agreement reached". Rest of items were selected for the next round.

Results

A total of 115 (96%) experts agreed to participate at the 1st round; Only 14 (18,7%) items needed a 2nd round in which participated 81 (67.5%) experts. After the 2nd round 6 items remained without agreement, all of them regarding pharmacologic treatment.

Conclusions

A wide agreement in the quality indicators that should be implemented in clinical management of BTcP was reached among Spanish experts. Its applicability should improve the management of BTcP.

eP046
EGFR-INHIBITION FOR NEUROPATHIC CANCER PAIN: PROMISING INITIAL RESULTS OF A PROSPECTIVE OBSERVATIONAL STUDY

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Introduction

Malignant invasion of peripheral nerves may lead to severe, treatment-refractory neuropathic cancer pain (NCP). Novel treatment alternatives are urgently needed to palliate this despairing condition. Based on repeated observation of rapid relief of NCP after single doses of intravenous epidermal growth factor receptor inhibitor (EGFR-I), we have successfully treated patients with severe, treatment-refractory NCP with off-label EGFR-Is. Pain research is complicated by endpoint subjectivity. Patients with advanced cancer are heterogeneous, with complex, fluctuating clinical pictures, hampering feasibility of standard drug-trial procedures. The aims of the study are to further understanding of the EGFR-I/NCP association and facilitate planning drug trials.

Methods

Investigator-initiated, explorative, prospective, systematic observational study of patients with cancer and neuropathy receiving any humanEGFR-I. A variety of evaluation tools assess patients' symptoms and test feasibility for this population. Choice of assessment method is based on what is ethical, feasible and clinically relevant for each patient.

Results

The study is ongoing. 16 patients have been included since 01.2017. Preliminary findings for the 10 patients with NCP treated with an EGFR-I (panitumumab) are presented in the table. Indication for treatment was refractory NCP in nine patients, and intolerance to analgesics in one.

Patient characteristics	Pre-treatment	Post-treatment					Feasibility issues: Major hurdles for a conventional drug trial
Age/gender Underlying lesion Functional status	Best possible capture of patient-reported "worst NCP last 24 hours" on a 0-10 NRS		Was secondary target met?	Patients' satisfaction with treatment*	Physician assessment: Clinical benefit / risk	Duration of treatment[#]	
	Within 7 days of the 1st treatment	During the first 14 days after the 1st treatment					
63 F **Gluteal sarcoma** ECOG 3	**8** single measurement at treatment start	ND	ND	ND	**No beneficial effect** No toxicity	Single dose	1,2,3,4
73 M **Rectal cancer** ECOG 2	**6.7** average of 7 consecutive days	ND	ND	ND	**Significant benefit** No toxicity	94 days[§]	2
73 M **Colon cancer** ECOG 1	**6.6** average of 7 consecutive days	**3.7** average of 7 consecutive days	**Goal met** Better sleep	**Better**	**Significant benefit** Grade 2 skin toxicity	49 days	*None: potential drug trial participant*
31 F **Cervical cancer** ECOG 1	**10** single measurement at treatment start	**1** single measurement after 2 days	**Goal met** Reduce analgesics	**Much better**	**Significant benefit** Grade 1 skin toxicity	50 days[§]	1,4
70 F **Pancreatic cancer** ECOG 4	**10** single measurement at treatment start	**0** average of 3 days	**Not met** Reduce analgesics	ND	**Significant benefit** No toxicity	6 days [§]	1, 4, 5, 6, 7
59 M **Lung cancer** ECOG 3	**10** single measurement at treatment start	**6.7** average of 7 consecutive days	**Goal met** Better sleep	**Much better**	**Significant benefit** Grade 1 skin toxicity	121 days[§]	1, 4, 5
89 F **Uterine cancer** ECOG 3	**9** single measurement at treatment start	**0** average of 4 nonconsecutive days	**Goal met** Reduce analgesics	**Much better**	**Significant benefit** No toxicity	Single dose (bridge to effect of palliative radiotherapy)	1, 4, 5
68 M **Lung cancer** ECOG 4	**10** single measurement at treatment start	**5.7** average of 6 nonconsecutive days	**Goal met** Get out of bed	**Much better**	**Significant benefit** No toxicity	40 days[§]	1, 3, 5, 6
41 F **Pancreatic cancer** ECOG 3	**10** single measurement at treatment start	**3.25** average of 2 consecutive days	**Not met** Reduce analgesics	**No change**	**No beneficial effect** Grade 1 skin toxicity	Single dose	1, 4, 5
72 M **Rectal cancer** ECOG 2	**10** single measurement at treatment start	**3** single measurement after 5 days	**Not met** Walk without crutches	**Much better**	**Significant benefit** Grade 2 skin toxicity	Ongoing	1, 8

F = female; M = male; ECOG = Eastern Cooperative Oncology Group; NRS = numeric rating scale; ND = not done; * = according to the Patient Global Impression of Change scale; # = indicates until death

Hurdles for a conventional drug trial:
1. Short baseline
2. Missing data
3. Rapidly progressive disease
4. Confounding treatment
5. Mixed pain/difficult to differentiate neuropathic pain
6. Delirium/somnolence
7. Short survival
8. Poor compliance with follow-up

Conclusions

Preliminary findings (including 8/10 clinical responders) strongly support EGFR-Is' potential to be of significant benefit to a range of patients with treatment refractory NCP, compellingly warranting further study.

Findings also reinforce the difficulty of using conventional drug trial endpoints and designs in this population. Flexibility and innovative research methods must therefore be considered for pivotal trials.

eP047
HERICIUM ERINACEUS MYCELIUM ATTENUATES MICROGLIA MIGRATION AND CHEMOTAXIS: POTENTIAL AS AN ANALGESIC ADJUVANT IN CLINICAL CANCER PAIN MANAGEMENT

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Introduction
Pain relief is vital to the treatment of cancer. Microglia play important roles in nociceptive signal transduction. Activated microglia seems to be a shared mechanism in neuropathological pain and cancer pain, since it was previously found that pharmacological attenuation of microglia activation provided satisfactory management in both cases.
Methods
In the present study, we investigated the effect of 100 ng Hericium erinaceus mycelium on the morphine-induced activation BV2 microglia cells.
Results
Our results showed that 1 μM morphine enhanced microglia activation and chemotaxis, induced increasing of histone deacetylase 6 (HDAC6) expression, heat shock protein 90 (HSP90) cleavage and deacetylation of HSP90. Pretreatment with 100 ng Hericium erinaceus mycelium not only inhibited morphine-evoked microglia activation and chemotaxis, but also prevented HSP90 fragmentation and deacetylation by suppressing HDAC6 expression.
Conclusions
We suggest that, Hericium erinaceus mycelium inhibits microglia activation can be used as an adjuvant in clinical cancer pain management for patients who need long-term morphine treatment.

eP048
THE EFFECTS OF CELIAC PLEXUS NEUROLYSIS FOR THE TREATMENT OF INTRA-ABDOMINAL CANCER PAIN

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Introduction
Pancreatic cancer and other malignant tumors of the upper abdominal organs often induce pain that is difficult to control. Celiac plexus neurolysis is a procedure often performed to provide relief to patients suffering from pain related to upper abdominal cancer. However, various studies have reported conflicting results about its effect. Therefore, the present study investigated the effects of celiac plexus neurolysis on upper abdominal cancer pain.
Methods
Medical records of patients who underwent celiac plexus neurolysis for upper abdominal cancer at the hospital were retrospectively analyzed. The change in pain among patients after the procedure was evaluated with the numeric rating scale (NRS), and the use of opioid analgesics before and after the procedure, as well as complications from the procedure were investigated.
Results
A total of 99 patients underwent celiac plexus neurolysis for abdominal cancer pain. The NRS scores at 2, 4, 8, and 12 weeks post-procedure were significantly reduced compared to before the procedure ($p < 0.05$). The post-procedural use of opioid analgesics was also significantly decreased ($p < 0.05$). Mild adverse events (moderate diarrhea and mild hypotension) were frequent (n = 28); no serious complications were reported and no procedure-related deaths were observed.
Conclusions
Celiac plexus neurolysis resulted in a decrease in pain and in the use of opioid analgesics in patients experiencing upper abdominal cancer pain, and serious complications after the procedure were rare. These results provide evidence that celiac plexus neurolysis may be useful in the treatment of abdominal cancer pain in a clinical setting.

eP049
HOSPICE CARE FOR AN END STAGE CANCER PATIENT

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Introduction
Hospice care incorporates holistic, team, family, community, and complete care. Hospice care improves the quality of life for the patient and their family and helps the bereavement process. This paper discusses a 52-year-old female end stage stomach cancer patient whose husband could not bear watching her pain and was unsure how to make decisions which lead to feelings of guilt.
Methods
From July 24 to September 13, 2013, Gordon's 11 functional health patterns were used to observe, interview the patient and conduct physical evaluations. Subjective and objective data was collected and it was determined that the patient suffered from chronic pain, activity intolerance, death anxiety, and ineffective health maintenance.
Results
Lymph massages, and hot compresses were used to help relieve pain, alleviate negative feelings, and help the patient cope. The patient's family was taught to use lavender and orange aroma therapy to relieve pain, and alleviate feelings of helplessness. Family was encouraged to participate in daily care routines, such as bathing, changing clothes, and manicure pedicures to maintain a level of comfort.
Conclusions
Care was provided to establish a relationship with the family, supply feelings of trust, safety, and meet physical needs, and listen to the family's distress regarding losing a loved one in order to help the patient accept death and happily live the rest of her life. This nursing experience is shared to serve as a reference when caring for similar patients in the future to improve quality of care and ensure that physical, mental, spiritual, and social care is provided.

eP050
A STUDY OF PHYSIOLOGICAL PARAMETERS TO MEASURE PAIN OBJECTIVELY IN CANCER PATIENTS

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Introduction
Pain is a complex and subjective experience and various subjective scales have been developed to assess pain. Subjective assessment of pain is not accurate most of the times. Measuring pain objectively will help physician use analgesics according to WHO pain ladder and identify patients who misuse opioids.
Methods
This study was carried out on cancer pain patients who were having unbearable pain and were registered at Pain and Palliative Care Clinic in Dr. BRA, Institute Rotary Cancer Hospital, All India Institute of

Medical Science New Delhi (AIIMS), India. Pain was measured using numeric rating scale (NRS). Physiological parameters (heart rate, blood pressure, skin temperature and oxygen saturation) were measured by using B125/B105 monitor on 34 patients both before and after giving analgesics. Galvanic skin response (GSR) and Electroencephalogram (EEG) examination was done using MP-45 BIOPAC system on 15 patients.

Results

The conduction velocity of peripheral sensory nerve of the painful area was high as compared to non-painful area. The blood pressure and heart rate decreased as the NRS score of the patients decreased after analgesics. GSR values were more in patients during pain and lower after giving analgesics. Significant EEG wave changes were seen and relation between pain and EEG was statistically significant.

Conclusions

Physiological parameters can be used to measure pain objectively and in a non-invasive way. Larger sample size with other physiological parameters is being studied to design a pain measuring device which will help physicians in busy clinics to assess and manage cancer pain.

eP051
IS THERE A ROLE FOR COMBINED USE OF GABAPENTIN AND PREGABALIN IN PAIN CONTROL? TOO GOOD TO BE TRUE?

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Introduction

Gabapentin (Neurontin) and Pregabalin (Lyrica) are first and second-generation α2 ligands, respectively, and are both approved for use as adjunctive therapy in pain control.

Their mechanism of action is not yet fully understood, but research has demonstrated promising results. Despite their similarities, they have been used in combination in both clinical and research settings, and have been noted to have a synergistic effect in pain control without concern for clinically significant pharmacokinetic interactions.

Objective

To determine whether there is an evidence to support the combined use of Gabapentin and Pregabalin in clinical settings.

Methods

A MEDLINE and a PubMed search for “Gabapentin and Pregabalin" OR "pain management” AND "combined use" was conducted from 1995 onwards. Only six articles were deemed to be relevant to the objective at hand. They were reviewed, and the relevant points were summarized. Additional sources were added to the literature search by way of being referenced in the article. Articles in languages other than English were excluded, as well as, studies for which no outcomes were reported.

Results

Antagonism of calcium channels in the central nervous system, and antagonism of N-methyl-D-aspartate receptors, have the most supporting evidence for the synergism between Gabapentin and Pregabalin by producing an increased analgesic effect which can be utilized in pain management in refractory cases.

Conclusions

This combined approach can be valuable in pain management by reducing the dose of individual agent, its side effects, and to enhance therapeutic response compared to a single agent in resistant cases.

eP052
CHALLENGES OF CANCER PAIN MANAGEMENT IN DEVELOPING COUNTRIES OBAFEMI AWOLOWO UNIVERSITY TEACHING HOSPITAL

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Introduction

Cancer pain management in developing countries is still a great challenge especially in my center which is a federal government Hospital, many Oncology patients come in at the advanced stages of their disease where pain management and palliative care is essential. The challenge however is that opiods drugs remain most times unavailable and when available it is very expensive beyond the reach of this patients and this happened due to the strict and unfriendly government polices on the importation of opioids analgesia in Nigeria.

Methods

As a team managing cancer we decided to form the Oncology/Palliative Care group which is a multidisciplinary team be held meetings with the management on the need for opioids drugs to be readily available and affordable by patients, thus the pharmacists in our team started producing the oral liquid morphine and an awareness program was done in the hospital for all consultants and Nurses about the availability of oral liquid morphine in the hospital.

Results

We discovered that the quality of life of patients was greatly improved, ww observed better patients management outcome, cancer pain which usually are managed with short acting analgesia are now managed with a potent and long acting opioids and patients with advanced stages of their cancer experienced dying in a more dignified way.

Conclusions

In concluding I believe despite finding ourselves in economic constrain countries like Nigeria as proffesionals we can do so much in alleviating pains experienced by this patients and we can actually provide succor and make the terminal phases of their lives meaningful.

eP053
FREQUENCY AND FACTORS ASSOCIATED WITH IMPROVEMENT IN UNCONTROLLED CANCER PAIN WITHOUT INCREASING OPIOID DAILY DOSE AMONG PATIENTS SEEN BY AN IMPATIENT PALLIATIVE CARE TEAM

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Introduction

Increasing the total opioid dose is the standard approach for uncontrolled cancer pain. Palliative care interventions are multidimensional rather than simply increasing dose. The purpose of this study was to determine the frequency and factors associated with clinically improved pain (CIP) without opioid dose increase among patients referred to our inpatient palliative care (IPC) team.

Methods

We reviewed consecutive patients referred to our IPC team. Eligibility criteria included: 1) taking opioid medication; 2) having ≥ 2 consecutive visits with the IPC team; 3) ESAS pain score ≥ 4 at consultation. Patient demographics, cancer type, opioid prescription (type, route, oral

morphine equivalent daily dose [MEDD]), opioid rotation, psychological consultation, and changes in adjuvant medications (e.g., corticosteroids, benzodiazepines, and neuroleptics) were assessed. Chi-squared, Fisher's exact, and Wilcoxon tests, as well as logistic regression, were applied.

Results

Of the 386 subjects assessed, 300 patients with uncontrolled pain were enrolled. CIP was achieved in 196 (66%) patients. Among those, 67% (131/196) of patients achieved CIP without an increase in MEDD. Factors such as better performance status (P = 0.02), less opioid rotation (P < 0.001), adjuvant medication change (P = 0.03), and higher baseline MEDD (P = 0.02) were associated with CIP without opioid dose increase (Table 1).

Table 1. Univariate and Multivariate Analysis of Predictors of Clinically Pain Improvement Without increase Morphine Equivalent Daily Dose (MEDD)

Variable	Effect	Univariate[1]		Multivariate[2]	
		OR (95% CI)	P-value	OR (95% CI)	P-value
ECOG	0-1 vs. 2-4	2.59 (0.83-8.1)	**0.02**	3.2 (0.96-10.67)	0.06
Rotation	No vs. Yes	4.1 (2.17-7.77)	**< 0.001**	3.79 (1.8-7.89)	**< 0.001**
Adjuvant Medication	Change vs. No Change	1.98 (1.05-3.75)	**0.03**	2.12 (1.01-1.11)	**0.05**
Baseline MEDD	N/A	1.01 (1.00-1.01)	**0.02**	N/A	N/A

Abbreviations: OR, odds ratio; CI, confidence interval; EOCG: Eastern Cooperative Oncology Group performance status; MEDD, morphine equivalent daily dose; N/A, not applicable.
[1]Univariate logistic regression analysis was used to investigate variables as potential predictors of clinically pain improvement without increase MEDD. Variables included Time of data collection, Sex, Race, Martial Status, ECOG (Eastern Cooperative Oncology Group performance status), CAGE (Cut-down, Annoyed, Guilty, Eye-opener questionnaire for alcoholism), ESAS all items (Edmonton System Assessment Scale), Tobacco use, Route and Type of opioids at baseline, Opioid rotation, Adjuvant Changes, Expressive Supportive Counselling, and Psychology Consultation.
[2] Multivariate analysis was performed using the backward method.

Conclusions

Two thirds of patients achieved CIP without MEDD increase, suggesting that multidimensional palliative care intervention is an effective means to improve pain control in opioid tolerant patients without the need of increasing opioid dose.

ePO54
TABLET BASED EXPANDED PAIN ASSESSMENT REVEALS SEVERE FLARES AND END OF DOSE PAIN AT HOME

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Introduction

Cancer pain prevalence is high (52%-77%) and includes pain flares and end of dose failure. Successful pain management requires comprehensive systematic assessment.

Methods

An Expanded Pain Assessment (EPA) was developed into an electronic care planning system (CPS), combining the Brief Pain Inventory with drill down questions about breakthrough pain (BTP). 52 patients with advanced cancer at three sites completed the tablet-based EPA prior to the clinician visit. Results were presented on a dashboard, and the provider and patient collaboratively established a pain care plan. Effectiveness of pain management planning was measured with the Pain Care Quality Survey (PCQS).

Results

Patients were 63% (n=32) female with mean age of 56 (range 20-93). Mean pain scores were 3.13 (scale 1-10); 88% had a pain flare in the last seven days with mean severity of 8.23; 74% of flares lasted > 30 minutes; 80% had end of dose pain. Participants reported incident pain associated with certain activity (70%) as well as insidious pain not associated with activity (70%). 52 patients selected 132 pain descriptors: burning (11), achy (23), stabbing (20), pins and needles (12), cramping (11) radiating (14), intermittent (20), and continuous (21). PCQS mean score was 10.80 (scale 2-12), SD-1.18. Mean satisfaction with tablet-based EPA use was 3.25 (scale 0-4), SD 0.58

Conclusions

Comprehensive pain assessment with an EPA revealed important details that were incorporated into the management plan. Since patients were experiencing severe flares and end of dose pain at home, strategies to engage patients between visits should be evaluated.

eP055
UNDER PRESCRIPTION/DISPENSING OF STEP 3 OPIOIDS IN FRENCH PAINFUL CANCER SURVIVORS: ADVOCACY FOR INTEGRATION OF EARLY PALLIATIVE CARE IN ONCOLOGY.

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Introduction

Chronic pain (CP) is a major concern in cancer survivors. The integrated model of Palliative Care (PC), not limited to end-of-life situations should be enhanced to promote opioids access for painful patients. Doctor's reluctance toward opioids prescription has been ever documented.
This study aims to provide the prevalence of CP among 5-years cancer survivors, and to identify associated factors with opioids prescription focusing on PC access.

Methods

In 2016, 4 174 French cancer survivors were interviewed in the national VICAN survey. We studied factors associated with the prescription of step 2 and step 3 opioids among painful survivors. Multinomial logistic regression were performed using Patient Reported Outcomes, Clinical Reported Outcomes and Medico-administrative data.

Results

A majority of cancer survivors (63.5%) experiences CP. Among them, 27.1 % and 4.2 % have been prescribed at least one step 2 or step 3 opioid respectively and 0.7% accessed PC during the year of the survey. After adjustment for age, gender, medical and self-reported variables, we found that survivors who accessed inpatient PC were more likely to receive step 3 opioids (aOR: 6.00; 95% CI: 1.29, 27.81).

Conclusions

When properly controlled, step 2 and step 3 opioids remain the basis of an effective cancer pain treatment when non-opioid pharmacologic therapy is no more appropriate. The present study reports an under prescription/dispensing of step 3 opioids and a positive relationship between this prescription and PC access. However, PC access remain very marginal in France. Integrating PC in oncology is essential to provide to patients best cancer-related symptom management.

eP056
LONGITUDINAL CANCER PAIN RESPONSE TO ACUPUNCTURE

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Introduction

NCCN cancer pain guidelines include nonpharmacologic acupuncture. However, there are no standards regarding the frequency, duration, and number of acupuncture sessions for pain management. Limited data exist on pain changes following acupuncture longitudinally. The **Purpose** was to determine treatment patterns and acupuncture pain response trajectory in a large, diverse, outpatient cancer population.

Methods

January 2015 to November 2018 data were abstracted. Patients reported *0=no pain* to *10=worst possible pain* before treatment. In patients

reporting pain ≥ 3 at baseline with consecutive sessions within 1 month, clinically-significant pain improvement (≥ 2-point pain score reduction) and one-year effect of acupuncture of pain were assessed. Mean pain scores were estimated with repeated measures linear mixed models with random effects for patient. Least squares linear models regressed model-estimated pain by time, weighted by the inverse of standard errors from the mixed model.

Results

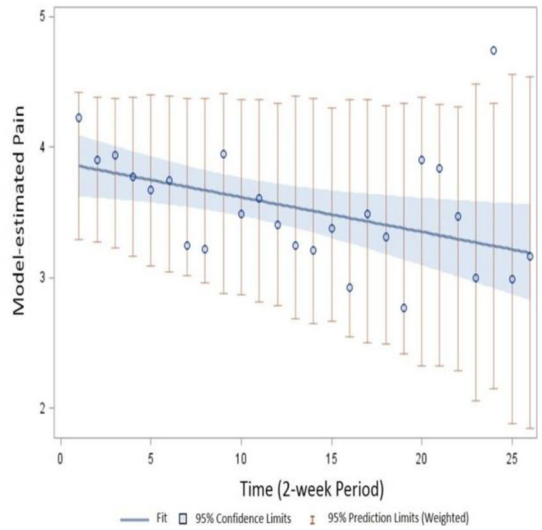
N=784 patients received 4,271 acupuncture sessions. Average number of sessions was 5.4 (range 1-21). 671 (86%) patients had ≥ 2 sessions; average treatment length was 3.7 months, (range 0.1 to 39.4 months). 360 had baseline pain ≥ 3; 218 (61%) achieved clinically significant improvement. In a one-year period, acupuncture was associated with decreased pain of 0.25 points per 2-week treatment period both univariately (p=0.018) and adjusted for cancer treatment (p=0.014).

Table 1. Descriptive Pain Response to Acupuncture Characteristics- January 2015-November 201

	N (%)	# sessions	Mean (Std.)	Median	Mode	Range (min.-max.)
Outcomes in total patient population						
Number of sessions	784 (100%)	4,271	5.4 (5.0)	4	4	1-21
Treatment length (in months)			3.7 (5.8)	1.2	0.7	0.1-39.4
Time between sessions (in days)			21.8 (53.4)	12	7	2-1,051
Number of sessions within specific patient populations						
Patients with baseline pain ≥ 3	360 (46%)	1804	5.0 (3.9)	4	4	2-21
Patients with at least 2 sessions	671 (86%)	4158	6.2 (5.0)	4	4	2-21
Patients with at least 2 sessions less than 1 month apart	585 (75%)	3186	5.4 (4.4)	4	4	2-21

Note: min.=minimum value; max.=maximum value

Figure 1. Weighted Least Squares Fit Plot for Patients with Pain Scores of at least 3 (out of 10) with at least 2 treatments less than 1 month apart



Conclusions

Over 60% of patients reported clinically-significant pain improvement after acupuncture. Across one year, acupuncture was associated with decreasing pain longitudinally. Future research should explore pain response trajectories at other sites including academic and community acupuncture clinics.

eP057

ASSOCIATION BETWEEN PRE-TREATMENT FUSOBACTERIUM NUCLEATUM AND CANCER PAIN AT 6 MONTHS POST-SURGERY IN NEWLY DIAGNOSED COLORECTAL CANCER PATIENTS: RESULTS FROM THE COLOCARE STUDY

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Introduction

Pain is a prevalent, debilitating symptom in more than half of cancer patients. Accumulating evidence suggests a bi-directional relationship between gut microbiota and pain, potentially *via* inflammation. *Fusobacterium nucleatum* (*Fn*), a pro-inflammatory anaerobic bacterium, is frequently detected in colorectal cancer (CRC) patients. We investigated associations between pre-treatment *Fn* and cancer pain at 6-months post-surgery in CRC patients.

Methods

We utilized pre-surgery stool samples collected from 80 prospectively followed, newly diagnosed CRC patients recruited from the German site of the international ColoCare Study. Eligible patients were neo-adjuvant treatment naïve and did not use antibiotics for at least 1 month before stool collection. *Fn* DNA was assessed *via* quantitative real-time polymerase chain reaction. Patients were median split into *Fn*-high (>17.27; n=40) or *Fn*-low (≤17.27; n=40). Cancer pain was assessed using the two pain symptom items from the European Organization for Research and Treatment of Cancer Quality of Life Questionnaire-Core-30 (lower score=lower pain) at pre- and 6-months post-surgery.

Results

At pre-surgery, 47.5% of patients reported any pain. After controlling for pre-surgery cancer pain in ANCOVA, we observed significant increase in mean cancer pain at 6-months post-surgery in the *Fn*-high group *vs*. the *Fn*-low group (24.07 *vs*. 13.44; effect size=0.45; p=0.042), which was maintained even after controlling age, sex, tumor stage and other covariates (29.11 vs. 16.55; effect size=0.53; p=0.029).

Conclusions

These findings suggest that high *Fn* is an independent predictor of cancer pain at 6-months post-surgery in colorectal cancer patients. Further research is needed to confirm and understand the mechanisms of these results. *Funding: NCI U01CA206110.*

eP058

PAIN CORRELATES WITH NAUSEA, VOMITING, CONSTIPATION, ANXIETY, AND DEPRESSION ON ADMISSION TO PALLIATIVE CARE, AND MAY BE A FACTOR PREDICTING THE NEED FOR EXTRA RESOURCES.

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Introduction
Clinical assessment of pain and the accompanying symptoms on the admission day may provide important data for the resources and measures planning, identifying additionally burdensome conditions, and furthermore for disease pathways evaluation.
Methods
A structured questionnaire was worked out and deployed as an attempt to optimize the qualification to palliative care. It included information on general conditions, urgent states, and symptoms developed through the multi-iteration work of an expert team as the mandatory tool for qualification of patients to the palliative care in Poland. Each patient was assessed using this questionnaire on admission.
$P < 0.05$ was assumed for statistical significance.
Results
157 patients were assessed in 5 palliative care centers on the admission day. The average age was 70.5 years (range 32.3-95.8), 50.3% were women. 83.4% of the patients suffered from pain. The mean pain intensity was 1.64 in [0-4] scale and was higher in men ($p=0.022$). The pain intensity was positively correlated with the anxiety-depressive disorder, nausea and vomiting, and constipation, and negatively with age. No correlation between pain and other symptoms was found.
Conclusions
Pain occurrence and its intensity, on the day of admission, especially in men and younger patients, should be considered as the distinguishing factor for patients requiring more resources deployed. It may be an argument for the differentiation of subgroups in the health systems based on the Diagnosis-Related Groups. Additional investigations should be conducted to assess whether successful management of nausea, vomiting, constipation and anxiety-depressive disorder will substantially improve pain control.

eP059
IMPACT OF TREATMENT ON PATIENT-REPORTED PAIN IN EARLY BREAST CANCER PATIENTS RECEIVING ADJUVANT RADIOTHERAPY

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Introduction
Patients who receive radiation treatment (RT) for breast cancer often report pain, which contributes negatively to quality of life (QoL). This study aimed to identify demographic, treatment, and disease characteristics associated with pain using the Edmonton Symptom Assessment Scale (ESAS).
Methods
We identified all patients diagnosed with non-metastatic breast cancer from 2011 Jan-2017 June at the Odette Cancer Centre with at least one ESAS completed pre- and post-RT. Data on systemic treatment, radiation, patient demographics, and disease stage were extracted. To identify factors associated with pain before and after RT and changes in pain, univariate and multivariate general linear regression analysis was conducted. $p<0.05$ was considered statistically significant.
Results
This study included 1222 female patients with a mean age of 59 years old. ESAS was completed on average 28 and 142 days before RT (baseline) and after RT respectively. In multivariable analysis, higher baseline pain scores were associated with recently completing adjuvant chemotherapy and eventual receipt of locoregional or chest wall radiation. Two factors, adjuvant chemotherapy and chest wall radiation were associated with significant reduction in pain score after radiotherapy.
Conclusions
No patient, treatment, or disease characteristics were associated with sustained increase in pain after radiation. Pre-existing pain in patients receiving chest wall radiation or adjuvant chemotherapy tended to reduce following RT completion, while pre-existing pain associated with locoregional RT tended to persist. Therefore, patients who receive locoregional RT should be screened for pain and provided pain management interventions and support when necessary.

eP060
THE NEGATIVE PROGNOSTIC ROLE OF OPIOIDS IN PATIENTS WITH NSCLC TREATED WITH IMMUNOTHERAPY

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Introduction
Opioids seem to interfere with immune response. We analysed the prognostic and predictive impact of opioids in Non Small Cell Lung Cancer (NSCLC) patients treated with immunotherapy.
Methods
We retrospectively collected and analyzed data about NSCLC patients treated with immunotherapy at our institution. Progression free survival (PFS) and overall survival (OS) were estimated using Kaplan-Meier method. A Cox regression model was carried out for univariate and multivariate analyses.
Results
Sixty-six patients were enrolled, 50 male (75,8%) and 16 female (24,2%). Median age was 72 (range 25-88). Thirty-one patients (47%) received opioids at the beginning and/or during immunotherapy. This setting of patients had a poorer prognosis (mOS 5.37 months vs not reached, p = 0,0009; mPFS 3.83 months vs not reached, HR: 4.15, CI 95% 2.22−10.66, p = 0,0001). Performance Status (PS) according to Eastern Cooperative Oncology Group (ECOG) had a prognostic and predictive role (mOS 3.23 months vs not reached, p=0.0059; mPFS of 1.7 vs 3.8 months, p= 0,0089). Sex, age (cut-off 70 years), lymphopenia, PD-L1 expression did not result as prognostic and predictive factors. At multivariate analysis opioids and ECOG-PS > 2 were confirmed as independent negative prognostic factors (p=0.0001). Patients requiring higher opioids doses or opioids switch had a lower survival (OS 4.9 vs 16.5 months; p=0,0030). A trend of worse prognosis was observed in patients receiving morphine (mOS 4.1 vs 8.6 months, p= 0.059) and fentanyl (mOS 4.17 vs 8.63 months).
Conclusions
Opioid treatment and its escalation at the beginning and during immunotherapy are negative prognostic factors in advanced NSCLC.

eP061
POTENTIAL IMPACT OF MEDICAL CANNABIS TREATMENT ON PAIN CONTROL AMONG CANCER PATIENTS IN QUEBEC – CANADA: A PILOT STUDY

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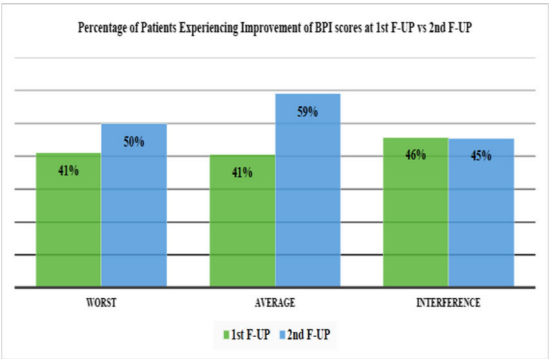
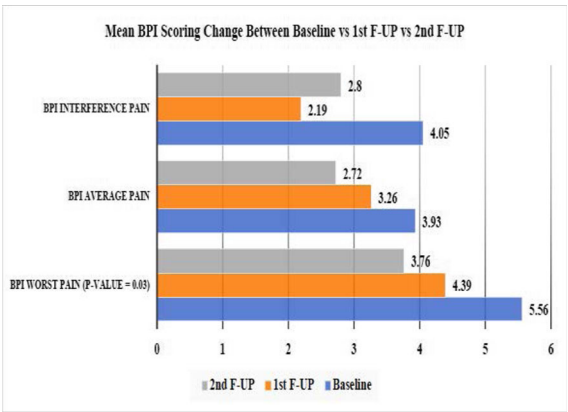
Introduction
Therapeutic applications of medical cannabis within the cancer population, particularly for chemotherapy induced peripheral neuropathy, and how this complementary approach can impact patients' quality of life are still under-investigated.
Methods
The Cannabis Pilot Project (CPP) accepted McGill University Health Centre cancer patients already receiving supportive care but referred to the CPP because they did not achieve adequate symptom relief. This study examines the efficacy of cannabis treatment for pain relief using the Brief Pain Inventory (BPI) scale. An interdisciplinaryteam was established to systematically assess patients, prescribe and monitor cannabis treatments.
Results
Sixty-five patients have been enrolled (mean age 61 years; 52% female) in the CPP over seven months. The comparison between baseline, first (n=45) and second (n= 27) follow-up showed that 41% of patients vs 50% improved for worst pain (BPI 5.56 vs 4.39 vs 3.76, p-value 0.030), 41% vs 59% for average pain (BPI 3.93 vs 3.26 vs 2.72), 46% vs 45% for interference pain (BPI 4.05 vs 2.19 vs 2.80). Around 15% of patients reported mild adverse events at both follow-ups (i.e. light headedness in the morning).





Conclusions
Cannabis treatment seems to be safe and effective for cancer pain improvement. Fifty percent of patients improved both clinically and statistically for worst pain across the three visits. Large longitudinal studies may confirm stronger correlations between longer exposure to cannabis and pain relief.

eP062
FACTORS ASSOCIATED WITH IMPROVEMENT IN OPIOID INDUCED NEUROTOXICITY AFTER INPATIENT PALLIATIVE CARE CONSULTATION AT A COMPREHENSIVE CANCER CENTER

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Introduction
Limited data is available on the factors associated with the resolution of opioid induced neurotoxicity (OIN). The objective of this study was to determine the factors associated with resolution of OIN.
Methods
In this retrospective study we reviewed 1770 eligible cancer patients from January 2014 to December 2017. Eligible criteria included: 1) taking opioid more than 24 hours; 2) =18 years old or older. Patients' demographics, performance status, Edmonton Symptom Assessment Scale (ESAS), Memorial Delirium Assessment Scale (MDAS), smoking history, renal dysfunction, prescriptions of opioids, pain response, subtype of OIN, management of OIN, OIN improvement, and date of death or last follow-up were reviewed and analyzed.
Results
OIN was diagnosed in 11% (196/1770) patients. The median age was 60.5 years (Interquartile range [IQR]: 48.0-69.0) and 50.5% were male. The most common OIN symptom was delirium (n=87, 44%). Within 7 days after palliative care consults (PC), 89 patients (45%) reported OIN improvement. The medium days to improve OIN was 3 days (IQR: 1.0-5.0). Delirium (n=62, 32%) was the most common OIN symptom, and the most difficult one to be improved (n=20, 10%). The most common PC intervention was opioid rotation (n=131, 67%), followed by opioid reduction/discontinuation (n=43, 22%). Better pain response after PC consultation (Odds ratio per point 4.8, p=0.0007) was significantly associated with OIN improvement.
Conclusions
Only 45% of patients with OIN had improvement of OIN with a median of three days after opioid rotation or dose reduction. Better pain response after PC consultation was significantly associated with OIN improvement.

eP063
CORRELATION OF A FUNCTIONAL PAIN SCALE WITH PERSONAL PAIN GOAL IN PATIENTS WITH ADVANCED CANCER

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Introduction
Cancer pain is a multifaceted and difficult problem that affects every aspect of a cancer patient's life. We sought to compare a functional pain scale to the achievement of a personal pain goal in patients with active cancer pain.
Methods
87 patients with incurable malignancy and cancer related pain were enrolled in this IRB approved study. Patients were surveyed monthly either in person or by mail. In the survey, patients were asked to set a personal pain goal (number scale 1-10), asked about their pain regimen and the influence of pain on their level of function using the following scale:

0	No pain
1	Pain that does not interrupt daily activities
2	Pain that interrupts daily activities less than 50% of the time
3	Pain that interrupts daily activities more than 50% of the time
4	Pain that limits all activities, bedridden

Results

A small majority of patients (58%) met their personal pain goal over a 6 month period. In patients who did meet their personal pain goal, most (82%) maintained low scores on the functional pain scale. In patients who did not meet their personal pain goal, a majority (52%) had poor functional pain scores.

Month	1	2	3	4	5	6	Average %
Met personal pain goal No (%)	51 (59%)	40 (56%)	40 (59%)	40 (66%)	29 (56%)	23 (51%)	58%
Met personal pain goal and had a functional pain score of 1 or 2	42 (82%)	36 (90%)	30 (75%)	35 (88%)	24 (83%)	17 (74%)	82%

Month	1	2	3	4	5	6	Average %
Did not meet personal pain goal No (%)	34 (40%)	29 (41%)	27 (40%)	21(34%)	23 (44%)	21 (47%)	41%
Did not meet personal pain goal and had a functional pain score of 3 or 4	14 (41%)	17(59%)	15 (71%)	9 (43%)	12 (52%)	10 (48%)	52%

Conclusions

The use of a personal pain goal is one way to evaluate cancer pain but does not consider a patient's function and the influence of pain on day to day functioning. This novel pain scale, which includes function, correlates well to achievement of a personal pain goal.

eP064
ASSESSMENT, MANAGEMENT, AND BARRIERS OF BREAKTHROUGH CANCER PAIN: A NATIONWIDE STUDY IN KOREA

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Introduction

In this research, we observed the diagnosis, assessment and management of breakthrough pain on cancer patients' and physicians' perspectives. The primary purpose was to find barriers and ways to manage breakthrough pain for effective control.

Methods

We conducted a cross-sectional study of 59 physicians from 33 teaching hospitals across Korea. The assessment of breakthrough pain was conducted by surveying patients who use narcotic analgesics to control cancer pain. Clinical characteristics, assessment and management of cancer pain and breakthrough pain, physician's knowledge about breakthrough pain, and barrier questionnaire were assessed.

Results

956 cancer patients participated in the study. Patients undergoing chemotherapy were 666 (69.67%). The prevalence of breakthrough pain among cancer patients was 73.33%. Physicians who knew the exact definition of breakthrough pain diagnosed breakthrough pain at the rate of 84.6±26.9% which was higher than those from physicians who did not know the exact definition (76.4±34.3%). However, the difference was not statistically significant (p=0.5232). The intensity of the breakthrough pain was reduced to 69.9% on average when short-acting opioids were used, and the overall satisfaction of the short-acting opioids was on average 73.1%. Participants experienced side-effects from short-acting opioids with 'drowsiness' (204, 30.77%) and 'dizziness' (159, 23.98%). Barriers Questionnaire with a five-point scale was given to the patients, with higher scores indicating a higher degree of having misconceptions regarding pain management. Table 1 summarizes the results.

Conclusions

The prevalence of breakthrough pain among cancer pain patients is 73% in Korea. To effectively control breakthrough pain, we have to correct misconceptions about cancer pain.

eP065
DENTAL APPROACH OF OROFACIAL PAIN IN HEAD AND NECK CANCER PATIENTS

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Introduction

Orofacial pain (OFP) is an undesirable sensation frequently associated with head and neck cancer (HNC) and its treatment. OFP negatively impacts the quality of life of oncological patients. The approach to OFP diagnosis and management can differ if the patient visits a dentist or physician. The aim of this study was to present a case series of HNC with OFP managed by a dentist team and to discuss its role in the management of OFP.

Methods

We recruited twenty-two adult patients with OFP and previous diagnosis of HNC referred to an academic dental clinic from 2015 to 2017.

Results

Nociceptive was more frequent than mixed and neuropathic pain, however 54,4% of the cases showed a neurological component. All types of pain were managed by dentist through removal of pain's cause and appropriated local and systemic treatment. The intensity of pain was reduced in 86,3% of patients, and 45,4% of them reported absence of pain at the end of treatment.

Conclusions

Dentist's assessment plays a distinct and crucial role in the diagnosis and management of OFP in HNC patients throughout the oncological treatment.

eP066
PAIN WITH ENDOCRINE THERAPY IN SURVIVORS OF BREAST CANCER: A PROSPECTIVE 6 YEARS OF FOLLOW-UP

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Introduction
Musculoskeletal pain has been reported to affect up to 80% of women taking aromatase inhibitor (AI) for breast cancer. However, the long-term trajectory (after 12 months) of pain is largely unknown, and it is not clear whether pain is reduced following the completion of therapy. The purpose of this secondary analysis was to examine the long-term effect of AI on pain to one year after completion of AI therapy in breast cancer survivors.
Methods
Pain was assessed by Brief Pain Inventory before AI therapy, semiannually years 1 and 2, annually years 3 through 5, and one year after completion of AI therapy in three cohorts of postmenopausal women who: 1) received AI only (AO); 2) received chemotherapy+AI (CA); and 3) without cancer and matched on age and education. Linear mixed modeling was performed to examine group, time, and group×time effects among the cohorts for the severity and interference of pain.
Results
Caucasian women (n=106), on average 60.4±6.3 years of age, were included. Compared to controls, the CA group experienced higher pain severity at 18 and 48 months after initiation of AI therapy (p=0.03, 0.01), while the AO group reported higher pain severity at every time point (p0.05) except at pre-therapy and 12 months after initiation of AI therapy. No significant time effects within each cohort and group effects for pain interference were found.
Conclusions
Our findings are the first to suggest that AI users experience higher pain severity from 18 months through 1 year after completion of AI therapy.

eP067
DYNAMIC BRAIN ACTIVITY CHANGE AFTER AURICULAR POINT ACUPRESSURE ON PATIENTS WITH CHEMOTHERAPY-INDUCED NEUROPATHY: A PILOT LONGITUDINAL FUNCTIONAL MAGNETIC RESONANCE IMAGING STUDY

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Introduction
Chemotherapy-induced peripheral neuropathy (CIN) —pain, numbness, and/or tingling distributed in the hands and feet in a stocking-and-glove distribution—is a severe adverse effect produced by chemo-therapeutic agents
Methods
An open-pilot trial with repeated observation study design was used. Participants received a 4-week of APA treatment protocol to manage their CIN. After baseline data were collected, participants received a pre-APA fMRI scan, followed by 10 min of APA. Immediately after the treatment, a repeat fMRI was performed (immediate-APA). Participants received another fMRI after completion of a 4-week of APA (post-APA).
Results
fMRI scans were performed three times: pre-APA, immediately followed by 10 min of APA (immediate-APA), and post-APA (4 weeks APA) from 8 participants with CIN. Across the 11 intrinsic brain networks examined, there was a trend towards the significance of the connectivity of the basal ganglia network (BGN) to the salience network (SAL), which was decreased pre-APA vs immediate-APA (ES=1.04, p=0.07). The BGN also demonstrated decreased connectivity with the language network (LAN) pre-APA vs delayed imaging post-APA (ES=-0.92, p=0.07). Furthermore, there was increased executive control network (ECN) within-network connectivity comparing pre-APA to delayed imaging post-APA, trending towards significance (ES=0.41, p=0.09). When examining trends in connectivity, there was a progressive increase in connectivity within the ECN and SAL from pre-APA and delayed post-APA imaging.
Conclusions
The progressive increase in connectivity between the ECN-SAL networks from pre- to immediate- to post-APA suggests an ongoing alteration in brain functional connectivity following APA, particularly in the insular cortex which plays significant roles in pain, memory, and cognitive function.

eP068
DISENTANGLED: AN INSTITUTIONAL ANALYSIS COMPARING DIFFERENCES IN END OF LIFE PATTERNS AND RESOURCE UTILIZATION IN ACUTE LEUKEMIA AND BONE MARROW TRANSPLANT UNITS

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Introduction
Northwell's Palliative Medicine service at North Shore University Hospital developed a co-management model to address the needs of hematology patients admitted to the acute leukemia (ALU) or bone marrow transplant (BMTU) units.
Methods
The primary outcome was the time from admission to initial consult. The secondary outcome was length of stay in a goal concordant setting to receive end of life (EOL) care, namely our inpatient palliative care unit (PCU).
Results
There were 106 new consults in twelve months (45 acute leukemia/lymphoma and 61 bone marrow transplant). The average time to consult for the ALU decreased from 18.8 days at six months to 8.8 days at twelve months. For the BMTU, it decreased from 10.2 days at six months to 4.6 days at twelve months. The mortality rate of patients seen from the ALU and BMTU was 40% and 12%, respectively. Of the ALU deaths, 83% were 65 or older, compared to 29% of the BMTU deaths. Deaths in the ICU were greater for BMTU patients (43%) relative to ALU patients (11%).
Fifty percent of the ALU inpatient expirations received EOL care in our PCU, while the remaining deaths were on the ALU (39%). Despite comparable numbers of PCU transfers during the pre- and post-intervention periods, the average LOS in the PCU increased from 1.1 to 5.7 days.
Conclusions
This partnership allowed for the recognition of different EOL care patterns, decreased time to consult, and increased time in goal concordant settings for patients at the end of their lives.

eP069
INPATIENT MUSIC THERAPY EFFECTS ON SELF-REPORTED SYMPTOMS IN A CANCER CENTER: A PRELIMINARY REPORT

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Introduction
Music therapy has shown benefits for reducing distress in individuals with cancer. We explore the effects of music therapy on self-reported symptoms of patients receiving inpatient care at a comprehensive cancer center.
Methods
Music therapy was available as part of an inpatient integrative oncology consultation service; we examined interventions and symptoms for consecutive patients treated by a board certified music therapist from 9/2016-5/2017. Patients completed the Edmonton Symptom Assessment Scale (ESAS, 10 symptoms, scale 0-10, 10 most severe) before and after the intervention. Data was summarized by descriptive statistics. Change in ESAS symptom and subscale scores [physical distress (PHS), psychological distress (PSS), and global distress (GDS)] were evaluated by Wilcoxon signed rank test.
Results
Data were evaluable for 96 of 100 consecutive patients; 55% were women, average age 50, majority with hematologic malignancies (47%). Reasons for music therapy referral included: anxiety/stress (67%), adjustment disorder/coping (28%), and mood elevation/depression (17%). Highest (worst) symptoms at baseline were sleep disturbance (5.7) and well-being (5.5). We observed statistically and clinically significant improvement (means) for anxiety (-2.3±1.5), drowsiness (-2.1±2.2), depression (-2.1±1.9), nausea (-2.0±2.4), fatigue (-1.9±1.5), pain (-1.8±1.4), shortness of breath (-1.4±2.2), appetite (-1.1±1.7); and for all ESAS subscales (all p's<0.02). Highest clinical response rates were observed for anxiety (92%), depression (91%), and pain (89%).
Conclusions
A single, live, tailored music therapy intervention as part of an integrative oncology inpatient consultation service contributed to significant improvement in global, physical and psychosocial distress. A randomized controlled trial is justified.

eP070
HOW DOES COMPLEMENTARY AND ALTERNATIVE MEDICINE CAN IMPROVE CONTROL AND PREVENT FATIGUE AND PSYCHOLOGICAL STRESS IN CHILDREN AND ADOLESCENTS WITH CANCER?

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Introduction
Fatigue and psychological stress are two of the most common cancer-related symptoms (CRS). They can independently predict changes in patient function, treatment failures, and post-therapeutic outcomes. Parents of children and adolescents with cancer, either report the use of CAM or demonstrate an interest in using these therapies to prevent and manage CRS. However, due to lack of scientific evidence in this context, parents often have not discussed their interest in or use of CAM with the health professionals involved in the care of their child. At the same time, health professionals have struggled to give a trustworthy feedback on this patient demand. This review aimed to identify, analyze and synthesize the evidence of CAM studies to improve control and prevent cancer-related symptoms in children and adolescents with cancer.
Methods
Eight electronic databases were used for the search. Initially, 273 articles were found; after the exclusion of repeated articles, reading of the titles, abstracts, and the full articles, a final sample of nine articles was obtained.
Results
The articles were grouped into five categories: physical exercise, healing touch, music therapy, therapeutic massage, nursing interventions and health education. Among the nine studies, six showed statistical significance regarding the fatigue and/or stress levels, showing that the use of the interventions led to symptoms decrease. The most frequently tested intervention was programmed physical exercises.
Conclusions
It is suggested that these interventions are complementary to conventional treatment and that their use can indicate an improvement in CRS.

eP071
HYPOFRACTIONATED RADIOTHERAPY IN ADVANCED SQUAMOUS CELL CARCINOMA OF HEAD AND NECK

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Introduction
This study aims to evaluate the acute toxicity, symptom relief and disease response after hypofractionated radiotherapy in patients with advanced unresectable and inoperable squamous cell carcinoma of head and neck (HNSCC).
Methods
A hospital based prospective observational study conducted at National Academy of Medical Sciences, Nepal from November 2014 to November 2015 on 30 patients of stage III or stage IV HNSCC who were offered the radiotherapy of 30 Gy in 10 fractions over 2 weeks. Baseline symptoms including pain, dysphagia, insomnia and dyspnoea were assessed using 11 point numerical scale. Acute toxicities during the treatment were assessed using Common Terminology Criteria for Adverse Events and graded accordingly. At 6 weeks of treatment percentage of symptom relief and disease response was assessed using Response Evaluation Criteria in Solid Tumors. A few patients were selected for further curative radiotherapy.
Results
Pain (86.7%) and dysphagia (50%) were common symptoms. More than 75% of symptoms relief was noted in 73% of patients with pain, 66.7% with dysphagia, 92.3% with dyspnoea and 60% with insomnia. An objective response rate of 70% was observed. A few patients had progressive disease (13.3%). Acute radiation toxicities were acceptable with no grade 3 or 4 toxicities and no treatment related mortality. Forty six percent patients had mucositis, 13.3% had dysphagia, and 6.7 % had hoarseness and dermatitis each.
Conclusions
Hypofractionated radiotherapy of 30 Gy in 10 fractions is a suitable modality of treatment for patients with advanced unresectable or medically inoperable HNSCC for symptom relief and tumour control, with acceptable toxicity.

eP072
TRISMUS AND ITS INFLUENCING FACTORS IN ORAL CANCER PATIENTS

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Introduction
Many oral cancer survivors suffer from trismus. This complication has major adverse impacts on individual quality of life. Knowledge regarding the risk factors for trismus is essential for developing intervention to prevent or effectively manage this devastating complication.
Methods
This is a prospective longitudinal study. 69 oral cancer patients were recruited. The maximum incisal opening was assessed before their surgery, discharge, and 1 month, 3 months, and 6 months post surgery. Measurement scales including a Therabite range of motion scale and the study questionnaires of demographics and disease variables. Statistical analysis was carried out by using SPSS software and descriptive analysis, generalized estimating equations were used to analyze the data.
Results
The average maximum incisal opening distances were 29.23, 20.85, 23.15, 25.20 mm at pre-op, one month, three month, and six month, respectively. Using 35 mm as the cutoff point for trismus, there were 60.9%, 89.9%, 88.4%, and 76.8% of the study participants had trismus at pre-op, one month, three month, and six month, respectively. Advanced cancer stage and receiving CCRT were important predictors of trismus.
Conclusions
Patients with advance stage of oral cancer and treated with CCRT showed higher risk for developing trismus. Medical professionals should pay attention to this high risk group and provide them adequate oral rehabilitation exercise. Some participants quick oral rehabilitation exercise due to pain (n=9) and feeling not being effective (n=7). The study results can increase our understandings on the problems with trismus and how to provide appropriate information and nursing care to facilitate patients' recovery.

eP073
A PRESCRIBED WALKING PROGRAM IMPROVES GLYCEMIC CONTROL AND SYMPTOM MANAGEMENT IN PATIENTS WITH CANCER

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Introduction
Pain, fatigue, depression, and sleep disturbance impair the quality of life of oncology patients. Among multiple contributors to these symptoms (e.g., treatments, comorbidities), hyperglycemia is one that is modifiable. Interventions focused on decreasing hyperglycemia to improve symptom management during cancer treatment are lacking. The purpose of this pilot study was to evaluate the impact of a prescribed walking program for glycemic control and symptom management among patients without pre-existing diabetes undergoing chemotherapy for breast, lung, gynecologic, or gastrointestinal cancer.
Methods
In this prospective study, patients were randomization into a prescribed walking program (intervention) or usual care (control) group and were followed for six months, completed symptom surveys at enrollment, 3-months, and 6-months, and had glycosylated hemoglobin A1c (A1c) measured at enrollment and 6-months. Analyses included descriptive statistics and correlations.
Results
Forty-two patients enrolled and 33 (n=15 intervention; n=18 control) completed the study. The majority were women (n=32) with breast cancer (n=24). At month 6, A1c in the intervention group decreased by 0.16/~5mg/dL (p=.002). In addition, sleep disturbance (p=0.023) and depression (p=0.021) were significantly lower in the intervention group compared to the control group. Mean scores for the intervention group compared to the control group improved from enrollment to month 6 for fatigue (Δ -1.48 vs. -1.11), energy (Δ +1.03 vs. +0.45), current pain (Δ -0.06 vs. +0.98), and weekly pain (Δ -0.75 vs. -0.07).
Conclusions
Exercise may improve glucose management and decrease symptom severity during treatment for cancer. Future studies with larger sample sizes are warranted.

eP074
A STUDY TO ASSESS THE QUALITY OF LIFE OF POST OPERATIVE PATIENTS WITH ORAL CANCER IN B.R.A I.R.C.H, AIIMS, NEW DELHI.

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Introduction
Cancer is a leading cause of death in both developed and underdeveloped countries in the world. The Indian subcontinent accounts for one-third of the world burden of head and neck cancer. Surgery is the standard treatment of choice for head and neck cancers. It is imperative to give supportive **care** to improve the quality of life. **Aim:** To assess the quality of life of post operative patients with oral cancer in B.R.A I.R.C.H, AIIMS, New Delhi"
Methods
The study was conducted at B.R.A.I.R.C.H, AIIMS, New Delhi. The data was collected by convenience sampling from 50 adults who underwent surgery for oral during June 2017 to December 2017. Standardized self-structured EORTC QOL(H&N) was used to assess the perceived level of the quality of life of post operative patients with oral cancer during hospital stay and at one month follow up. Ethical clearance was obtained from institutional ethics committee.
Results
80% patients were male. Majority of the patients underwent mandibulectomy(66%) modified neck dissection(60%) and regional flap reconstruction(56%). The major symptoms perceived during hospital stay were pain(98%), speech problem (84%), problem in opening mouth(82%), felt ill(80%), weight loss(74%), etc. and at one month follow up were problem in opening mouth(90.6%), pain(90.5%), speech problem(83.6%), weight loss(82%), among many others. There was a significant decrease in the perceived pain (11.2+/-2.99) at one month follow up(9.12+/-3.42).
Conclusions
Most of the patients experience pain, problem in opening mouth, sticky saliva, speech problem, trouble in social contact, weight loss, etc.

eP075
CERVICAL CANCER AND HPV RELATED DISEASES SCREENING AT UNIVERSITY OF JOS AND ITS ENVIRONS, PLATEAU STATE NIGERIA

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Introduction
Cervical cancer (CC) is the fourth most common cancer among women worldwide, with an estimated 265,700 deaths per year and developing countries have the highest burden. The disease has relatively early onset, occurring primarily during reproductive ages. This study aimed at screening for the symptoms and early detection of CC in women at the University of Jos and how this can be related to public health management in Nigeria.

Methods
Of 350 interviewed, 250 consenting women aged ≥16 to 60 years were screened for CC and Human Papilloma Virus (HPV) related diseases. We used modified structured questionnaire after awareness campaign and 250 Pap smear samples were collected and screened by staining technique and slides examined microscopically.
Results
Out of 250 samples screened, 8(3.2%) had low squamous intraepithelial lesion which is a positive indication of CC. The highest prevalence was seen in the age group of women between 16-25 years 5(2.0%), and 46-55 years 3(1.2%). The awareness offered women opportunity to be educated on CC, screened and linked to recommended government healthcare hospitals.
Conclusions
: The conventional Pap smears in screening and primary HPV testing will play an important role as early detection of CC, which is critical to management and eradication of the diseases through the use of effective candidate vaccine particularly among reproductive age group.

eP076
TRACKING SYMPTOMS, FATIGUE AND SYMPTOM CLUSTERS IN ADULT PATIENTS WITH ACUTE LEUKEMIA IN THE PACE-AL COUNSELING AND EXERCISE RANDOMIZED CONTROLLED TRIAL

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Introduction
Patients with acute leukemia experience multiple concurrently occurring symptoms that interfere with activities of daily living. Exercise-based interventions have been used as a supportive measure to remedy disease and treatment-related symptoms in patients with cancer.
The study explored the impact of a multimodal exercise-based intervention on symptom and fatigue prevalence, severity and the longitudinal patterns of individual and clusters of symptoms in adult patients with acute leukemia.
Methods
A two-center, randomized controlled trial of patients with acute leukemia during consolidation chemotherapy in the outpatient clinic. Patients were randomized to usual care or a 12-week supervised exercise and counseling intervention. A 13-item Symptom Assessment and six-interference item questionnaire and a 4-item Brief Fatigue inventory were completed weekly during the 12-week study period.
Results
Of the 70 patients randomly assigned to the intervention (n=32) or control group (n=34), 62 patients completed study requirements. We found no difference in symptom prevalence, however the intervention group experienced a statistically significant increase in symptom and fatigue severity during the study as compared to the control group, only to inadvertently reduce, while the control group increased by study completion. Four symptom clusters were identified, and the cluster 'drowsy, fatigue, disturbed sleep and remembering' was significantly more severe in the intervention group during the 12-week study period, peaking at eight weeks.
Conclusions
Though exercise and counseling integrated in the clinical setting increased symptom severity during the study period, a relief in symptoms at end of study shows the potential of exercise in facilitating resumption of everyday activities.

eP077
PATIENTS' PREFERENCES OF PATIENT REPORTED OUTCOMES SYMPTOM MEASUREMENT

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Introduction
Systematically monitoring symptoms using patient-reported outcomes (PROs) measures during cancer treatment can improve quality of life, treatment adherence, and overall survival and can decrease resource utilization. Little is known about patient willingness to complete PRO measures and about patient preferences as to completion location, administration method, frequency, and desired response from providers. The purpose of this study is to determine patient willingness and preferences around symptom assessment completion.
Methods
An investigator-developed questionnaire about preferences for responding to PRO symptom measures was completed by 135 participants with cancer. Data were analyzed descriptively.
Results
Mean participant age was 56.3 years (standard deviation = 13.0); 50.4% of participants were female, 72.6% white, and 79.5% diagnosed with a solid tumor. Participants were surveyed while receiving chemotherapy (76.6%) or during post-operative hospitalization (23.3%). The preferred location to complete PRO symptom measures was in the clinic waiting room (37.0%). The preferred method of completion was paper and pen (26%) or electronic tablet (18.5%) in the clinic or computer (19.9%) or phone (25.3%) at home. Participants preferred to complete only one PRO measure per clinic visit (74.0%) and per week during treatment (76.0%). When reporting high symptom severity, participants preferred a provider to response by phoning them immediately (48.6%).
Conclusions
Patient preferences regarding location, method of administration, frequency of administration and desired response from providers should be considered in planning symptom monitoring using PRO measures as part of clinical care.

eP078
CARING FOR A PATIENT WITH AN ISCHEMIC CEREBRAL INFARCTION WITH BONE META

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Introduction
This paper discusses the care provided for a 61-year-old female patient with hemiparesis on the left side due to an anemic cerebral infarction. with bone meta.
Methods
After the incident, the patient experienced restricted movement and a loss of control over daily living; this caused physical and mental stress as well as anxiety. Care was provided between April 30 and May 29 and evaluation was conducted using Orem's self-care theory. Data was collected via observations, discussions, and physical evaluations, and the patient's

health problems were impaired physical function, physical and mental stress, and anxiety.

Results

This served as the motivation for this discussion. Empathy, encouragement, and accompaniment helped the patient express herself regarding the illness and gradually become more positive about living with her situation. The medical team included a physical therapist who provided the patient and her family with a physical therapy plan to make best use of her physical functions. Other patients with the same condition were also introduced so that their encouragement along with her family's support could lessen her feelings of anxiety and uncertainty while improving self-control, allowing the patient to return to a normal life

Conclusions

It is hoped that this nursing experience can serve as a clinical reference for the future care of patients with ischemic cerebral infarctions.

eP079
NUTRITION RISK SCREENING OF CANCER OUTPATIENTS IN BRITISH COLUMBIA

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Introduction

The prevalence of malnutrition among cancer patients ranges from 40-80% depending on the stage, tumour site, treatments and the individual. Malnutrition is associated with a reduced quality of life (QOL), increased risk of chemotherapy-induced toxicity, decreased response to treatment and thus, can impact disease progression and survival. Nutrition screening aims to identify patients at risk for malnutrition, ideally leading to early nutrition intervention. At BC Cancer (BCC) a Nutrition Screening Tool (NST), based on the validated Malnutrition Screening Tool (MST), is included within the self-reported outpatient intake form. This study reviewed data collected from the NST.

Methods

Frequency distributions were analyzed for 62,592 NST scores (0-1=low malnutrition risk, 2-3=moderate risk, 4-5=high risk) collected over 4 years from January 2013-December 2017.

Results

Overall, patients scored 0 (55.9%), 1 (14.8%), 2 (15.5%), 3 (8.4%), 4 (3.6%) and 5 (1.9%). The proportion of patients at moderate to high malnutrition risk was 29.4% (scored 2 or greater). Moderate to high risk, by tumour site, was: gastrointestinal (52.1%), lung (46.3%), head and neck (27.9%), genitourinary (18.2%) and breast (15.7%). About one-third (34%) reported involuntarily weight loss recently. One in five patients (22%) reported that they were eating poorly due to a decreased appetite.

Conclusions

The proportion of cancer outpatients who were at moderate to high malnutrition risk was consistent with the literature. Screening is one tool to guide triaging practice of oncology dietitians. Future research is needed to evaluate the effect of screening on outcomes.

eP080
INTRAPERICARDIAL CARBOPLATIN IN THE MANAGEMENT OF MALIGNANT PERICARDIAL EFFUSION IN BREAST CANCER

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Introduction

Malignant pericarditis was observed in 5.1%–7.0% of all cases of acute pericarditis. Malignant pericardial effusion (MPE) can lead to cardiac tamponade in the later stages of cancer. Breast cancer is the second most common primary site associated with MPE. The efficacy and safety of pericardial sclerosis have never been evaluated in breast cancer. In this study, we assessed the efficacy and safety of intrapericardial carboplatin (CBDCA) following catheter drainage in patients with breast cancer-related MPE.

Methods

A catheter was inserted percutaneously into the pericardial space under echocardiographic guidance. After complete drainage, 150 mg of CBDCA was instilled into the pericardial space through the catheter.

Results

Eight patients with symptomatic breast cancer-related MPE were treated at the Gunma Prefectural Cancer Center, between July 2010 and March 2016. After treatment, the control rate of MPE at 1 month was 100%. Fever was observed in 2 patients (25%), and none experienced chest pain or arrhythmia. The median survival time from the recurrence of breast cancer until death or study follow-up was 2336 days (range: 293–3937 days), while that from intrapericardial CBDCA administration until death or study follow-up was 552 days (range: 35–1637 days).

Conclusions

We found that intrapericardial administration of CBDCA after catheter drainage appears to be safe and effective in managing breast cancer-associated MPE. Because the number of patients in this study was small, further studies are warranted to determine the safety and efficacy of intrapericardial CBDCA in the management of breast cancer-related MPE.

eP081
CO-OCCURING SYMPTOMS IN OLDER ONCOLOGY PATIENTS WITH DISTINCT ATTENTIONAL FUNCTION PROFILES

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Introduction

Attentional function is an extremely important outcome for older oncology patients. In previous work, we identified three distinct attentional functional profiles (i.e., low (36.7%), moderate (37.3%), high (26.0%)). This study's aim was to evaluate how these subgroups of older adults differed on the severity of nine co-occurring symptoms (i.e., trait anxiety, state anxiety, depression, sleep disturbance, morning fatigue, evening fatigue, morning energy, evening energy, pain).

Methods

Older oncology outpatients (n=365) were assessed for changes in attention using the Attentional Function Index (AFI) six times over two cycles of chemotherapy. Patients completed Spielberger State-Trait Anxiety Inventories, Center for Epidemiological Studies-Depression scale, General Sleep Disturbance Scale, Lee Fatigue Scale, and Brief Pain Inventory. Hierarchical stepwise regression model was used to evaluate the effects of selected co-occurring symptoms on AFI latent class membership.

Results
Differences in state anxiety, trait anxiety, depression, sleep disturbance, morning fatigue, and evening fatigue, among the classes, followed the same pattern (i.e., low > moderate > high class). Compared to the high class, lower income, higher level of comorbidity, higher chemotherapy toxicity score, and higher sleep disturbance, state anxiety, and depressive symptom scores were associated with membership in the low AFI class. Compared to the high class, a higher level of comorbidity, lower levels of morning energy, higher trait anxiety, and previous treatment combinations were associated with membership in the moderate high AFI class.
Conclusions
Phenotypic characteristics associated with membership in low and moderate latent classes can be used by clinicians to identify higher risk patients.

eP082
THE USE OF SOCIAL MEDIA IN SUPPORTIVE CARE FOR BREAST CANCER PATIENTS: A SUCCESS STORY FROM LOW RESOURCE COUNTRY

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Introduction
Breast cancer is the most prevalent form of cancer and the leading cause of death among women in Ghana. Most patients report late with up to 85% presenting with advanced disease. People with Metastatic Breast Cancer frequently experiences feeling of isolation, shame and stigma associated with the disease. These feeling are aggravated with lack of public understanding. Moreover, there is no support system or follow-up care for survivors. To address this issue there is the need for information, support and education to the general public.
Objectives
To establish a structured social media platform for supportive care network that will improve the quality of end-of-life care among Breast Cancer Patients
Methods
During the one year program, a social media platform and network was created were we identify and recruit prospective breast cancer survivors within Kumasi Metropolis to share their experiences, have their concerns addressed and educate the public about Metastatic Breast Cancer.
Results
Creating of the social media campaign reached out for hundreds of thousands of people. Understanding Metastatic Breast Cancer beyond their personal experiences, broaden their knowledge of resources available for them, a social media as a advocacy tool and grew their personal support network.
Conclusions
Social media is an ideal medium for education and advocacy as it education, advocacy, support features represent an effective model. The survivals shared their personal experiences via the social media.

eP083
THE VEIL OF CANCER SYMPTOMS IN CHILDREN: SYMPTOMS WE KNOW ABOUT ARE NOT THE SAME AS THE ONES THAT CAUSE DISTRESS

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Introduction
Children with cancer experience distressing symptoms, yet routine and systematic screening of symptoms in children is rare. In adult cancer settings, the use of Patient Reported Outcomes (PRO) for symptom screening is common and has demonstrate a range of benefits to patients, clinicians and health systems. Less is known about using PROs in children and if the same benefits can be realized. We aimed to explore symptom burden in a cohort of children, and to examine the feasibility and acceptability of using the Symptom Screening in Pediatrics (SSPedi) tool from the child and family perspectives.
Methods
We reviewed free-text records for phone calls made to oncology nurses over a 6 month period. Reasons for calls were categorized and calls about symptoms were further categorized. We then prospectively collected a convenience sample of patient reports of symptom distress using the 15 item SSPedi tool.
Results
There were 717 phone calls regarding 249 patients over a 6 month-time period. Only 12% of phone calls (N=89) were about symptoms. Of these, most (N=23,26%) were regarding pain, with the remainder about 14 different symptoms. Forty-six children aged 8-18 years completed the SSPedi. The symptoms causing the most bother were sleep (51.47%), fatigue (43%) and changes in taste (36%).
Conclusions
The symptoms that cause the most bother to children are not the same symptoms reported as a concern by parents in phone calls. More research is required to better understand how to reduce symptom burden in children. Use of PROs in this patient group is feasible and acceptable.

eP084
A DYAD-BASED MINDFULNESS RECOVERY PROGRAM TO REDUCE LUNG CANCER SYMPTOMS FOR SURVIVORS AND FAMILY MEMBERS

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Introduction
Excessive symptom burden remains a distressing problem for survivors with NSCLC stages I-IIIa. This study's objective is to test a tailored intervention, *Breathe Easier*, which encompasses meditation, varying levels of yoga, and breathing exercises to evaluate feasibility and preliminary effects.
Methods
A prospective, one-group, repeated measure, mixed-method design tested the hypotheses that participants who receive an 8-week intervention will demonstrate less (a) dyspnea, (b) fatigue, (c) stress and (d) improved sleep post intervention. The FACIT Dyspnea Short Forms, FACIT Fatigue Scale v.4, Pittsburgh Sleep Quality Index, and the Perceived Stress Scale v.4 measured outcome variables. Descriptive statistics summarized five feasibility measures (recruitment, retention, intervention dose, adherence, acceptability).
Results
In six iterations, 164 survivors were reached, with 32 dyads enrolled (62 participants; 20% recruitment and 94% retention rates). Survivors were

44% male and 62% African American. Among all, 74% were not current smokers, 22% used oxygen, and 71% completed a 6MWT post intervention. Survivors reported slightly greater adherence for completion of daily home assignments. All agreed that intervention materials were easy to use, learning yoga and breathing exercises helped them, and that involving a family member was important. For each outcome variable, differences in survivors versus partners, T1 versus T2, and the interaction were calculated. Survivors had less dyspnea and perceived stress over time. Both groups had improved fatigue and sleep scores.

Conclusions

Recruitment, retention, adherence, and acceptability demonstrated strong feasibility. Preliminary outcome data indicate benefits were experienced over time by both survivors and family members.

eP085

PREVALENCE OF SLEEP DISTURBANCES AMONG HEAD AND NECK CANCER PATIENTS: A SYSTEMATIC REVIEW AND META-ANALYSIS

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Introduction

Sleep disturbances among cancer patients are associated with various psychological morbidities. Among head and neck cancer (HNC) patients sleep disturbances are hypothesized to be highly prevalent. However, there is no precise estimate on the prevalence of sleep disturbance among this population. Our aim is to systematically review the prevalence of sleep disturbances among HNC patients.

Methods

Pubmed, Embase, CINAHL and PsycINFO were searched. Studies reporting the prevalence of any type of sleep disturbance among adults with HNC were included. Study selection, data extraction and quality assessment were performed by two independent reviewers. Meta-analysis of prevalence was performed using random effects model, with I2 values to indicate the extent of heterogeneity. Prevalence rates among different treatment type and phases, measurement instrument used and the quality of included studies were examined.

Results

Twenty-nine studies of accumulatively 2,315 HNC patients were included. The quality was fairly poor and the heterogeneity was high. Studies on three types of sleep disturbances were found: insomnia (17 studies) with pooled prevalence 29% (95% CI 20-41%) before, 45% (95%CI 33-58%) during, and 40% (95%CI 24-58%) after treatment; sleep-related breathing disorders (14 studies) with pooled prevalence 66% (95% CI 44-82%) before and 51% (95% CI 34-67%) after treatment; and hypersomnolence (12 studies) with pooled prevalence 16% (95% CI 7-32%) before and 32% (95% CI 20-48%) after treatment.

Conclusions

Sleep disturbances are highly prevalent among HNC patients across all phases of treatment. Screening of sleep disturbances and intervention to improve this condition should be initiated soon after cancer diagnosis.

eP086

EFFECTIVENESS AND EXPERIENCES OF CANCER PATIENTS WITH SCALP COOLING

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Introduction

Hair loss is a distressing treatment-related adverse event of chemotherapy. Hair loss is often the most visible adverse event and can impact women and men their well-being. Evidence suggests that the use of a scalp cooling device can prevent or lower the amount of hair loss. The aim of this study is to assess cancer patients' experiences about this technique and to examine the effectiveness in relation to hair loss.

Methods

The study used a retrospective, cross-sectional study design. A 26-item questionnaire was developed and validated using the delphi method. A consecutive sample of 126 patients from a large Belgian university hospital participated the study. Data collection took place from January 2018 to April 2018.

Results

Scalp cooling was most often proposed by the specialist (57%). Patients stress levels about this unknown technique were significantly lower at the end of the chemotherapy treatment ($p<0.001$). Scalp cooling was well tolerated by cancer patients. Many patients (74%) also expressed a positive feeling on their appearance. A wig or head cover was used by only 29% of the patients. The effectiveness of scalp cooling was high in combination with paclitaxel or docetaxel.

Conclusions

Cancer patients clearly reported positive experiences and outcomes with scalp cooling. Scalp cooling seems to be particular effective in use of taxanes.

eP087

ELECTROCHEMOTHERAPY IN THE TREATMENT OF ULCERATED MALIGNANT TUMORS: RESULTS FROM THE INSPECT REGISTRY

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Introduction
Electrochemotherapy (ECT) is an effective local treatment for cutaneous tumors and metastasis. Treatment involves the administration of chemotherapeutic drugs followed by delivery of electrical pulses to the tumour. To investigate the effectiveness of ECT in ulcerated versus non-ulcerated cutaneous tumors.
Methods
22 cancer centres of the INSPECT-group consecutively and prospectively uploaded data to a common database. Electrochemotherapy consisted of intratumoural or intravenous injection of bleomycin, followed by application of electric pulses under local or general anaesthesia.
Results
716 patients with ulcerated (452) and non-ulcerated (264) cutaneous tumors were identified from the database with a follow-up of at least 45 days. Most of the lesions were metastases of melanoma and breast cancer and primary epithelial tumors. Patients with ulcerated lesions are significantly older and have larger lesions. Non-ulcerated lesions (overall response 86 %) significantly responded better than ulcerated lesions (overall response 79 %, p=0.0493). In large lesions complete response (CR) versus non-CR between the two groups is statistically significant (p=0.0395). Prior to ECT, patients with ulcerated lesions have significantly more pain. Immediately after ECT pain is significantly raising in non-ulcerated tumors, whereas in ulcerated lesions it remains stable. Odor, suppuration, bleeding and ulceration is improving over time after ECT in ulcerated tumors.
Conclusions
ECT is a highly effective local treatment for cutaneous metastases and tumors, with no severe adverse effects. An intense perioperative pain management in non-ulcerated lesions prior to ECT seems to be mandatory since pain raises after treatment. ECT improves quality of life in patients with ulcerated tumors.

eP088
RADIOTHERAPY FOR PATIENTS WITH UNRESECTED LOCALLY ADVANCED BREAST CANCER

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Introduction
Management of locally-advanced breast cancer (LABC) varies, but in patients without distant metastases treatment often involves neoadjuvant systemic therapy, surgery and radiation. If the primary tumour remains unresectable after systemic therapy, radiotherapy may be used for tumour shrinkage before surgery. When distant metastases are present, locoregional radiotherapy is generally reserved for management of tumour-related symptoms. The present study reviewed our institution's experience of high-dose radiotherapy for unresected LABC.
Methods
A retrospective chart review was conducted of patients with unresected LABC receiving external beam radiotherapy to the breast, chest wall and/or regional lymph nodes. Patients were stratified based on the presence of distant metastases at presentation. Patient demographics, disease characteristics, and treatment outcomes were recorded. Primary outcomes were locoregional progression-free survival (LPFS) and overall survival (OS) from completion of radiotherapy. Patients' symptoms and quality-of-life were also evaluated.
Results
Forty-three cases were identified. Median follow-up was 14 months from completion of radiotherapy. Twenty-four cases (56%) presented with metastatic disease. Tumour shrinkage occurred within 3 months of completing radiotherapy in 36 cases (84%). Ulceration and bleeding were improved in 13 (54%) of the 24 applicable cases. Twenty-six patients (60%) developed moist desquamation but none experienced grade 4 or 5 dermatitis. The

median LPFS was 12 months. LPFS (p=0.2) and OS (p=0.4) were not significantly different between patients with and without distant metastases at presentation.

Table 1: Patient and treatment characteristics

Patient and treatment characteristics	Group 1	Group 2
Demographic information		
Total no. of cases	19	24
Median age [range] in years	60 [28–96]	54.5 [30–76]
Sex		
Female	19 (100%)	22 (92%)
Male	0	2 (8%)
Chemotherapy (pre-RT)	6 (32%)	13 (54%)
Median no. of lines of chemotherapy [range]	2 [1–3]	2 [1–4]
Positive response to chemotherapy	2 (33%)	2 (15%)
No response to chemotherapy	2 (33%)	7 (54%)
Progression on chemotherapy	2 (33%)	3 (23%)
Unknown response to chemotherapy	0	1 (8%)
Endocrine therapy (pre-RT)	5 (26%)	10 (42%)
Tamoxifen	5 (100%)	8 (80%)
Aromatase Inhibitor	3 (60%)	8 (80%)
Positive response to endocrine therapy	1 (20%)	2 (20%)
No response to endocrine therapy	3 (60%)	3 (30%)
Progression on endocrine therapy	0	1 (10%)
Unknown response to endocrine therapy	0	4 (40%)
Radiation treatment	19 (100%)	24 (100%)
Median dose, Gy (range)	50 (40.5–72.0)	50 (25.4–70.0)
Median number of fractions [range]	25 [5–50]	25 [10–50]
Lymph nodes irradiated	16 (84%)	16 (67%)
Boost to tumour bed/lymph nodes	10 (53%)	12 (50%)
Median boost dose, Gy (range)	14.7 (10.0–20.0)	14.1 (6.0–20.0)
Median number boost fractions [range]	8 [2–25]	8 [3–25]
Concurrent chemotherapy	3 (16%)	3 (13%)
Concurrent endocrine therapy	5 (26%)	13 (54%)
Concurrent trastuzumab	5 (26%)	1 (4%)
Moist desquamation	11 (58%)	15 (63%)
Radiation pneumonitis	1 (5%)	0
Surgery (post-RT)		
Mastectomy	5 (26%)	2 (8%)
BCS	0	0

Group 1: patients with no distant metastasis on current presentation; Group 2: patients with distant metastasis on current presentation. RT, radiotherapy; BCS, breast conserving surgery.

Figure 1: Locoregional progression-free survival from last radiation treatment

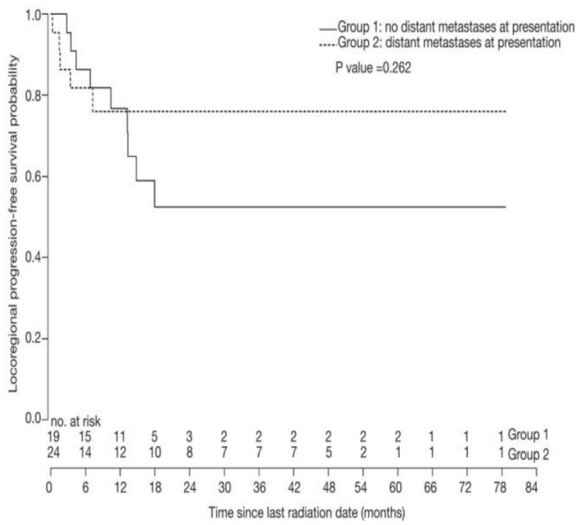
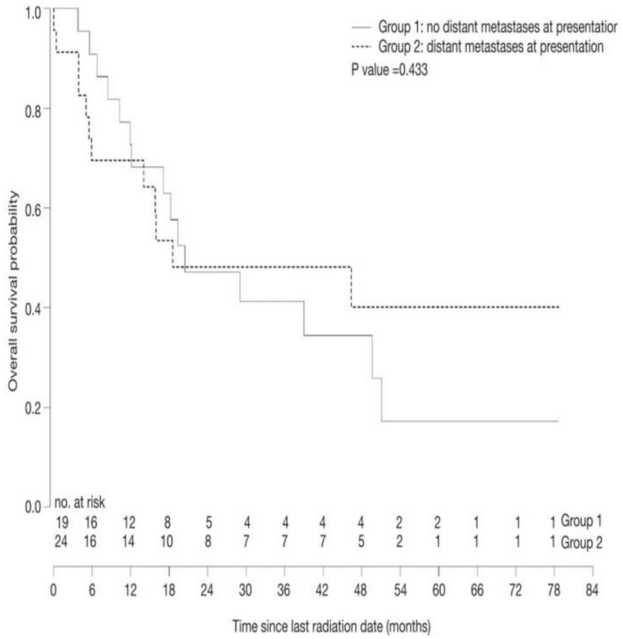


Figure 2: Overall survival from last radiation treatment



Conclusions

Radiotherapy provided good response and symptom control in most patients in this study; there is a role for palliative radiotherapy in patients with LABC.

eP089

AYA-PROVIDER COMMUNICATION ABOUT PRIORITY SYMPTOMS DURING CANCER TREATMENT

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Introduction
Introduction: AYAs (adolescents/young adults) have a distinct cancer experience because of their developmental stage, cancer types, and complex symptoms. A heuristic approach may support AYAs to better understand and communicate their symptoms. This study describes priority symptoms identified by AYAs using a heuristic app, explores severity and bother ratings, reasons for priority designation, self-management strategies, and congruence with provider documentation.
Methods
Methods: AYAs used an iPad-based symptom heuristics app, the Computerized Symptom Capture Tool (C-SCAT) to report symptoms prior to two chemotherapy visits. The C-SCAT supports AYAs to explore their own symptom experience, including designation of priority symptoms. AYAs received their C-SCAT image prior to their provider visit to guide discussion of their symptoms. C-SCAT data were analyzed for priority symptoms, reasons for prioritization, and self-management strategies. Providers' documentation was reviewed for evidence that priority symptoms were discussed.
Results
Results: Seventy-seven AYAs (52% male; mean 20.7 years) identified 169 priority symptoms - half of which were not documented by providers. Lack of energy (n=19), nausea (n=18), difficulty sleeping (n=15), and pain (n=13) were most prevalent and more frequently documented relative to other priority symptoms (X2=5.62; p=.02). Provider documentation frequency did not differ based on symptom severity, bother, reason for priority symptom designation, or AYAs' self-report of self-management strategies.
Conclusions
Conclusions: Encouraging AYAs to identify priority symptoms is an initial step in symptom management, followed by a patient-centered dialogue with providers regarding symptom management. Continued research is needed on the ways AYAs and providers communicate and how AYAs prioritize symptoms.

ePO90
INCREASED STRESS IS ASSOCIATED WITH A HIGHER SYMPTOM BURDEN IN ONCOLOGY PATIENTS UNDERGOING CHEMOTHERAPY

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Introduction
While some oncology patients experience high levels of stress associated with cancer and its treatment, others appear to be more resilient. Less is known about the associations between stress and the severity of common symptoms in oncology patients undergoing chemotherapy. The purposes of this study were to identify subgroups of patients with distinct stress profiles and to evaluate for differences in the severity of fatigue, sleep disturbance, attentional function, depression, and anxiety among these subgroups.
Methods
Latent profile analysis was used to identify subgroups of patients with distinct stress profiles using their responses on the Perceived Stress Scale, Impact of Event Scale-Revised, Life Stressor Checklist-Revised and Connor Davidson Resilience Scale. Differences in symptom severity scores among the latent classes were evaluated using analysis of variance.
Results
Among the 957 patients evaluated, three latent classes were identified (i.e., Stressed (39.9%), Normative (54.3%), Resilient (5.7%)). Compared to the Normative class, patients in the Stressed class were younger, more likely to be female, more likely to live alone, more likely to be unemployed, had less education, had a poorer functional status and a worse comorbidity profile. Compared to the Normative and Resilient classes, patients in the Stressed class had significantly higher scores for morning and evening fatigue, sleep disturbance, trait and state anxiety, and depressive symptoms and worse attentional function scores.
Conclusions
This study is the first to identify subgroups of patients with distinct stress profiles. Increased levels of general and disease specific stress are associated with a higher symptom burden.

eP091
TOLVAPTAN FOR REFRACTORY ASCITES IN PATIENTS WITH HEPATOCELLULAR CARCINOMA

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Introduction
For treatment of hepatic ascites, furosemide and spironolactone are generally used, but renal dysfunction and hyponatremia often occur. Tolvaptan (TLV), a selective oral vasopressin V2-receptor antagonist, which was approved for refractory ascites in Japan in 2013, is known to be effective without causing such adverse events, but its efficacy for ascites in patients with hepatocellular carcinoma (HCC) has not been well defined. To define the efficacy and safety of TLV for ascites in patients with HCC group and predictive factors for its efficacy.
Methods
We retrospectively reviewed medical records of 155 patients, including 73 patients with HCC, who were treated with TLV for ascites in Kurashiki Central Hospital between December 2013 and November 2018. Among them, we compared efficacy between patients with HCC and those without. Efficacy was defined if body weight decreased 3% or more within one week after start of TLV.
Results
The efficacy rate was lower in patients with HCC (35/73, 47.9%) than in those without HCC (52/82, 63.4%) (p=0.05). In both groups, serum sodium increased significantly, but withdrawal of TLV was not required; serum creatinine did not change significantly. Multivariate analysis, baseline sodium level with 136 mmol/L or more was identified as a significant and independent factor for its efficacy in patients with HCC.
Conclusions
TLV was effective for refractory ascites in nearly half of patients with HCC without causing hyponatremia, and serum sodium level may help predicting its efficacy.

eP092
EVALUATION OF PATIENT REPORTED OUTCOME INSTRUMENTS IN IMMUNE CHECKPOINT INHIBITOR CLINICAL TRIALS

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Introduction
Immune checkpoint inhibitors (ICI) have shown clinical benefit in various cancer types. However, linked to their mechanisms of action, these treatments exhibit **specific toxicities that impact patients' quality of life (QoL).** Patient-reported outcome (PRO) instruments are used in clinical trials (CT) to collect symptoms, functional status, and QoL. The question remains whether these instruments capture ICI-specific symptoms and adverse events (AEs). To evaluate their utility in the context of ICI CTs, we conducted a systematic review to identify PRO instruments and juxtapose their content with the most frequently reported AEs.
Methods
Literature was searched using PubMed, Embase, PsycINFO, Medline and CINAHL databases (June 2017) including keywords related to approved ICI, PRO, and Oncology. Symptoms were extracted from PRO instruments and juxtaposed to the AEs reported for the corresponding cohort.
Results
We identified 13 CTs reporting PRO results. Generic QoL and/or cancer-specific questionnaires were the most widely used PRO instruments in ICI CTs. Five studies combined them with tumor site-specific modules, and one included a symptom-specific questionnaire. Among the 12 most frequent AEs, gastrointestinal and systemic events represented 50% of all AEs, followed by dermatological (20%) and endocrine (9%) AEs. Juxtaposition of AEs with the symptoms contained in the PRO instrument(s) showed a 44% coverage, whereas 31% were not covered. Of these, 66% referred to the dermatological system.
Conclusions
Despite the high frequency of dermatological, endocrine and musculoskeletal-related AEs, **these events are not or only partially addressed by the PRO instruments** used. Hence, the adaptation or development of ICI-specific PRO tools requires further investigation.

eP093
EFFECTS OF EVIDENCE-BASED NURSING ON SURGERY-RELATED COMPLICATIONS AND THE QUALITY OF LIFE IN PATIENTS WITH OSTEOSARCOMA

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Introduction
To investigate the effects of evidence-based nursing on surgery-related complications and the quality of life in patients with osteosarcoma.
Methods
45 patients with osteosarcoma underwent surgical treatment were randomly divided into experimental group and control group. Control group received routine nursing and experimental group received evidence-based nursing on the basis of conventional nursing. The length of hospital stay, medical costs, complication rate were documented, and the quality of life and nursing satisfaction were assessed in both groups.
Results
The length of hospital stay was shorter, hospital costs were lower and complications were less frequent in experimental group than those in control group (all $P<0.05$). The quality of life and nursing satisfaction in experimental group were significantly higher than those in control group (both $P<0.05$).
Conclusions
The implementation of evidence-based nursing after surgery can significantly reduce the incidence of complications, improve the quality of life and satisfaction with care in patients with osteosarcoma.

eP094
USABILITY OF AN ONLINE APPLICATION FOR MONITORING CANCER PATIENT-REPORTED BURDEN OF SIDE EFFECTS IN DAILY CLINICAL PRACTICE

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Introduction
Therapy outcomes and compliance can be improved through active monitoring of patient-reported (PRO) side effects. To improve symptom management in Dutch oncological care, we developed an online self-reporting application that presents patient-tailored side-effects information, and allows patients to report and visualize their own side effect scores. Here, we report on usability and use of the application.
Methods
Usability of our application ("BijKanker") has been evaluated in 7 Dutch hospitals. At least once a week patients reported on 12 standard side effects, based on the Dutch 'nursing problem analyses'. During the first log-in and 4 months after initiating their systemic therapy, patients completed a questionnaire about information provision and their experiences with the application. Personalized feedback about the burden of side effects was provided by a longitudinal graph for patients and health care providers.
Results
Patients (n=99) reported in total 1,661 side effects (mean= 10 times data entrance per patient) with highest incidences for neuropathy (20%), nausea (15%) and diarrhoea (13%). Patients rated BijKanker as understandable (74% positive, 23% neutral) and moderately easy to use (33% positive, 33% neutral) and thought the feedback function was important (57% positive, 21% neutral).
Conclusions
Active monitoring of side effects through an online self-reporting application is feasible in Dutch oncological care. Patients experienced BijKanker as a useful tool for self-care management. Current development of the application focusses on allowing patients to report on a treatment-tailored list of side effects, specified per type of cytotoxic agent(s), using the PRO-Common Terminology Criteria for Adverse Events (PRO-CTCAE) for terminology and definitions.

eP095
EFFECTIVENESS OF THE CANCER SYMPTOM MANAGEMENT SYSTEM: SYMPTOM MANAGEMENT IMPROVES YOUR LIFE (SMILE): A RANDOMIZED CONTROLLED TRIAL

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Introduction
Electronic systems can facilitate symptom monitoring and management. The purpose of this study was to evaluate the effect of the Cancer Symptom Management System: Symptom Management Improves your LifE (SMILE) which combined electronic symptom management and evidence-based patient education for cancer symptom management.
Methods
A nonblinded, randomized controlled trial was conducted. Cancer patients starting adjuvant or palliative chemotherapy (CTx) were randomized to control (symptom monitoring), experimental 1 (Exp 1; symptom monitoring + report), or experimental 2 (Exp 2; symptom monitoring + report + ONS PEP-guided evidence-based symptom management education) groups in a 1:2:2 ratio. Generalized estimating equations were utilized to analyze the data (N=249).
Results
Fatigue and sleep disturbance changes were different between Exp 1 and Exp 2 groups, among patients receiving adjuvant CTx, (p=.042 and p=.008). Fatigue gradually decreased after a peak at the 1st CTx cycle in Exp 2, whereas Exp 1 experienced increasing fatigue until the 3rd CTx cycle. A gradual decrease in sleep disturbance was observed in Exp 2 after the 2nd CTx cycle, whereas Exp 1 experienced a steady increase in the symptom. Participants were willing to monitor symptoms using the Cancer Symptom Management System. Evidence-based symptom management education was considered as easy to understand and helpful.
Conclusions
The Cancer Symptom Management System: SMILE incorporating evidence-based symptom management education effectively managed fatigue and sleep disturbance after adjuvant CTx. Integrating electronic symptom management system and evidence-based symptom management education is recommended to better manage fatigue and sleep disturbance among patients receiving adjuvant CTx.

eP096
UNMET NEEDS IN THE PHYSICAL AND LIVING DOMAIN CONTRIBUTES TO GASTRIC CANCER PATIENTS' QUALITY OF LIFE

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Introduction
Cancer patients come across various unmet needs throughout cancer journey. Gastric cancer patients' unmet needs has been less well documented. The purpose of this study was to identify factors related to unmet needs and its relationship with quality of life (QOL) among gastric cancer patients.
Methods
A correlational study was conducted including 180 gastric cancer patients. Unmet needs, anxiety, depression, physical symptoms, and QOL were measured using the SCNS-SF 34, HADS, MDASI, and EORTC QLQ-C30 Korean versions. Pearson correlation, multiple regression and path analyses were utilized to analyze the data.
Results
Highest unmet needs were identified in the health system & information domain, followed by the patient care and support domain. Unmet needs in the physical and daily living domain demonstrated highest correlation with QOL (r=-0.52, p<.001), and significant negative influence on patients' QOL (r2=0.27, p<.001). Physical symptoms and depression explained 34.8% of total variance of unmet needs in the physical and daily living domain (p<.001). Both physical symptoms and depression demonstrated direct and indirect negative effect on patients' QOL which is mediated by unmet needs in the physical and daily living domain. The model explained 54.1% of total variance in the gastric cancer patients' QOL (p<.001).
Conclusions
Gastric cancer patients' unmet needs and its contribution to QOL were explained. Along with interventions to manage physical symptoms and depression, special attention needs to be paid to be aware of and satisfy unmet needs in the physical and daily living domain to improve QOL of patients with gastric cancer.

eP097
THE EVIDENCE IN SYMPTOM AND QUALITY OF LIFE ASSESSMENT IN PATIENTS WITH CANCER

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Introduction
Randomized Controlled Trials (RCT) determine high level of evidence, but are difficult to perform in the very sick.
Methods
This is a comprehensive review of RCT, systematic and comprehensive scope reviews on cancer symptoms and Health Related Quality of Life (QOL) from 2006 through 2017 to evaluate factors influencing the evidence of the assessment process –instruments, symptom descriptors, scales and patient-reported outcome measures (PROM).
Results
Five systematic, three comprehensive scope reviews and one RCT provided high level of evidence in the symptom and QOL assessment process. Valid and reliable instruments ESAS, MDASI, SDS, EORTC-QLQC-30, FACT-G and specific study designed comprehensive PROM are recommended, but may not be always clinically feasible. Numerical Rating Scales (NRS) are preferred for pain, relief scales are more sensitive than severity scales. Cut out points on the ESAS 0-10 NRS for moderate symptoms are: pain > 5; other symptoms >4; for severe symptoms > 7-8. Self -assessed PROM improve provider-physician communications, physical symptoms and to a lesser extent QOL, psychological outcomes, but can decrease anxiety and depression during patient communications.
Conclusions
The insufficient evidence data on cancer symptom and QOL assessments precludes developing guidelines, but the following recommendations can be made: 1) Valid, reliable and comparable instruments should be balanced with clinical experience. 2) Self-report is a priority, but caregiver information for physical symptoms is reliable. 3) PROM influence physical symptoms management more than QOL. 4) Generalizable results depend on scale comparability, population, time of assessment, stratification, >3 raters, consistent implementation and continuous provider and patient education on PROM.

eP098
PROTECTIVE EFFECTS OF ORAL SUPPLEMENTS OF ROSE ANTHOCYANINS AGAINST IN VIVO ANGIOGENESIS IN A LYMPHOMA MODEL OF MICE

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Introduction
The current anti-cancer therapy has limitations of not addressing most of the cancer growth strategies while leaving behind severe side effects. The

quest for safer but effective anti-cancer therapy is constant. Anthocyanins, the colored derivatives of polyphenols, found among fruits, vegetables and flowers. Rose petals have major varieties of anthocyanins. Due to no data about anticancer effects, it was envisaged to study in vivo anti-angiogenesis in a lymphoma model of mice.

Methods

Albino male mice (4 week old, n=16) were rendered lymphoma by intraperitoneally introducing DAUDI cells (1 million cells/animal, single-injection). A batch of lymphoma animal group were supplemented orally with rose-anthocyanins (50mg/kg bw/d, daily, n=8) for all 30 days. A group of animals received only rose-anthocyanins (n=8). Animals were observed for body weight and pain symptoms for 30 days. Terminally the animals were euthanized, peritoneal zones were collected for histopathological studies while blood was assessed for cancer markers.

Results

Mice exposed to DAUDI cells demonstrated a slight but significant increase in the body weight gained. There were no lumps found on peritoneal tissue while neoplasmic blood vessels were apparent. New blood vessels with excessive branching are suggestive of carcinogenesis caused by the DAUDI cells. DAUDI treated mice receiving the rose-anthocyanins showed remarkable recovery against angiogenesis while showing improved pain response. Blood markers for inflammatory response and different lymphocyte patterns were also ameliorated with rose-anthocyanins among DAUDI mice.

Conclusions

Our results strongly suggest the anti-angiogenic properties of rose-anthocyanins. Future studies are focused on individual anthocyanin types from various colored plant sources.

eP099

PSYCHOLOGICAL MORBIDITY IN WOMEN DIAGNOSED WITH DUCTAL CARCINOMA IN-SITU COMPARED TO WOMEN WITH EARLY BREAST CANCER RECEIVING RADIOTHERAPY

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Introduction

Despite having an excellent prognosis, patients with ductal carcinoma in-situ (DCIS) report significant anxiety and depression following their diagnosis. This study evaluated psychological morbidity using the Edmonton Symptom Assessment Scale (ESAS) in patients with DCIS compared to women with early stage invasive breast cancer (EIBC) receiving radiotherapy (RT).

Methods

We identified patients diagnosed with DCIS or EIBC (stage I or II breast cancer) from 2011-2017 who had at least one ESAS completed pre- and post-RT. Data on systemic treatment, radiation, patient demographics, and disease stage were extracted from existing databases. Psychological morbidity was evaluated through measurement of depression, anxiety and overall wellbeing within the ESAS. Wilcoxon rank-sum test or chi-square test was performed for continuous or categorical variables.

Results

This study included 137 women with DCIS and 963 women with EIBC (Table 1). ESAS was completed on average 28 days before RT (baseline) and 142 days after RT. Baseline ESAS scores showed significantly higher rates of depression among women with EIBC compared to those with DCIS (p=0.006) (Table 2). Patients with EIBC also reported higher levels of anxiety and lower overall wellbeing than patients with DCIS, but this difference was not statistically significant. Post-radiation ESAS scores showed significantly higher anxiety in patients with EIBC compared to DCIS (p=0.049) (Table 2). Post radiation measures of anxiety and overall wellbeing were higher in patients with EIBC but differences were not statistically significant.

Table 1: Demographic and Clinical Factors Group 1(DCIS), Group 2 (EIBC) and Group 3 (EIBC No Chemotherapy)

	Group 1 (N=137)	Group 2 (N=963)	Group 1 vs 2 p-value	Group 3 (N=518)	Group 1 vs 3 p-value
Demographics					
Age at RT start (years)			0.0739		**<.0001**
N	137	962		518	
Mean ± SD	57.10 ± 10.79	59.06 ± 12.22		62.47 ± 12.03	
Median (Inter-quartiles)	56.2 (49.8, 64.4)	58.9 (49.9, 68.0)		62.0 (52.8, 71.3)	
Min, Max	31, 86	25, 94		35, 94	
Age Groups at RT start			0.4291		**0.0015**
<30 years	0 (0.00%)	4 (0.42%)		0 (0.00%)	
30-<40 years	4 (2.92%)	41 (4.26%)		9 (1.74%)	
40-<50 years	33 (24.09%)	198 (20.56%)		79 (15.25%)	
50-<60 years	48 (35.04%)	273 (28.35%)		137 (26.45%)	
60-<70 years	33 (24.09%)	249 (25.86%)		140 (27.03%)	
70-<80 years	16 (11.68%)	151 (15.68%)		113 (21.81%)	
≥80 years	3 (2.19%)	46 (4.78%)		40 (7.72%)	
Unknown	0 (0.00%)	1 (0.10%)		0 (0.00%)	
Clinical Factors					
Adjuvant chemotherapy in all patients			**0.0087**		
No	90 (65.69%)	518 (53.79%)		518 (100%)	
Yes	47 (34.31%)	445 (46.21%)		0 (0%)	
Chemotherapy Class only in patients received chemotherapy (n=492)			**0.0007**		
Finished >6 months before first ESAS	2 (4.26%)	7 (1.57%)			
Finished within 6 months before first ESAS	40 (85.11%)	257 (57.75%)			
First ESAS during chemotherapy	5 (10.64%)	180 (40.45%)			
Chemotherapy start after second ESAS	0 (0.00%)	1 (0.22%)			
Hormone therapy			**<.0001**		**<.0001**
No	88 (64.23%)	145 (15.06%)		59 (11.39%)	
Yes	41 (29.93%)	792 (82.24%)		445 (85.91%)	
Unknown	8 (5.84%)	26 (2.70%)		14 (2.70%)	
Initiation of hormonal therapy: After or Concurrent with radiation (n=833)			0.4799		0.1999
After	14 (34.15%)	223 (28.16%)		115 (25.84%)	
Concurrent	22 (53.66%)	498 (62.88%)		298 (66.97%)	
Unknown	5 (12.20%)	71 (8.96%)		32 (7.19%)	
Radiation fractionation: ≤16 or >16			**<.0001**		**<.0001**
>16	112 (81.75%)	544 (56.49%)		177 (34.17%)	
≤16	25 (18.25%)	419 (43.51%)		341 (65.83%)	
Boost radiation			**0.0035**		**0.0067**
No	100 (72.99%)	578 (60.02%)		313 (60.42%)	
Yes	37 (27.01%)	385 (39.98%)		205 (39.58%)	
Concurrent or Subsequent or Simultaneous Boost radiation (n=422)			0.0512		0.0011
Subsequent (Sub)	23 (62.16%)	295 (76.62%)		174 (84.88%)	
Simultaneous (Sim)	14 (37.84%)	90 (23.38%)		31 (15.12%)	
Locoregional RT			0.1135		**<.0001**
No	96 (70.07%)	608 (63.14%)		451 (87.07%)	
Yes	41 (29.93%)	355 (36.86%)		67 (12.93%)	
RT Site			0.3915		**0.0097**
Chest	25 (18.25%)	219 (22.74%)		48 (9.27%)	
Breast	112 (81.75%)	741 (76.95%)		468 (90.35%)	
Unknown	0 (0.00%)	3 (0.31%)		2 (0.39%)	

Table 2: ESAS Scores before and after radiation therapy Group 1 (DCIS), Group 2 (EIBC) and Group 3 (EIBC No Chemotherapy)

	Group 1 (N=137)	Group 2 (N=963)	Group 1 vs 2 p-value	Group 3 (N=518)	Group 1 vs 3 p-value
ESAS before RT					
Depression			**0.0060**		**0.0385**
N	137	962		518	
Mean ± SD	1.25 ± 2.31	1.65 ± 2.28		1.61 ± 2.35	
Median (Inter-quartiles)	0.0 (0.0, 1.0)	0.0 (0.0, 3.0)		0.0 (0.0, 3.0)	
Min, Max	0, 10	0, 10		0, 10	
Anxiety			0.2574		0.0969
N	137	962		518	
Mean ± SD	2.20 ± 2.67	2.41 ± 2.57		2.58 ± 2.70	
Median (Inter-quartiles)	1.0 (0.0, 4.0)	2.0 (0.0, 4.0)		2.0 (0.0, 4.0)	
Min, Max	0, 10	0, 10		0, 10	
Wellbeing			0.0780		0.4919
N	137	962		518	
Mean ± SD	2.43 ± 2.74	2.63 ± 2.41		2.46 ± 2.46	
Median (Inter-quartiles)	1.0 (0.0, 4.0)	2.0 (1.0, 4.0)		2.0 (0.0, 4.0)	
Min, Max	0, 10	0, 10		0, 10	
ESAS after RT					
Depression			0.1176		0.2446
N	137	963		518	
Mean ± SD	1.27 ± 2.03	1.66 ± 2.39		1.70 ± 2.57	
Median (Inter-quartiles)	0.0 (0.0, 2.0)	0.0 (0.0, 3.0)		0.0 (0.0, 3.0)	
Min, Max	0, 9	0, 10		0, 10	
Anxiety			**0.0486**		0.0684
N	137	963		518	
Mean ± SD	1.63 ± 2.14	2.10 ± 2.48		2.14 ± 2.58	
Median (Inter-quartiles)	1.0 (0.0, 3.0)	1.0 (0.0, 3.0)		1.0 (0.0, 3.0)	
Min, Max	0, 10	0, 10		0, 10	
Wellbeing			0.1231		0.1542
N	137	962		518	
Mean ± SD	2.34 ± 2.44	2.68 ± 2.55		2.71 ± 2.63	
Median (Inter-quartiles)	2.0 (0.0, 4.0)	2.0 (1.0, 5.0)		2.0 (0.0, 5.0)	
Min, Max	0, 9	0, 10		0, 10	

Conclusions

Women with DCIS experience relatively less psychological morbidity than women with EIBC, pre- and post- radiation treatment.

ePP100
SYMPTOM CLUSTERS ACROSS THE TRAJECTORY OF RADIATION THERAPY IN PATIENTS WITH BREAST CANCER

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Introduction

Symptoms experienced by breast cancer patients often cluster together in groups known as "symptom clusters". The purpose of this analysis is to determine the symptom clusters before, during, and after radiotherapy (RT) in women with breast cancer.

Methods

All breast cancer patients receiving RT completed the Edmonton Symptom Assessment Scale (ESAS) before, during, and after RT. Exploratory factor analysis (EFA), principal component analysis (PCA), and hierarchical cluster analysis (HCA) were used to identify symptom clusters among the nine ESAS items at all three time points (Tables 1, 2).

Results

A total of 1224 patients were included in this study. The PCA and EFA identified the same two symptom clusters before the start of RT: 1) pain, tiredness, nausea, drowsiness, appetite, and dyspnea; 2) depression, anxiety, and wellbeing (Table 1). The HCA further split the symptoms into three clusters (Table 2). Wellbeing, depression, and anxiety consistently clustered together. Among the ESAS scores collected during and after RT, each statistical method identified different symptom clusters. For the symptom clusters experienced during RT, the following symptoms were always in the same cluster: wellbeing, depression, and anxiety; nausea and appetite; drowsiness and dyspnea. Following RT, depression and anxiety consistently clustered together, with nausea and appetite in the other cluster.

Table 1. Factor Loadings and Final Communality from the PCA and EFA Methods

	Before RT			During RT			After RT		
PCA				**PCA**			**PCA**		
Symptom	Component 1	Component 2	Final Communality	Component 1	Component 2	Final Communality	Component 1	Component 2	Final Communality
Pain	**0.53**	0.37	0.422	**0.58**	0.29	0.419	**0.58**	0.37	0.470
Tiredness	**0.69**	0.46	0.689	**0.57**	0.56	0.631	**0.80**	0.29	0.716
Nausea	**0.75**	0.04	0.561	0.01	**0.82**	0.680	0.13	**0.89**	0.815
Drowsiness	**0.71**	0.34	0.621	0.40	**0.67**	0.607	**0.65**	0.39	0.571
Appetite	**0.61**	0.36	0.501	0.26	**0.76**	0.650	0.38	**0.66**	0.585
Dyspnea	**0.70**	0.18	0.517	0.33	**0.54**	0.398	**0.49**	0.47	0.459
Depression	0.23	**0.86**	0.795	**0.85**	0.17	0.752	**0.79**	0.24	0.681
Anxiety	0.18	**0.88**	0.798	**0.88**	0.13	0.789	**0.83**	0.16	0.714
Wellbeing	0.39	**0.72**	0.673	**0.75**	0.29	0.645	**0.77**	0.26	0.659
EFA				**EFA**			**EFA**		
Symptom	Factor 1	Factor 2	Final Communality	Factor 1	Factor 2	Final Communality	Factor 1		Final Communality
Tiredness	**0.77**	0.33	0.702	0.44	**0.64**	0.594	0.81		0.656
Drowsiness	**0.71**	0.27	0.578	0.32	**0.67**	0.554	0.72		0.514
Dyspnea	**0.57**	0.21	0.367	0.28	**0.47**	0.300	0.61		0.370
Appetite	**0.55**	0.33	0.408	0.24	**0.68**	0.519	0.62		0.390
Nausea	**0.53**	0.16	0.309	0.08	**0.60**	0.367	0.53		0.278
Pain	**0.52**	0.29	0.347	**0.41**	0.38	0.311	0.63		0.401
Anxiety	0.27	**0.82**	0.736	**0.89**	0.19	0.836	0.76		0.575
Depression	0.31	**0.81**	0.749	**0.81**	0.25	0.721	0.77		0.591
Wellbeing	0.50	**0.55**	0.555	**0.59**	0.42	0.524	0.76		0.578

Table 2. Symptom Clusters from the HCA Method

	Before RT				During RT				After RT			
		R^2				R^2				R^2		
		Own Cluster	Next Cluster	$\frac{1-R^2_{Own\ cluster}}{1-R^2_{Next\ cluster}}$		Own Cluster	Next Cluster	$\frac{1-R^2_{Own\ cluster}}{1-R^2_{Next\ cluster}}$		Own Cluster	Next Cluster	$\frac{1-R^2_{Own\ cluster}}{1-R^2_{Next\ cluster}}$
Cluster 1	Pain	0.5186	0.2137	0.6122	Cluster 1	Pain	0.4982	0.2166	0.6405	Cluster 1	Pain	0.5531	0.2227	0.5757
	Tiredness	0.7433	0.3586	0.4003		Depression	0.7207	0.2803	0.3881		Tiredness	0.7472	0.3818	0.4089
	Drowsiness	0.6695	0.2648	0.4496		Anxiety	0.7587	0.2412	0.3180		Drowsiness	0.6323	0.2871	0.5158
	Dyspnea	0.5360	0.2050	0.5837		Wellbeing	0.6600	0.3049	0.4891		Wellbeing	0.6329	0.3894	0.6013
Cluster 2	Depression	0.7979	0.2798	0.2807	Cluster 2	Tiredness	0.7309	0.3744	0.4301		Dyspnea	0.5068	0.2193	0.6317
	Anxiety	0.7955	0.2507	0.2729		Drowsiness	0.7251	0.2592	0.3711	Cluster 2	Nausea	0.7293	0.2258	0.3496
	Wellbeing	0.6862	0.3838	0.5093		Dyspnea	0.5407	0.1769	0.5580		Appetite	0.7293	0.2989	0.3861
Cluster 3	Nausea	0.7216	0.2343	0.3636	Cluster 3	Nausea	0.7705	0.1914	0.2839	Cluster 3	Depression	0.8775	0.4209	0.2115
	Appetite	0.7216	0.2889	0.3915		Appetite	0.7705	0.3063	0.3309		Anxiety	0.8775	0.4275	0.2140

Table 3. Comparison of Symptom Clusters Before, During, and After RT

	Before RT	During RT	After RT
PCA	Cluster 1	Cluster 1	Cluster 1
	Pain	Pain	Pain
	Tiredness	Tiredness	Tiredness
	Nausea	Depression	Drowsiness
	Drowsiness	Anxiety	Dyspnea
	Appetite	Wellbeing	Depression
	Dyspnea		Anxiety
		Cluster 2	Wellbeing
	Cluster 2	Drowsiness	
	Depression	Dyspnea	Cluster 2
	Anxiety	Nausea	Nausea
	Wellbeing	Appetite	Appetite
EFA	Cluster 1	Cluster 1	Cluster 1
	Pain	Tiredness	Pain
	Tiredness	Nausea	Tiredness
	Nausea	Drowsiness	Drowsiness
	Drowsiness	Appetite	Dyspnea
	Appetite	Dyspnea	Depression
	Dyspnea		Anxiety
		Cluster 2	Wellbeing
	Cluster 2	Pain	Nausea
	Depression	Depression	Appetite
	Anxiety	Anxiety	
	Wellbeing	Wellbeing	
HCA	Cluster 1	Cluster 1	Cluster 1
	Pain	Pain	Pain
	Tiredness	Depression	Tiredness
	Drowsiness	Anxiety	Drowsiness
	Dyspnea	Wellbeing	Dyspnea
			Wellbeing
	Cluster 2	Cluster 2	
	Depression	Tiredness	Cluster 2
	Anxiety	Drowsiness	Nausea
	Wellbeing	Dyspnea	Appetite
	Cluster 3	Cluster 3	Cluster 3
	Nausea	Nausea	Depression
	Appetite	Appetite	Anxiety

Conclusions

Among the symptom clusters derived before, during, and after RT, the following symptoms consistently presented together: depression and anxiety, nausea and appetite, pain and tiredness, and drowsiness, dyspnea, and tiredness (Table 3). Well-defined symptom clusters in this population can improve management of symptoms.

ePP101
PREDICTORS OF DYSPNEA IN PATIENTS WITH ADVANCED CANCER

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Introduction

Over 70% of patients with advanced cancer experience dyspnea. Dyspnea is predictive of shorter survival and negatively effects quality of life. The present study aimed to identify predictors of the presence and severity of dyspnea in advanced cancer patients.

Methods

Patient characteristics and Edmonton Symptom Assessment System (ESAS) shortness of breath scores were analyzed from a prospective database of patients attending a palliative radiotherapy clinic. Using the ESAS, dyspnea was classified as mild [1-3], moderate [4-6] or severe [7-10]. Logistic regression analysis and generalized estimating equations were used to identify predictors of the severity of dyspnea and presence of moderate/severe dyspnea (ESAS ≥4) at patients' first visit and over time, respectively.

Results

Table 1. Significant predictive factors of dyspnea severity (none, mild, moderate, severe) from univariate (p= < 0.10) and multivariable analysis (p= < 0.05) at the first visit and over time

	Parameter Estimation		Model Fitting Information *	
Predictive factors	p-value	OR (95% CI)	R^2 (%)	Model Fitting QIC
Univariate Analysis				
At First Visit				
PRFS ≥3 vs. <3 (Yes vs. No)	0.0201	1.783 (1.091, 2.915)	2.17	
Presence of liver metastasis (Yes vs. No)	0.0140	1.928 (1.143, 3.246)	2.40	
Pulse Oximetry < 90 (Yes vs. No)	0.0472	2.696 (0.965, 7.525)	1.58	
History of respiratory conditions (Yes vs. No)	0.0058	2.414 (1.270, 4.577)	2.99	
Over Time				
Time (months)	0.4308	1.036 (0.948, 1.132)		913.90
KPS < 40 (Yes vs. No)	0.0141	2.664 (1.219, 5.822)		
Time (months)	0.3151	1.047 (0.958, 1.144)		910.20
Presence of lymph node metastasis (Yes vs. No)	0.0033	2.031 (1.266, 3.257)		
Time (months)	0.6379	1.022 (0.934, 1.118)		913.33
Presence of liver metastasis (Yes vs. No)	0.0062	1.949 (1.208, 3.145)		
Time (months)	0.4359	1.037 (0.946, 1.137)		925.57
Previous multiple radiation treatments (Yes vs. No)	0.0473	0.349 (0.124, 0.987)		
Time (months)	0.4702	1.032 (0.947, 1.125)		863.49
History of respiratory conditions (Yes vs. No)	0.0003	2.927 (1.640, 5.226)		
Time (months)	0.4922	1.034 (0.941, 1.136)		818.23
Pulse oximetry <90 (Yes vs. No)	<.0001	5.470 (2.448,12.223)		
Time (months)	0.7400	1.015 (0.929, 1.110)		895.22
PRFS ≥3 (Yes vs. No)	0.0225	1.613 (1.070, 2.433)		
Multivariable Analysis				
At first visit				
Presence of liver metastasis (Yes vs. No)	0.0118	2.039 (1.173, 3.541)	7.09	
PRFS ≥3 vs. <3 (Yes vs. No)	0.0310	1.748 (1.046, 2.924)		
History of respiratory conditions (Yes vs. No)	0.0285	2.091 (1.059, 4.108)		
Over Time				
Time (months)	0.2770	1.057 (0.957, 1.167)		764.37
Presence of lymph node metastasis (Yes vs. No)	0.0186	1.787 (1.102, 2.899)		
Presence of liver metastasis (Yes vs. No)	0.0205	1.800 (1.095, 2.958)		
Previous multiple radiation treatments (Yes vs. No)	0.0121	0.322 (0.133, 0.780)		
Pulse oximetry <90 (Yes vs. No)	0.0033	3.318 (1.490, 7.392)		
History of respiratory conditions (Yes vs. No)	0.0056	2.498 (1.307, 4.774)		

*Bolded p-values are statistically significant
*Analysis at first visit with logistic regression and over time with GEE multivariate analysis

Table 2. Significant predictive factors of moderate/severe dyspnea (ESAS ≥ 4) from univariate (p < 0.10) and multivariable analysis (p < 0.05) at the first visit and over time

	Parameter Estimation		Model Fitting Information *	
Predictive factors	p-value	OR (95% CI)	R^2 (%)	Model Fitting QIC
Univariate Analysis				
At First Visit				
PRFS ≥3 vs. <3	0.0048	2.353 (1.307, 4.292)	3.30	
Presence of lung metastasis (Yes vs. No)	0.0278	2.036 (1.076, 3.807)	1.88	
History of respiratory conditions (Yes vs. No)	0.0023	3.009 (1.482, 6.081)	3.78	
Over Time				
Time (months)	0.9855	0.999 (0.887, 1.125)		427.88
PRFS ≥ 3 (Yes vs. No)	0.0116	1.905 (1.155, 3.145)		
Time (months)	0.6348	1.029 (0.915, 1.158)		433.93
Presence of lymph node metastasis (Yes vs. No)	0.0027	2.439 (1.363, 4.364)		
Time (months)	0.9218	1.006 (0.897, 1.128)		439.32
Presence of liver metastasis (Yes vs. No)	0.0262	1.971 (1.084, 3.584)		
Time (months)	0.6493	1.025 (0.920, 1.142)		415.33
History of respiratory conditions (Yes vs. No)	0.0021	2.986 (1.489, 5.987)		
Time (months)	0.6418	1.026 (0.920, 1.145)		436.98
KPS <40 (Yes vs. No)	0.0086	3.125 (1.336, 7.311)		
Time (months)	0.7501	1.020 (0.903, 1.151)		386.33
Pulse oximetry <90 (Yes vs. No)	<.0001	6.447 (2.549, 16.307)		
Multivariable Analysis				
At First Visit				
Presence of lung metastasis (Yes vs. No)	0.0407	2.034 (1.023, 4.008)	7.58	
PRFS ≥3 (Yes vs. No)	0.0087	2.304 (1.241, 4.348)		
History of respiratory conditions (Yes vs. No)	0.0137	2.602 (1.205, 5.565)		
Over Time				
Time (months)	0.4209	1.052 (0.929, 1.192)		360.65
Presence of lymph node metastasis (Yes vs. No)	0.0031	2.506 (1.364, 4.604)		
Pulse oximetry <90 (Yes vs. No)	0.0004	5.147 (2.080, 12.735)		
History of respiratory conditions (Yes vs. No)	0.0353	2.367 (1.061, 5.281)		

*Bolded p-values are statistically significant
*Analysis at first visit with logistic regression and over time with GEE multivariate analysis

Multivariable analysis (n=252) showed liver metastases (P=0.01), a history of respiratory conditions (P=0.03) and PRFS ≥3 (P=0.03) were predictive of dyspnea severity at the first visit. Over time, liver metastases (P=0.02), lymph node metastases (P=0.02), a history of respiratory conditions (P=0.006) and pulse oximetry<90 (P=0.003) were predictive of greater dyspnea severity. Patients with multiple radiation treatments in the thorax region were less likely to have severe dyspnea symptoms over time (P=0.01). Lung metastases (P=0.04), a history of respiratory conditions (P=0.01) and PRFS ≥3 (P=0.009) were predictive of moderate/severe dyspnea at the first visit. Over time, lymph node metastases (P=0.003), a history of respiratory conditions (P=0.04) and pulse oximetry<90 (P=0.0004) were predictive of moderate/severe dyspnea.

Conclusions

Increased awareness of dyspnea predictors can promote early intervention for improved patient care and the creation of screening tools for clinical practice.

eP102
TO STUDY AND ANALYZE THE PATTERN OF SYMPTOMS OF PATIENTS PRESENTING IN PALLIATIVE CARE WARD AT REGIONAL CANCER CENTRE OF INDIA

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Introduction
Knowledge of the prevalence of symptoms is essential for the medical care of all patients. Identification of symptoms is prerequisite for making diagnoses and therefore formulating management plans. Awareness of the relative prevalence of symptoms contributes to the identification of patients' needs in terms of symptom control, and therefore to the rational provision and planning of cancer treatment and Palliative care.
Methods
Our study is an observational cross-sectional study of 502 cancer patients admitted in Palliative Care Unit. Patients diagnosed with cancer and giving consent were assessed using the modified Edmonton Symptom Assessment Scale (ESAS).
Results
Assessment of symptoms was done using ESAS in 502 patients. Pain (92.03%) was the most common symptom, followed by fatigue in 278 (55.38 %,) patients, loss of appetite (43.23%) in 217 patients, constipation(35.66%) in 179, nausea 183(36.45%) and breathlessness in 31.47%. In 105 Gastro-intestinal patients, symptom presentation were pain in 96%, nausea in 72%, fatigue in 67%, decreased appetite in 66%. Symptom presentation in 83 Genitourinary cancer were pain in 88%, constipation in 77%, fatigue in 53%, nausea in 47%. Symptom presentation in 72 Thoracic cancer was pain in 88%, breathlessness in 80%, anxiety in 58%, and fatigue in 54%. Symptom presentation in 71 head and neck cancer patients were pain in 95%, fatigue in 63%, dysphagia in 49%.
Conclusions
Using our results, a comprehensive care plan for pain and other symptom can be formulated for all cancer patients, to give them the best possible supportive and palliative care

eP103
HIGH FLOW NASAL CANNULA AND HOSPICE AND PALLIATIVE CARE (HI-HOPES)

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Introduction
High Flow nasal cannula (HFNC) is commonly used in patients with respiratory distress and hypoxemia. HFNC has been proposed as a palliative measure for managing breathlessness in patients near end of life who wish to forgo intubation. HFNC delivery in non-hospital settings is limited. Initiating HFNC may preclude patients from fulfilling wishes to die at home and may limit the use of hospice.
Methods
This is a retrospective chart review of all patients admitted to a large, urban academic medical center in 2016 who used HFNC.
Results
286 patients with orders for HFNC were included. Patients were an average of 60.6 years old, >70% of patients were members of racial or ethnic minority groups, and 51.4% were male. Despite having a high risk of mortality (average age-adjusted Charleson Comorbidity Index = 5.8), only 34 (11.8%) had a DNR order during that admission and 47 (16.4%) received a palliative care consult. Length of stay was prolonged (mean = 23.2 days, median = 15.4 days). Hospital mortality rate was 23.4%. Less than half of patients (130,45.5%) were discharged home. Few were referred for hospice (10,3.5%).
Conclusions
Although many patients were able to discharge home after initiating HFNC in the hospital, hospital mortality was high, and few received hospice or palliative care services. The use of HFNC may delay or limit the receipt of hospice and palliative care services. This finding should be further investigated and barriers to provision of HFNC in the home should be addressed to provide optimal care for patients at end of life.

eP104
ASSESSING THE IMPACT OF CANCER CARE ONTARIO'S PSYCHOSOCIAL ONCOLOGY & PALLIATIVE CARE PATHWAY: DOES RATE OF PHYSICIAN DOCUMENTATION CORRELATE WITH UNPLANNED EMERGENCY ROOM (ER) VISITS?

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Introduction
Patients with Head and Neck Cancer(HNC) experience high symptom burden, including emotional distress. Many require, but do not always access, specialized care services. Documentation of symptom screening and clinician response can help the inter-professional team provide integrated person-centered care. This study examined whether HNC clinic documentation of symptoms or response positively correlated with reduced unplanned ER visits.
Methods
This retrospective chart review included data extraction from "routine care" physician note. "ER group" patients were those who visited a physician in the HNC clinic from June -August 2016, completed the Edmonton Symptom Assessment Scale(ESAS) screening up to 30 days prior, and presented to the ER with HNC symptoms up to 30 days after the clinic visit (n=46). These were matched with patients who attended the HNC clinic within the same time period, but did not subsequently visit the ER (non-ER group), using these criteria:1) gender; 2) age +/- 5 years; 3) total ESAS score +/- 5; 4) score of two ESAS domains most relevant to ER visit +/- 2; 5) type and timeline of treatment.
Results
Physical symptoms were documented in 59% of charts in the ER group, and 92% in the non-ER group. Documented response to physical symptoms was present in 46% of charts in the ER group and 70% in the non-ER group. Psychological symptoms were documented once in the ER group, although 22 charts had medium-to-severe scores.
Conclusions
Lack of documentation about patient-reported symptoms may indicate that distress identified by ESAS screening was not addressed, possibly resulting in unplanned ER visits.

eP105
ASSESSING THE IMPACT OF CANCER CARE ONTARIO'S PSYCHOSOCIAL ONCOLOGY & PALLIATIVE CARE PATHWAY: CAN HIGH EDMONTON SYMPTOM ASSESSMENT SYSTEM SCORES PREDICT UNPLANNED EMERGENCY ROOM VISITS?

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Introduction
Head and Neck Cancer (HNC) is associated with significant physical and emotional distress, yet less than half of those with significant distress access psychosocial oncology or palliative care services. ESAS assesses nine physical and psychological symptoms and is routinely used in cancer centers globally. This study examines whether high ESAS scores are predictive of unplanned emergency room (ER) visits in patients with HNC.
Methods
Using existing "routine care" data, this study compares HNC patients who visited the ER with patients who did not. The "ER Group" (n=46) consisted of patients who: 1) visited a physician from June 1st - August 31st 2016; 2) completed ESAS screening within 30 days prior to this visit; and 3) presented to ER with HNC symptoms within 30 days after the visit. ESAS scores for the ER group were compared to ESAS scores for all patients that attended the HNC clinic within this period.
Results
ESAS scores were higher in the ER Group than overall scores for all who attended the HNC clinic within the same time period. 18 of 46 patients (39%) who visited the ER had at least one severe (>6) score.
Conclusions
High ESAS scores may be predictive of increased risk for subsequent unplanned ER visits or hospital admissions. These findings suggest that monitoring symptom scores may help physicians improve early symptom management and prevent exacerbation of symptoms, potentially avoiding unplanned ER visits.

ePP106
PHENOTYPIC CHARACTERISTICS ASSOCIATED WITH A HIGHER SYMPTOM BURDEN IN CANCER SURVIVORS

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Introduction
While emerging evidence suggests that multiple co-occurring symptoms are a significant problem for cancer survivors, little is known about demographic and clinical characteristics associated with a higher symptom burden. Study purposes were to: evaluate the occurrence, severity, and distress associated with 32 common symptoms and examine which phenotypic characteristics were associated with a higher number of co-occurring symptoms (i.e., higher symptom burden).
Methods
Survivors (n=623) completed a demographic questionnaire, and measures of functional status (Karnofsky Performance Status), comorbidity (Self-Administered Comorbidity Questionnaire), and global and cancer-related stress (Perceived Stress Scale (PSS), Impact of Events Scale-Revised (IES-R), respectively). Memorial Symptom Assessment Scale (MSAS) was used to determine symptom burden. Linear regression analysis was done to evaluate phenotypic characteristics associated with a higher symptom burden.
Results
Mean number of MSAS symptoms was 9.1 (±5.2). Most common, severe, and distressing symptoms were lack of energy, problems with sexual interest/activity, and hair loss, respectively. In the regression analysis, poorer functional status, higher level of comorbidity, history of smoking, higher PSS score, and higher IES-R score were associated with a higher symptom burden. Overall model explained 45.6% of the variance in number of co-occurring symptoms.
Conclusions
Findings suggest that cancer survivors report a high number of co-occurring symptoms of moderate severity and distress. Of note, no disease or treatment characteristics were associated with a higher symptom burden. Clinicians need to assess for both general and disease specific stressors and provide referrals for stress management interventions. Future studies need to examine underlying mechanisms for these associations.

ePP107
STUDY EVALUATING AQUAPORIN-1 GENE THERAPY FOR THE TREATMENT OF IRRADIATION-INDUCED SALIVARY HYPOFUNCTION.

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Introduction
Therapy for head and neck cancer commonly includes ionizing radiation (IR). IR irreversibly damages the salivary glands causing decrements in quality-of-life and oral health. There are no therapies to correct this disorder or its sequelae. Previously, proof-of-concept studies have demonstrated the effectiveness of adenovirus (Ad) vector gene transfer of human aquaporin-1 (hAQP1) to the parotid gland and correction of salivary hypofunction (NCT00372320). We aimed to develop and test adeno-associated virus serotype 2 (AAV2) for gene transfer of hAQP1 to correction of IR-induced xerostomia in humans.
Methods
Using well-established preclinical models (e.g., mice and minipigs), we tested the safety, kinetics, and effectiveness of AAV2-hAQP1 to recover IR-induced salivary hypofunction. Using this data, we developed a Phase 1 human clinical trial to test the safety of AAV2-hAQP1 and some measures of biological activity.
Results
In our first Ad-AQP1 trial, all subjects tolerated vector delivery and study procedures well and positive objective and subjective responses were seen in five patients, all at doses <5.8x10^9vector particles (vp)/gland. These findings encouraged us to pursue preclinical studies with AAV2-based vectors, which have demonstrated lower immunogenicity and more stable expression than Ad vectors.
Conclusions
Preclinical data on the safety and efficacy of AAV2 based vectors will be presented. A Phase 1 study (NCT02446249) using AAV2-hAQP1 vector is actively enrolling.

ePP108
BOWEL OBSTRUCTION CAUSED BY COLONIC METASTASIS OF LUNG ADENOCARCINOMA: A CASE REPORT AND LITERATURE REVIEW

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Introduction
Lung cancer is the most common cause of cancer-related death in the United States and worldwide. Primary non-small cell lung carcinoma accounts for approximately 80% of all lung cancer. Although a large majority of all lung cancer patients present with metastatic disease at the time of initial diagnosis, colonic metastases are rare. This report presents a rare clinical case of rectosigmoid metastasis from primary lung adenocarcinoma.
Methods
A retrospective chart review was conducted.
Results
Case Presentation: A 64-year-old female was referred to the hospital by her gastroenterologist after a same-day colonoscopy revealed a large rectosigmoid mass resulting in near total rectal occlusion. On admission, she complained of right-upper quadrant pain and constipation. She had a past medical history of non-small cell lung cancer (T1bN3M0 stage IIIB), diagnosed one year prior. She was in remission following radiation and immunotherapy with pembrolizumab. She underwent urgent colonic and rectosigmoid mass resection. Further pathology confirmed a metastatic poorly differentiated adenocarcinoma of the lung. Systemic chemotherapy with pemetrexed and carboplatin followed by localized radiation to the pelvic region was started. She did not respond well to chemoradiation. Subsequent imaging showed refractory tumor growth in the pelvic region and sacral soft tissue. Cessation of chemoradiation therapy occurred after patient experienced a debilitating stroke and she was transferred to hospice care.
Conclusions
This report presented a rare case of colonic metastasis from lung cancer. When patients with a history of primary lung cancer complain of abdominal symptoms, gastrointestinal tract metastasis from lung cancer should be considered.

ePP109
LEPTOMENINGEAL METASTASIS IN A PATIENT WITH TRIPLE-NEGATIVE BREAST CANCER: A CASE REPORT AND LITERATURE REVIEW

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Introduction
Leptomeningeal carcinomatosis occurs in approximately 3-5% of all cancer patients. Leptomeningeal metastasis from primary breast cancer is the most common etiology for all leptomeningeal diseases. Triple-negative breast cancer has significantly higher metastasis rates. Leptomeningeal carcinomatosis can affect any level of the central nervous system. Also, findings may be subtle and isolated. Thus, a patient's symptoms can be overlooked or dismissed.
Methods
A retrospective chart review was conducted.
Results
Case presentation: A 55-year-old female presented with a past medical history of triple-negative adenocarcinoma of the right breast diagnosed one year prior. Initial patient encounter occurred when she presented to the hospital for seizures, left hemiparesis, and memory loss. Imaging showed a large anterior lobe brain lesion, leptomeningeal enhancement, and a new left breast mass. Frontal craniotomy was performed. Histopathology and immunohistochemical staining of the brain mass suggested primary adenocarcinoma of the breast. Lumbar puncture with cerebrospinal fluid analysis revealed presence of malignant cells. Together with imaging and cerebrospinal analysis, leptomeningeal carcinomatosis was diagnosed.
Conclusions
This case report and literature review is meant to reiterate a classic late-stage and terminal complication of breast cancer because early diagnosis significantly impacts morbidity and mortality. When patients with a history of primary breast cancer present with neurological symptoms, we should consider leptomeningeal metastasis. Not only is more research needed to determine better treatment options for leptomeningeal carcinomatosis, but further studies are needed to elucidate what components of a women's previous breast cancer history and treatment regimen increase the likelihood of leptomeningeal carcinomatosis development.

ePP110
REAL-WORLD INCIDENCE OF SIDE EFFECTS OF CHEMOTHERAPY IN PATIENTS WITH BREAST CANCER AT THE ODETTE CANCER CENTRE

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Introduction
This study was done to identify the incidence of chemotherapy induced nausea and vomiting (CINV), constipation, diarrhea, mucositis, and pain in patients receiving adjuvant or neoadjuvant chemotherapy for breast cancer who received phone calls and interventions from the pharmacy team throughout their treatment.
Methods
We retrospectively reviewed patients with breast cancer receiving adjuvant or neoadjuvant chemotherapy at the Odette Cancer Centre (OCC) from 2010-2015. Patient characteristics and side effect information was collected through electronic charts. Data was analyzed according to independent chemotherapy regimens and cycle numbers, as well as cumulatively across all regimens and cycles. Baseline information was defined as symptoms that were experienced the day before or the day of, prior to the administration of chemotherapy. Prophylactic medications taken were also documented.
Results
The incidence of side effects experienced during 438 cycle baselines, and 713 chemotherapy cycles, received by 444 patients were reviewed. 165 patients received anthracycline plus taxane regimens, 161 received anthracycline plus taxane dose dense (DD) regimens, 87 received TC regimens, 11 received paclitaxel regimens, and 20 received other chemotherapy regimens. Across all regimens and cycles, nausea had the highest incidence (39.13%), followed by pain (35.06%), constipation (24.68%), vomiting (11.92%), and diarrhea (8.84%). Cumulatively, across all regimens, nausea had the highest incidence during cycle 1 (47.38%), and pain had the highest incidence during cycle 5 (57.45%).
Conclusions
Of all 5 side-effects, nausea had the highest incidence, most frequently occurring in the AC DD group, and during cycle 1. Pain had the second highest incidence, most frequently occurring during cycle 5.

ePP111
A REMOTE-SYMPTOM REPORTING (RSR) MOBILE APPLICATION FOR LUNG CANCER AND SARCOMA PATIENTS IN AN OUTPATIENT CLINIC: ENVIRONMENTAL SCAN AND READINESS ASSESSMENT

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Introduction
RSR improves quality-of-life and decreases unplanned healthcare use in cancer care. An RSR has not been previously used to collect patient-reported outcomes in patients receiving chemotherapy in our setting. Therefore, we performed an environmental scan and readiness assessment of implementing RSR using a mobile application in our lung and sarcoma outpatient clinic.
Methods
An environmental scan established a pre-implementation baseline using several metrics indicating clinic work flow and volume. Mixed methods identified barriers and facilitators to implementation in our telephone-based triage clinic.
Results
In 290 pre-implementation triage voice-mails, the median response time was 28 minutes. 261 (90%) calls were resolved over the phone while 18 (6%) calls required emergency room visits. Mixed qualitative-quantitative methods of implementation identified the following: support by administration was universally identified as key; there was additional concern over potential staff work volume and flow. Patient uptake issues revolved around non-English primary language, lack of familiarity with technology, and inappropriate RSR use by patient/family member. Unexpectedly, legal barriers associated with utilizing a commercial RSR platform, including data ownership and secondary commercial use of data were red-flagged by our legal team.
Conclusions
There is wide support among the triage clinic staff for RSR system implementation but there were significant barriers to implementation when using a commercial platform, in addition to patient issues and staff work-flow concerns. Once these issues are resolved, we aim to pilot an implementation study assessing 150 patients in summer, 2019.

ePI12
DO CANCER CLINICIANS IDENTIFY THE HEALTH SERVICE NEEDS OF PATIENTS AND THEIR FAMILIES?

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Introduction
Delivering best-practice cancer care requires partnership between patients, carers, and their multidisciplinary team (MDT). Increasing patient numbers and continued resource constraints necessitates review of service/prioritisation models, to ensure that patients and families receive personalised, holistic, multidisciplinary care. This project compared consumer-reported (patients/family) healthcare needs with services provided by members of the cancer MDT, in a quaternary hospital in Brisbane, Australia.
Methods
Using a cross-sectional design, patients diagnosed with head/neck (HNC), lung, oesophageal, brain or haematological cancers, and their family member/carer, were interviewed regarding perceived supportive care needs prior to a scheduled outpatient review (medical/MDT), at any time from diagnosis. Blinded clinician data, including identified care needs and intervention +/- referrals actioned were retrieved from electronic medical records. Data sources were triangulated and analysed descriptively.
Results
Patients (n=309; 202 male, age range 19-94) reported a variety of supportive care needs related to physical, practical and psychosocial concerns. Of those, 205 patients (total 66%; HNC 80%, haematology 75%, brain 59%, lung/oesophagus 53%) reported one or more concerns requiring MDT intervention. These issues were not actively identified or managed by clinicians up to 80% of the time. Family member/carer distress was also highly prevalent (40%, 69/173) which was rarely identified or managed by health professionals.
Conclusions
Patients and their families, report multiple unmet healthcare needs throughout the treatment continuum, which are poorly identified by clinicians. Collaborative teams need to explore novel ways to identify and prioritise patients for supportive care intervention, to minimise the burden of cancer for patients/families, as well as cost to health systems.

ePI13
PILOT RANDOMIZED CONTROLLED TRIAL OF A DYADIC YOGA PROGRAM FOR HEAD AND NECK CANCER PATIENTS UNDERGOING RADIOTHERAPY AND THEIR FAMILY CAREGIVERS

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Introduction
Radiotherapy (RT) to treat head and neck cancer (HNC) may result in debilitating toxicities and functional problems. Yoga therapy delivered concurrently to RT may buffer against treatment-related sequelae. The purpose of this pilot RCT was to establish feasibility and preliminary efficacy of a yoga intervention. Because family caregivers report low caregiving efficacy and high levels of distress, we included them in this trial as active study participants.
Methods
HNC patients undergoing standard RT and their caregivers were randomized to a 15-session yoga intervention or a waitlist control (WLC) group. Prior randomization, both groups completed self-report and cervical range of motion (CROM) assessments. Patients' weight loss, feeding tube placement and hospital admission were extracted from their medical records. Dyads were reassessed within 1 weeks of completing RT and 2 months later.
Results
We consented 63 dyads (72% consent rate) and 53 (84%) completed all assessments. Patients (mean age: 60.3 yrs., 35% female) and caregivers (mean age: 54.9 yrs., 72% female, 76% spouses) completed a mean of 14.3 sessions (range 12-15), all of them rated the program as "very useful." Multi-level modeling using appropriate covariates revealed significant group differences in patients' cancer-related symptoms (MDASI means: yoga=1.67; WLC=4.00; d=3.6; P<.05). Relative to the WLC, the yoga group revealed better CROM, less weight loss and fewer feeding tubes and hospital admissions (all P<.05).
Conclusions
Yoga therapy appears to be a feasible, acceptable, and possibly beneficial behavioral supportive care strategy for HNC patients undergoing RT. A larger efficacy trial with a more stringent control group is warranted.

ePI14
POTENTIAL OF NOVEL RECOMBINANT PROTEIN (ULLB-0005) IN DIFFERENT CANCERS

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Introduction
ULLB-0005 is a protein derived from natural fungus with high binding specificity for carbohydrate antigen and strong apoptotic signal leading to death of cancer cells. Natural AA sequence has been modified to make more stable and soluble protein. Protein was purified through different column chromatography and characterized as a single homo dimer protein.
Methods
Present study evaluated anticancer activity of ULLB-0005 by determining *in vitro* cytotoxicity fingerprint, efficacy, mechanism and safety in human cell lines. Promising cytotoxicity observed in 11 different cancer cell line, with good safety profile in human PBMCs. The efficacy as antitumor agent was assessed in respective xenograft immunocompromised mice models *in vivo.* The molecule showed strong anticancer activity in immune-compromised mice model in various cancers which was observed in the reduction of tumor volume.
Results

	Cell Line	In Vitro Testing	In Vvivo Testing
1	KB Oral cancer	Positive	Positive
2	AGS Stomach Cancer	Positive	
3	HT29 (Primary Colon Cancer)	Positive	Positive
4	MCF-7 (Breast cancer)	Negative	
5	PA-1 (Ovarian)	Positive	Positive
6	PBMCs (Peripheral blood mononuclear)	Negative	
7	MDA-MB-453 (Breast)	Positive	
8	MDA-MB-231(Breast)	Positive	Positive
9	PANC-1 (Pancreatic)	Positive	Positive
10	MiaPaCa (Pancreatic)	Negative	
11	T24 (Bladder Cancer)	Positive	Positive

Conclusions
ULLB-0005 induced strong apoptotic signal by modulating protein mitochondrial membrane depolarization, leading to death in cancer cells. Inhibition of proliferation and migration was observed in human endothelial cells, suggesting potential antiangiogenic effect. Studies to evaluate possible synergistic effect with approved chemotherapeutic agents for Breast and Pancreatic cancers showed good synergy in In-vitro test.

eP115
THE RELATIONSHIP BETWEEN SUBJECTIVE COGNITIVE ABILITY AND ANXIETY, DEPRESSIVE SYMPTOMS, AND FATIGUE IN BREAST CANCER SURVIVORS

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Introduction
The purpose of this study is to examine the relationship between subjective cognitive ability and common symptoms (anxiety, depressive symptoms, fatigue) in breast cancer survivors (BCS).
Methods
Secondary data analysis from pooled baseline data from 2 IRB-approved studies of BCS. 144 BCS met eligibility criteria and had complete data on the following questionnaires (symptoms): Multiple Ability Self-Report Questionnaire (cognitive abilities), Spielberger State Trait Anxiety Inventory - State (STAI-S) (anxiety), Centers for Epidemiologic Studies Depression Scale (CES-D) (depressive symptoms), and Functional Assessment of Cancer Therapy – Fatigue (fatigue). Data was analyzed using descriptive statistics, linear regression, and change point models.
Results
BCS were on average 54.4 (SD 8.8) years of age and the majority were white (97.2%), 5.1 years post-treatment, and had some college (15.6 years). Increased anxiety was associated with poorer cognitive abilities (p=0.0105-<0.0001), except for visual memory, which had flattened relationship at 35 on the STAI-S. Increased depressive symptoms were significantly related to poorer cognitive abilities (p=0.045-<0.0001); however, depressive symptom scores of ≥ 10 had a different slope than those scores < 10 for visual-perception, verbal memory, attention and total score. Increased levels of fatigue were associated with poorer cognitive abilities (p<0.0001). Education level showed statistically significant negative correlations with cognitive ability (p=0.0377-<0.0008).
Conclusions
In general, increased levels of anxiety, depressive symptoms, and fatigue were associated with decrements in cognitive abilities. Potential cut-points on the STAI-S and CES-D were identified and if validated by future research could be used to screen BCS who may be more likely to have poorer cognitive abilities.

eP116
ONCOLOGIC EMERGENCY MEDICINE: SURVEY OF HOSPITAL ADMISSIONS AND OUTCOME

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Introduction
The increase in cancer survival and the development of new therapies, has produced an increase in the hospital admissions through the Emergency Department (ED).
Methods
The records of patients admited between July and November 2018 were studied.
Results
170 patients (83 men and 87 women) entered the study. The mean age was 61.4 years. The most frequent diagnoses were: lung (20%), breast (17.1%), colo-rectal(14.7%) and pancreatic (12.4%) cancers. Stages: I – II (15.5%), III (10.6%) and IV (75.9%). Type of therapy: chemotherapy (74.1%), immunotherapy (9.4%), targeted therapy (16.5%) and hormone therapy (2.4%). Line of therapy: neo- or adjuvant (18%), first (46.6%), second (18%), third (9.9%) and fourth or subsequent (7.5%). The most frequent symptoms at admission were: fever (31.4%), dyspnoea (14.8%) and pain 14.8%). Thirty seven point six percent of admissions were because of tumour related complications, 34.7% because of toxicity and 27.1% because of non-leukopenic infection. The mean hospitalization lenth were 10.3 days. From the 170 patients, 32 died in the hospital and 13 within the first month after discharge. Tumour progression was the cause of death in 75% of the cases and the complications of therapy was in 18.2%. Seventy five percent were receiving a third or subsequent line of therapy and 66.5% received chemotherapy in the last month of life.
Conclusions
There is a necessity to improve the clinical decisions. Clinical Decision Units in the ED, could help to this goal. Or perhaps there is a "missing link" between guidelines and the real clinical practice.

eP117
THE PREVALENCE AND RISK OF SECOND PRIMARY MALIGNANCIES AFTER DIFFERENT STAGES OF BREAST CANCER WOMEN

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Introduction
Breast cancer (BC) is the most common cancer in women worldwide. Because of the long survival in many patients, the occurrence of second primary malignancies (SPM) after BC is an important issue.
Methods
We identified female BC patients in the Breast Cancer Health Database of Taiwan, which includes four different cancer registry datasets between 2002 and 2014 in the country. We compared the incidence of SPM between patients who received chemotherapy and/or radiotherapy with those who did not. Stratified analyses were also performed according to the American Joint Committee on Cancer (AJCC) stage. Cox regression models were used to identify the risk factors for SPM and evaluate their effects.
Results
We enrolled 85,947 eligible BC patients, and 2,571 (2.99%) of them developed SPM. The median duration of SPM was 2.70 (1.14-5.14) years. Radiotherapy was administrated in 40,946 (47.64%) of the patients, and chemotherapy was administered in 52,120 (60.64%). The most common SPM were digestive tract cancers (876, 31.89%). Risk factors for SPM included the AJCC stage, therapeutic strategy, age, and underlying co-morbidities. Chemotherapy and radiotherapy did not increase the risk of SPM in any stages. In fact, patients at stages I, II, and III/IV who received both therapies had lower risks of SPM in comparison with those who did not. After adjustment for other risk factors, the reduced risk was still significant in stage III/IV patients (p = 0.047).
Conclusions
The risk of SPM was different across BC stages. Chemotherapy and radiotherapy did not increase the risk of SPM in BC women.

eP118
SYMPTOMS OF SEASONAL AFFECTIVE DISORDER IN WOMEN DIAGNOSED WITH EARLY BREAST CANCER RECEIVING RADIOTHERAPY

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Introduction
Seasonal affective disorder (SAD) is a common disorder with significant psychological morbidity. SAD is related to decreased daylight exposure during the fall and winter seasons. Patients receiving radiation therapy (RT) for early-stage invasive breast cancer (EIBC) are at high risk for developing depressive symptoms. Of interest is whether seasonal factors influence the psychological symptoms of patients being treated for EIBC.
Methods
We identified patients treated with RT for EIBC between January 2011 and June 2017. Patients who completed at least one Edmonton Symptom Assessment Scale (ESAS) pre- and post-RT were included in our analysis. Patients receiving RT during the autumn and winter (November-March) were compared to patients receiving RT during the spring and summer (April-August). Psychological morbidity was evaluated based on patient-reported depression, anxiety and overall quality-of-life (QOL) on the ESAS. Data on systemic treatment and radiation were extracted from existing databases.
Results
84 patients treated with RT in spring and summer and 102 patients treated with RT in autumn and winter were included. Patients receiving RT during spring and summer had better QOL prior to RT, compared to those receiving RT during winter and autumn (Table 1, p=0.03). However, patients receiving RT in the spring and summer had worse symptom trajectories across three domains of depression, anxiety and overall-QOL (Table 2, p=0.03, p=0.008, and p<0.0001, respectively).

Table 1: Comparisons of ESAS Scores before/during/after RT between Group A (Spring and Summer) vs. Group B (Autumn and Winter)

	Coefficient	SE	p-value
Before RT			
Depression score before RT			
Group A vs. Group B	0.117	0.210	0.5755
Anxiety score before RT			
Group A vs. Group B	-0.108	0.174	0.5331
Overall QOL score before RT			
Group A vs. Group B	**-0.356**	**0.164**	**0.0301**
During RT			
Depression score during RT			
Group A vs. Group B	-0.144	0.291	0.6223
Anxiety score during RT			
Group A vs. Group B	-0.251	0.276	0.3625
Overall QOL score during RT			
Group A vs. Group B	0.006	0.194	0.9747
After RT			
Depression score during RT			
Group A vs. Group B	-0.073	0.206	0.7243
Anxiety score during RT			
Group A vs. Group B	-0.097	0.181	0.5924
Overall QOL score during RT			
Group A vs. Group B	-0.013	0.150	0.9312

Table 2: Comparisons of change in ESAS scores between Group A (Spring and Summer) vs. Group B (Autumn and Winter)

	Coefficient	SE	p-value
Depression Changed Score			
Group A vs. Group B	0.5047	0.2255	**0.0267**
Anxiety Changed Score			
Group A vs. Group B	0.6402	0.2382	**0.0079**
Overall QOL Changed Score			
Group A vs. Group B	1.4312	0.2968	**<.0001**

Conclusions
Seasonality influenced the symptoms reported by patients with EIBC receiving RT. Future studies are needed to understand when during treatment patients are at highest risk for psychological morbidity and how SAD may affect these patients.

eP119

THE EFFECTS OF MASTECTOMY ON BODY IMAGE AND CULTURAL IDENTITY IN JAPANESE WOMEN

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Introduction
In the 1990s, Fujisaki Kaoru compiled research on body image within the context of Japanese nursing science. These efforts informed the development of the body image assessment tool (BIAT) as a comprehensive body image scale. Thereafter, confirmatory factor analysis of BIAT showed that the fitness of the model decreases if women who received mastectomy are included. Since the concept of body image is cultivated differently by each culture, the cultural aspects of Japanese Confucian teachings and the idea "I care about others' sight" should be considered. Therefore, the purpose of this study was to examine influence on body image in Japanese women who had undergone mastectomy, from a cultural viewpoint.
Methods
Semi-structured interviews were conducted with 14 Japanese women who had undergone mastectomy. After further grouping by operation type, we carried out a qualitative inductive analysis.
Results
Women who were treated with Halsted's technique (regarded as standard surgery from 1975 to 1987) were notably influenced by Japanese cultural factors and reported negative body images. However, women who underwent breast conservation surgery (regarded as standard surgery from 2004 to 2012) were not at all affected by cultural factors, and demonstrated positive body images that affirmed continued beauty. Our results that the surgical treatment of breast cancer suggest that even the cultures affecting the construction of the body image after mastectomy are progressing to an unimportant problem.
Conclusions
For these women, surgical approach directly influenced post-surgical body image

eP120

EXPERIENCE IN THE MANAGEMENT OF MALIGNANT PLEURAL EFFUSION USING INDWELLING PLEURAL CATHETER IN ADVANCED ONCOLOGICAL PATIENTS

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Introduction
Malignant pleural effusion (MPE) is a usual clinical issue in patients diagnosed with advanced tumors. This condition deteriorates quality of life due to dyspnea, chest pain and cough. Our purpose is to analyze symptoms control, quality of life improvement and optimal indication of indwelling pleural catheter (IPC) in oncological advanced patients.
Methods
35 patients (20 males) diagnosed with MPE treated with IPC at ICO-Hospitalet from 2013 to 2018, were retrospectively reviewed. The symptoms improvement was analyzed using Wilcoxon test. The overall survival (OS) was calculated using Kaplan-Meier method.
Results
Median age was 69 years (range 28-87). 60% lung, 20% breast, 20% others. 51.4% had pleural histological confirmation. 54.3% were under oncological treatment. 28.6% underwent previous local radiotherapy. Median number of previous pleural taps were 2 (range 1-11). 68.6% experienced dyspnea improvement ($p<0.001$) and 23% pain relief ($p=0.017$). There were not significant differences in opioid consumption. 54% had complications (28.6% pain, 8.6% local infection, 8.6% pneumothorax, 5.7% empyema, 5.7% bleed). Before IPC 40% of patients decreased hospital admissions ($p=0.027$) and 60% emergency room visits ($p=0.004$). mOS since IPC insertion was 78 days (95% CI 0-170.7). 71.4% survived more than 30 days, 84% of them improved dyspnea. Whereas, 30% of patients that survived less than 30 days experienced dyspnea improvement ($p=0.004$).
Conclusions
IPC is a feasible intervention to achieve symptomatic and quality of life improvement in oncological advanced patients. Patients that survived more than 30 days experienced greater symptomatic benefit. More studies are required to define if this is the optimal patient profile indication.

eP121

THE ANTIDIARRHEAL EFFICACY OF A PROPRIETARY AMINO ACID MIXTURE (ENTERADE) IN NEUROENDOCRINE TUMOR (NET) PATIENTS.

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Introduction
Diarrhea is a major quality of life limiting symptom in neuroendocrine tumor patients. We conducted a pilot study of Enterade (a novel amino acid based oral rehydration solution) in neuroendocrine tumor patients with quality of life limiting diarrhea to evaluate its antidiarrheal efficacy. Enterade has been shown to increase intestinal villi regeneration and reduce diarrhea in invivo models.
Methods
Medical records of all the GEPNET patients treated with Enterade for symptomatic diarrhea were retrospectively evaluated after IRB approval. Patients were treated at Markey cancer center between May 2017-July 2018.
Results
Total 75 patients were treated with Enterade. Enterade was administered as 8 oz. bottle BID for two weeks. Antidiarrheal efficacy data was available on 41 patients at the time of abstract submission. 18 patients had small bowel neuroendocrine tumors (NET), seven had bronchial NETs, six had pancreatic NETs, four had NETs of unknown primary, two had gastric NET and rest were other rare sites. 21/41 patients had history of prior bowel resection either for primary neuroendocrine tumor resection or debulking. 25/41 patients were on somatostatin analogs at the time of initiation of Enterade. 33 out of 41 patients reported some degree of improvement in diarrheal symptoms. 19 out of these 33 responders reported at least 50 percent reduction in diarrhea frequency.
Conclusions
80% (33/41) neuroendocrine tumor patients reported improvement in diarrhea with Enterade. 57.5% (19/33) reported more than 50% reduction in diarrhea frequency. A phase II study of Enterade in gastroenteropancreatic neuroendocrine tumor patients with quality of life limiting diarrhea is currently accruing.

ePP122
IMPACT OF PHARMACY INTERVENTIONS IN PATIENTS RECEIVING CHEMOTHERAPY FOR BREAST CANCER AT THE ODETTE CANCER CENTRE

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Introduction
At the Odette Cancer Centre (OCC), the pharmacy team calls patients receiving chemotherapy through out the course of their treatment to follow-up on chemotherapy side-effects, and to provide interventions to reduce these side effects. This retrospective study was done to determine the success of over-the-phone pharmacy interventions throughout the course of treatment in patients with breast cancer receiving adjuvant or neoadjuvant chemotherapy.
Methods
We retrospectively reviewed patients from 2010 to 2015 with breast cancer receiving adjuvant or neoadjuvant chemotherapy at the OCC. Information on patient characteristics and pharmacy interventions was collected through electronic charts and records. Specific types of interventions implemented, the reason that they were implemented and their documented success are described.
Results
A total of 1593 over-the-phone pharmacy interventions were implemented for 441 patients and were retrospectively reviewed: 458 were baseline interventions to be implemented before the start of a new chemotherapy cycle, and 1135 were cycle interventions to be implemented during the current cycle. The outcomes of 677 interventions (42.50%) were not documented. There were 455 interventions documented as successful or partially successful (28.56%) and the other interventions were either unsuccessful or immeasurable for various reasons (n=461, 28.94%). In each cycle, an average of 2.19 attempts were made by the pharmacy to contact the patient, and an average of 0.0054 phone calls from patients were missed by the pharmacy.
Conclusions
Pharmacy interventions through out chemotherapy can reduce side effects experienced by patients. A prospective study should be undertaken to determine a more accurate measurement of the impact of these interventions.

ePP123
THE MEDIATING ROLE OF SELF-MANAGEMENT ABILITY ON PSYCHOLOGICAL DISTRESS AND HEALTH-RELATED QUALITY OF LIFE IN FEMALE CANCER OUTPATIENTS IN TAIWAN

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Introduction
Quality of life (QOL) is one of the most critical indicator for cancer patients receiving anti-cancer therapy and is associated with psychological distress. Self-management ability of cancer patients is particularly concerned in the outpatient setting. This study examines whether the association between psychological distress and QOL is mediated by patients' self-management ability.
Methods
This cross-sectional study was conducted and a total of 122 outpatients with mixed tumor site at all stages were recruited in a medical center in Taiwan. Patients' psychological distress, self-management ability, and QOL were assessed by Distress Thermometer (DT), self-management ability scale (one item), and SF-12 Health Survey (Physical & Mental QOL). The mediation hypothesis was tested by multiple regression analyses controlling physical function.
Results
Patients reported the mean levels (severity) of psychological distress was 2.9 (SD=2.4); 27% of patients reported over 5 scores (cut-point for further care in Taiwanese). Self-management ability significantly mediated 19% of the effect of the psychological distress on Physical QOL (Sobel zs=-2.28, p=0.02). Self-management ability significantly mediated 14% of the effect of the psychological distress on Mental QOL (Sobel zs=-2.15, p=0.03).
Conclusions
Taken together, our study showed that self-management ability partially explains the association between psychological distress and QOL. How to enhancing patients' self-management ability is important issues and that may improve patients' QOL.

ePP124
IMMUNE-RELATED ADVERSE EVENTS ASSOCIATED WITH ANTI-CTLA-4 AND ANTI-PD-1 CHECKPOINT INHIBITORS. A SINGLE CENTER EXPERIENCE

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Introduction
Ipilimumab (IPI), nivolumab (NIVO) and pembrolizumab (PEMBRO) can induce immune-related adverse events (IrAEs). We describe the IrAEs associated with 55 patients (pts). There were 27 pts treated with IPI and 23 pts treated with NIVO, 4 pts received PEMBRO, and 1 pt was treated with combination of IPI and NIVO.
Methods
Retrospective data from 54 pts were used treated either in an expanded access program (AEP), clinical trial setting or post-registration protocol.
Results
Patients included metastatic malignant melanoma (MMM), non-small cell lung cancer (NSCLC), renal cell carcinoma and Hodgkin's disease. In total 266 cycles of NIVO (median = 7, range 1-52), 15 cycles of PEMBRO (median = 4, range 1-6), and 64 cycles of IPI (median = 4 cycles, range 1-4) were administered. Seven IrAEs are described in 15 IPI treated pts. These included endocrinopathy, colitis (1 required infliximab), and hepatitis. Among the pts treated with NIVO, 7 IrAEs were documented. These included pneumonitis in 2 pts, skin rash in 3 pts, mild diarrhea in 1 pt and mild uveitis in 1 pt. One pt developed autoimmune thrombocytopenia, nephritis, and PRES (posterior reversible encephalopathy syndrome). Three chest infections were documented including pulmonary tuberculosis in a NSCLC pt. The pt receiving combination IPI and NIVO had grade 4 skin toxicity and pneumonitis. No IrAEs related deaths were document.
Conclusions
A plethora of IrAEs is described with anti-PD1 and anti-CTLA4 antibodies. Colitis was more common with anti-CTLA-4 while pneumonitis more common with anti-PD1. Prompt diagnosis of IrAEs will result in decreased morbidity and mortality.

ePP125
IN VITRO CYTO TOXICITY OF ULLB-0005 A NOVEL PROTEIN IN URINARY BLADDER CANCER

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Introduction
To evaluate cytotoxicity of ULLB-0005 which an novel protein in treatment of urinary bladder cancer cells
Methods
ULLB-0005 is a protein derived from natural fungus with high binding specificity for carbohydrate antigen and strong apoptotic signal leading to death of cancer cells. For in vitro study, urinary bladder cancer cells (T24) were treated with ULLB-0005 at concentration ranging from 2.5-80 μg/mL. Following incubation, the cell cytotoxicity was estimated by MTT assay.
Results
Based on in vitro study, it was observed that cytotoxicity was found to be 93.1% for ULLB-0005 and 54.5% for doxorubicin. In order to find if ULLB-0005 is cytotoxic to T24 cells, MTT assay was performed. The results demonstrated that ULLB-0005 is cytotoxic.
Conclusions
Treatment of urinary bladder cancer and certain limitation, based on in vitro data, ULLB-0005 is a potential anticancer drug for the treatment of urinary bladder cancer.

ePl26
EXERCISE AS A TOOL TO MITIGATE THE SIDE EFFECTS OF CANCER THERAPIES: A QUALITATIVE ANALYSIS OF CANCER SURVIVORS' AWARENESS AND BELIEFS.

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Introduction
With benefits of exercise on side effects of cancer treatment not lost on the scientific community, we aimed to evaluate whether cancer survivors are being exposed to the idea of exercise as an effective tool in managing these side effects, their perception of exercise benefits and barriers.
Methods
As part of an on-going internal mechanism to establish clinical care pathways, in a tertiary care referral hospital,16 cancer survivors with a primary diagnosis of cancer and receiving chemotherapy and/or radiotherapy were interviewed using a semi-structured questionnaire after obtaining verbal consent. Participants not exposed to exercise benefits were oriented about its benefits during the interview. All participants were asked if it would be possible for them to exercise. The interviews were audio recorded, transcribed and analysed using both qualitative and quantitative methods.
Results
Among the survivors interviewed 50% were not exposed to the idea of managing their side effects such as fatigue, lack of strength, general apathy to their surroundings etc. through exercise Survivors' perspective of their ability to exercise during treatment is depicted in figure.
Among the Perceived Barriers, 3 themes emerged; side effects of treatment, co-morbidities and personal factors. The themes and sub-themes are illustrated below.
Conclusions
Lack of exposure of the survivors to exercise as a way to mitigate the side effects of their treatment is evidenced by their responses and by extension, their perceived barriers. The need for repeated and guided exposure to exercise by healthcare professionals at every level can improve better establishment of clinical care pathways.

ePl27
RELATIONSHIP OF FRAILTY AND COGNITIVE IMPAIRMENT TO HEMATOPOIETIC STEM CELL TRANSPLANT OUTCOMES

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Introduction
Hematopoietic Stem Cell Transplant (HSCT) is a potentially curative treatment for hematologic malignancies, with 20,000 HSCTs performed annually in the US. Conventional assessments established for determining HSCT eligibility do not effectively capture all contributing risk factors for overall survival and relapse post HSCT. Age and disease are known prognostic markers. Frailty, a pre-disability state, is associated with cancer survivors, and can serve as a prognostic marker. Cognitive impairment (CI) can also be a prognostic marker, with higher mortality risk in older patients with hematological malignancies. Decreased quality of life (QoL) is a frequent concern reported by HSCT recipients. The purpose of this pilot study is to determine if measurements of frailty and CI could contribute to HSCT outcomes and QoL in adults.
Methods
This study uses a framework positing that conventional determinants of HSCT eligibility may not incorporate all factors that could predict HSCT outcomes, overall survival, and relapse. The study uses a longitudinal design with a sample of 30 autologous HSCT-eligible patients >18 years. The research variables are frailty, CI, QoL, age, disease/diagnosis, infections, and demographic/clinical information that are collected prior to HSCT and post-HSCT.
Results
This study is in progress with 15 patients enrolled to date. Planned analyses will examine correlations among frailty, CI, and the research variables listed above.
Conclusions
This study is generating preliminary data that will lead to more extensive studies of the role of frailty and/or CI as predictors of outcomes, helping to identify at risk patients before transplant and initiate appropriate interventions.

ePl28
POTENTIAL IMPACT OF MEDICAL CANNABIS TREATMENT ON COMMON SYMPTOMS IMPROVEMENT USING THE EDMONTON SYMPTOM ASSESSMENT SCALE AMONG CANCER PATIENTS IN QUEBEC – CANADA: PILOT STUDY

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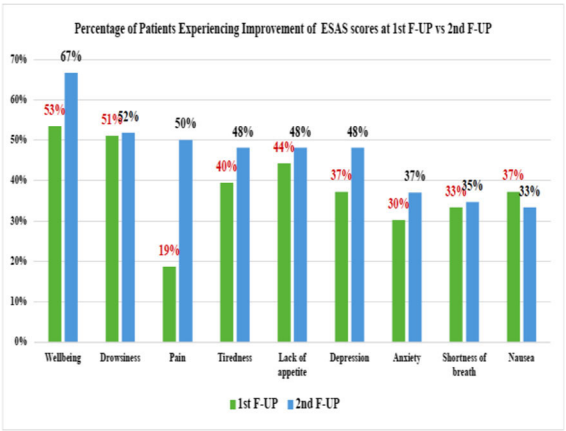
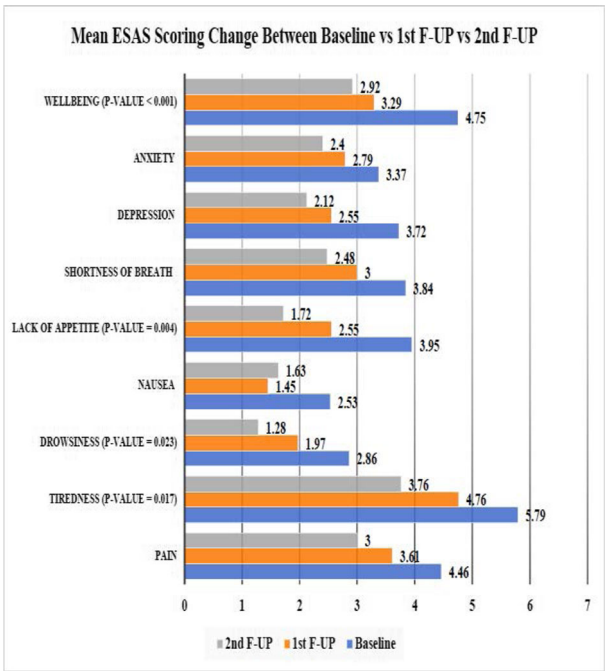
Introduction
Therapeutic applications of medical cannabis within the cancer population, particularly for common symptoms, and how treatment can impact quality of life are still under-investigated.
Methods
The Cannabis Pilot Project (CPP) accepted patients already receiving supportive care but referred to the CPP because they did not achieve

adequate symptom relief. This study examined the efficacy of cannabis treatment for common symptoms among cancer patients using the revised Edmonton Symptom Assessment Scale (ESAS-r).

Results

Sixty-five patients have been enrolled (mean age 61 years; 52% female) in the CPP over seven months. By the second follow-up, a clinically meaningful improvement by one point in a 0-10 scale was reported: up to 50% for pain; 48% for tiredness; 52% for drowsiness; 37% for nausea; 48% for lack of appetite; 35% for shortness of breath; 48% for depression; 37% for anxiety; 67% for wellbeing. Mean ESAS score improved significantly for tiredness (5.79 vs 4.76 vs 3.76, p-value 0.017); drowsiness (2.86 vs 1.97 vs 1.28, p-value 0.023); lack of appetite (3.95 vs 2.55 vs 1.72, p-value 0.004); and wellbeing (4.75 vs 3.29 vs 2.92, p-value <0.001). Mild side-effects not requiring suspension of treatment (i.e feeling light-headedness in the morning) were reported by 15.5% of patients at 1st follow-up and 14.8% at 2nd follow-up.





Conclusions

Cannabis treatment seems to positively impact symptom burden in cancer patients, with clinically and statistically significant improvements in wellbeing, tiredness, drowsiness and lack of appetite.

ePI29

TECHNOLOGY SUPPORTED PATIENT REPORTED OUTCOME ASSESSMENT IN THE CLINIC AND FROM HOME IN PATIENTS WITH CHRONIC LYMPHOCYTIC LEUKEMIA

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Introduction

Recent advances in chronic lymphocytic leukemia (CLL) treatment are providing patients more options. Treatment selection based on comorbidities and molecular profile is key for best outcome. In this multisite study, we evaluated feasibility of collecting patient reported outcomes (PRO) during and between visits and use of a Geriatric Assessment (GA) to inform care decisions.

Methods

Patients used the Carevive electronic Patient Reported Outcomes (ePRO) platform to complete surveys about symptoms, treatment goals, and decision-making preferences; patients >65 years completed a modified GA (mGA). Results were aggregated on a computer dashboard for provider review before the patient visit at some sites. After treatment discussion and selection, an evidence-based symptom management plan was created at these sites. PROs were assessed at each visit; a sub-group of patients with internet reported PROs weekly.

Results

Four sites enrolled 79 patients with relapsed/refractory CLL. Mean age was 68 with 53 patients >65; 85.5% were white; 60.7% were male. 92% (73/79) received treatment per NCCN guidelines. mGA results were 7.5% (5/53) fit, 54.7% (29/53) intermediate fit, and 37.7% (20/53) frail. PROs were assessed during 159 visits; 14 patients provided at home reports (Figures 1-2). At four months, 19.0% (15/79) patients had 18 emergency department (ED) and unanticipated office visits, 53% of visits by frail patients (Table 1.)

Conclusions

The study showed feasibility of reporting PROs in clinic and from home. GA was associated with ED visits which needs further validation. Web-based PRO reporting warrants further exploration for clinical decision making and predicting resource utilization.

ePI30

MEDICAL CANNABIS IMPROVES APPETITE AND STABILIZES WEIGHT IN CANCER PATIENTS

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Introduction

Anorexia and weight loss are common side-effects of cancer and its treatments. The efficacy of medical cannabis to improve these symptoms is unclear.

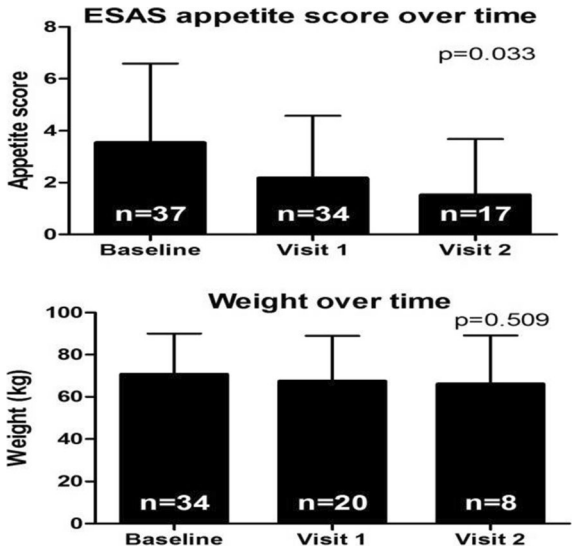
Methods

Cancer patients referred to the Cannabis Pilot Project (CPP) of the McGill University Health Centre were included in this study. CPP patients have

already received supportive care however, have not achieved adequate symptom relief with conventional treatments. The revised Edmonton Symptom Assessment System (ESAS-r) questionnaire was completed at baseline (BL), visit 1 (>30-75 days after BL) and visit 2 (>75-120 days after BL) to determine improvement in appetite. Weight was available at each visit in a subset of patients.

Results

Thirty-seven patients (mean age 61±11 y, 51% female) were assessed at BL; of those, 43% reported anorexia as a symptom. Synthetic cannabis was prescribed to 62% of patients. The majority of patients (81%) were prescribed oral cannabis (oil), with 51% receiving Cannabidiol-rich products. There was a significant improvement in appetite over the 3 visits (BL: 3.5±3.0; visit 1: 2.2±2.4; visit 2: 1.5±2.2, p=0.033). Of patients who reported anorexia as a symptom, 75% reported improvement at visit 1, and 80% at visit 2. Weight remained unchanged over time (BL: 70.7±19.3 kg; visit 1: 67.4±21.5 kg; visit 2: 66.1±23.0 kg, p=0.509).



Conclusions

Medical cannabis in addition to standard supportive care seems to improve appetite and stabilize weight over time in cancer patients.

ePI31

AN INNOVATIVE BENCH TO BEDSIDE PIPELINE TO SELECT AND TEST PATIENT REPORTED OUTCOME MEASURES (PROMS) FOR PERSONALIZED MANAGEMENT OF CANCER SYMPTOM AND EMOTIONAL DISTRESS

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Introduction

Patient-Reported Outcome Measures (PROMs) are a common mechanism for treatment planning and to evaluate the impact of healthcare on health outcomes as part of a personalized medicine approach. PROMs are standardized, validated questionnaires completed by patients to measure their perceptions of health status and/or well-being. In this presentation, we provide an overview of PROMs research and case examples of PROMs testing for accurate detection of complex cancer symptoms i.e. breathlessness, insomnia, fatigue and acceptability for use in routine clinical care.

Methods

Our PROMs lab developed a unique bench to bedside research pipeline to address the need for a cost-efficient applied research enterprise that has accelerated field testing of PROMs for use in routine care. This bench to bedside approach was applied to guide the selection of PROMs for use in routine clinical care in diverse cancer populations and could be a key approach to PROMs uptake in other cancer organizations.

Results

A range of PROMs have been tested for detecting with accuracy core problems in functioning, swallowing problems, sexual dysfunction in prostate cancer, cognitive impairment, and for PROMIS and PRO-CTCAE toxicity measures compared to legacy tools.

Conclusions

PROMs are at the heart of personalized medicine and their integration with other biomedical data is essential to a better health outcomes and care. Our approach will be helpful to other organizations in PROMs selection for routine care.

ePI32

CYCLOPHOSPHAMIDE-INDUCED INFLAMMATION AND NEUROBEHAVIORAL DYSFUNCTION IN INTACT AND OVARIECTOMIZED ADULT C57BL/6 MICE TREATED WITH NAPROXEN SODIUM.

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Introduction

Chemotherapeutic agents can impact the brain and its biochemical milieu, causing neurobehavioral impairments. Inflammation is one of the mechanistic pathways through which chemotherapeutic agents can impact the brain and cognitive functioning.

Methods

Intact and ovariectomized (OVX) C57BL/6 mice were treated with cyclophosphamide (CP) alone (8 intact/8 OVX), CP with Naproxen sodium (NS) (8 intact/8 OVX), NS alone (8 intact/8 OVX) and saline (8 intact/8 OVX). Five injections of (CP, 100 mg/kg) or saline were administered intraperitoneally every 3 days for 2 weeks. The mice received a diet containing NS (375 ppm) or a control diet starting 1 week prior to CP treatment or saline. Mice were tested using Elevated Zero Maze to assess anxiety-like behavior, Tail Suspension Test to assess depression-like behavior, and an infrared beam chamber to examine exploratory/locomotor activity. We also assessed levels of inflammatory cytokines.

Results

CP treated mice displayed anxiety-like behavior, decreased exploratory behavior and spontaneous locomotor activity (*Ps*< 0.002, 0.02, and 0.0003, respectively), which seems to be mitigated by NS. We found no effect of CP on spatial memory and depression-like behavior (all *Ps*> .05). OVX mice displayed more anxiety-like behaviors compared to intact mice, regardless of treatment ($p = 0.04$). We found a significant difference on IL-6, IL-2, IL-12p70 and MCP-1 in mice treated with saline vs. CP. The difference on IL-2 did not hold in mice treated with NS. Additionally, NS treatment increased IL-10.

Conclusions

Chemotherapeutic agents are linked with inflammation and neurobehavioral dysfunction, which may be mitigated with anti-inflammatory treatment.

ePI33

THE EFFECT OF RELAXATON EXCERCISES ON SYMPTOM SEVERITY OF THE PATIENTS WITH BREAST CANCER UNDERGOING ADJUVANT CHEMOTHERAPY

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Introduction
This non-randomized controlled, open-label, parallel group experimental design was conducted to determine the effect of progressive relaxation exercises on chemotherapy symptoms in patients with breast cancer undergoing adjuvant chemotherapy.
Methods
49 breast cancer patients, from whom samples were taken were identified as intervention (n = 25) and control (n = 24) groups. Patients in relaxation exercise intervention group; it has been carried out in three phases: teaching of the *researcher in the clinic*, *practice in the hospital with the researcher in the clinic*, and *patients' individual application at home*. Patients in control group didn't perform relaxation exercise, only received standard medical care. Measurements were made at 8 different times during 4 cures, before each chemotherapy treatment and on the 11th day after the cure has finished.
Results
After the relaxation exercise, in the comparison between the groups; The severity of pain, fatigue, nausea, sadness, anxiety, insomnia, lack of appetite, feeling bad, shortness of breath, change in skin and nails and canker sore was found to be significantly decrease in intervention group than in the control group, although the severity of these symptoms was seen to be significantly increase in control group ($p < 0.05$).
Conclusions
It was determined that relaxation exercise has a positive effect on decreasing the symptoms of adjuvant chemotherapy. According to this result, the use of relaxation exercise has been recommended for reducing the severity of chemotherapy symptoms in patients with breast cancer receiving adjuvant chemotherapy.

eP134
ORAL CLINICAL OUTCOMES OF GRAFT-VERSUS-HOST DISEASE IN 147 PATIENTS SUBMITTED TO ALLOGENEIC HEMATOPOIETIC STEM CELL TRANSPLANTATION: AN EXPERIENCE OF A SINGLE CANCER CENTER

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Introduction
The graft-versus-host disease (GVHD) is an important complication of the allogeneic hematopoietic stem cell transplantation (AHCT), that affects several organs, including the mouth with impact in patients' quality of life. The aim of this study was to evaluate the incidence and clinical outcomes of oral GVHD in patients undergoing AHCT, as well as to determine predictive factors for its occurrence.
Methods
Medical records of 150 patients who were submitted to AHCT between January 2010 to January 2015 were reviewed for clinical features and establishment of risk factors.
Results
A total of 147 patients was included. Three patients were excluded due to multiple AHCT. Ninety-nine patients (66%) presented systemic GVHD. The skin was the most affected site (44.6%), followed by gastrointestinal tract (27.3%) and oral cavity (17.3%). The mean development time of oral GVHD was 229 days after AHCT. The pain was the main complaint (96,15%) followed by xerostomia (65.38%). The most common manifestations were ulcers (53.84%) followed by white striated ulcers (19.23%), mostly affecting buccal mucosa and tongue. Cox regression revealed that systemic GVHD patients presented a 5.70 higher chance for oral GVHD (p=0,018) from which, patients with skin and lung GVHD presented 3.48 and 3.13 times the risk of oral GVHD, respectively (p-0,010). Seventy-three patients (48.6%) died during the first 20 months after AHCT.
Conclusions
The mouth is the third most common GVHD affected topography. Pain, xerostomia, ulcers associated or not with white striae were the main clinical manifestations. Skin and lung GVHD were considered risk factors for the occurrence of oral GVHD.

eP135
BETHANECHOL USED TO PREVENT SALIVARY GLAND DYSFUNCTION IN PATIENTS SUBMITTED TO RADIOACTIVE IODINE THERAPY: A DOUBLE-BLIND, PLACEBO-CONTROLLED, RANDOMIZED STUDY

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Introduction
Symptoms related to salivary gland damage are one of the most frustrating complications after radioactive iodine (^{131}I) therapy. To the best of our knowledge this is the first study that aimed to evaluate the prophylactic effect of bethanechol on the radioiodine content of salivary gland.
Methods
Fifty patients who were referred to ^{131}I therapy were randomized into bethanechol and placebo groups. Patients received Bethanechol or Placebo (25 mg, 2 times daily), starting 2 hours after ^{131}I therapy to 1-month. Both groups were compared at baseline, 10, 30 and 90 days after ^{131}I therapy based on the following: (1) symptoms related to salivary gland damage (2) unstimulated whole saliva (UWS) and (3) quality of life using University of Washington Quality of life 4 questionnaire.
Results
Bethanechol group presented significantly lower complaints of dry mouth on 10 ($p = 0.047$) and 30 ($p=0.003$) days compared with placebo. Salivary gland pain and swelling were more frequent among placebo patients at 10 days ($p = 0.047$). Comparison of the two groups by UWS, no statistical difference was found. Placebo group presented worse score related to activity ($p = 0.034$), saliva ($p = 0.05$) and humor ($p = 0.05$) at 10 days; palate ($p = 0.05$) and saliva ($p = 0.05$) at 1 month. Interestingly, bethanecol patients who received 131I dose > 125mCi, showed better xerostomia indices when compared to Placebo with same dose.
Conclusions
Bethanechol during 131I therapy was found to be effective in decreasing the acute salivary gland damage with impact on patients' quality of life.

eP136
FEASIBILITY OF SCREENING AND MANAGING CAREGIVER BURDEN AND DEPRESSIVE SYMPTOMS IN CANCER CLINICS DURING PATIENT POINT-OF-CARE

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Introduction
Half of cancer caregivers experience depression, caregiver burden, or stress, yet less than a third have discussed their needs with anyone. Identifying this vulnerable population is challenging since caregivers only interact with the healthcare system in service of the patients. Our objectives were: 1) To test the feasibility of screening cancer caregivers for burden and depressive symptoms during patients' radiation and chemotherapy visits; and 2) To test the feasibility of a brief counseling session for caregivers who screened positive for either.

Methods
50 caregivers of patients with head and neck cancers were recruited from cancer clinic waiting rooms at Palo Alto VA and Stanford. Caregivers completed the PHQ-9 (depressive symptoms), and Zarit Burden Inventory-Short Form (caregiver burden). Participants screening positive for burden (>16) and/or depressive symptoms (>9) were provided psychoeducational resources and the choice to attend 1 brief counseling session with a clinical psychologist.
Results
Of the 50 participants who completed the surveys, 36 (72%) were women and 30 (60%) were significant others. Mean scores for depressive symptoms and caregiver burden were 6.29±5.01 and 11.02±8.62, respectively. 20 participants screened positive for depressive symptoms (n=9) or caregiver burden (n=11); 3 screened positive for both. Of those who screened positive, only 4 indicated an interest in counseling. Main reason for refusal was lack of time, or that they were already receiving mental health care.
Conclusions
Screening caregivers at patient's radiation and chemotherapy visits is feasible and convenient. However, connecting those in need to mental health resources may be more challenging.

eP137
EFFECT OF PALLIATIVE BRONCHOSCOPIC INTERVENTIONS ON SYMPTOM BURDEN IN PATIENTS WITH CENTRAL AIRWAY NARROWING: A RETROSPECTIVE REVIEW

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Introduction
Early integration of palliative interventions in patients with Central Airway Obstruction (CAO) has shown to reduce patients' distress due to breathlessness and achieve better outcomes at lower cost. This retrospective review was performed to determine whether rigid bronchoscopic interventions alleviated the symptom burden and the requirement for continued mechanical ventilation in patients with CAO in a tertiary care hospital
Methods
Detailed records of 105 patients with central airway obstruction were retrospectively studied. The Numerical rating scale (NRS) score for cough and dyspnea, before and after the intervention were noted. A need for an escalation or reduction in level of care was also noted
Results
The mean NRS score for dyspnea (n=84) reduced from 7.5 (4-9) (before procedure) to 2.5(2-6) after intervention. ($p<0.01$) The mean NRS score for Cough (n=68) also reduced from 6.5 (4-8) (before procedure) to 4 (3-7) after intervention ($p<0.01$). Of these patients, bronchoscopic intervention allowed transfer-out of the ICU in 14 patients (42%), and immediate withdrawal of mechanical ventilation in 8 patients (42%)
Conclusions
There is an instantaneous valuable palliation of symptoms and improved health care utilization with airway tumor debulking and stenting. Multidisciplinary interventions with emphasis delivery of palliative care provide better care of patients with CAO

eP138
SELF-REPORTED GLOBAL AND DOMAIN-SPECIFIC COGNITIVE DYSFUNCTION IN OLDER ADULTS WITH NEWLY-DIAGNOSED GASTROINTESTINAL MALIGNANCIES– RESULTS FROM THE CANCER AND AGEING RESILIENCE EVALUATION (CARE) STUDY

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Introduction
Cognitive dysfunction (CD) is poorly described in older adults with GI cancers. The purpose of this study was to quantify the prevalence and identify baseline determinants of patient-reported global and domain-specific CD in older adults with GI cancers.
Methods
This analysis draws from the CARE Study and includes patients aged ≥60y with a new diagnosis of GI malignancies. CD was measured via the Patient-Reported Outcomes Measurement Information System (PROMIS®) Short Form 4a Cognitive Function survey. Descriptive statistics were used to examine the prevalence of global and domain-specific CD. Scores were dichotomised into normal and impaired (global scores of 4-15; domain scores of 1-3). Bivariate associations between demographic, clinical, and GA domains were tested to identify indicators of CD.
Results
185 adults were investigated. Mean age 70.0± 7.20, 60.0% male, and most common cancers included colon cancer (25.4%). 30.8% of participants endorsed CD and 7.5% endorsed moderate/severe symptoms (scores of 4-11). Processing speed was the most common impaired domain identified (33.5%). CD was strongly associated with an increased risk of depression (RR = 6.8 (3.9-12.1), $p<0.01$), hearing impairment (RR = 3.3 (1.9-5.5), $p<0.01$), ADL impairment (RR 3.3(1.8 - 5.9), $p<0.01$), anxiety (RR = 2.7 (2.0 - 3.7), $p<0.01$), ECOG ≥2 (RR 2.7 (1.8 - 4.1), $p<0.01$), visual impairment (RR 2.6 (1.5-4.5), $p<0.01$), and lack of social support (RR 2.5 (1.5 -4.1), $p<0.01$).
Conclusions
We found a high prevalence of self-endorsed CD in older adults with GI malignancies with highest impairments seen with processing, and CD was associated with several GA impairments.

eP139
LONG-TERM COLLECTION OF SYMPTOMS FOR PATIENTS WHO HAVE COMPLETED TREATMENT FOR EARLY BEAST CANCER AND UNDERGOING FOLLOW-UP THROUGH THE MAMMO-50 TRIAL

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Introduction
Mammo-50 trial has recruited 5235 women in a randomised trial assessing duration of mammographic surveillance for women over 50

years old and 3 years post curative surgery. Patients not wishing to be randomised could be entered into a sister cohort, which recruited 914 patients. These 6000 patients provide rich data to explore long-term symptoms and side-effects for women up to 9 years post-diagnosis.

Methods

Within Mammo-50, 92% of women who agreed to participate in a quality of life sub-study (QoL) which collects **patient questionnaires at baseline and at each follow-up visit,** reporting symptoms and long-term side effects. Questionnaires included Distress Thermometer, Fear of Recurrence, Warwick-Edinburgh Mental Well-being Scale and FACT-B. Also 75% of women consented to enter the Qualitative sub-study (QSS) which included semi-structured telephone interviews between 3 and 6 years post diagnosis.

Results

The Mammo-50 baseline patient questionnaires indicated that 25% of patients had distress, with 7% reporting high levels of distress, due to concerns about fatigue, sleep, worry/anxiety, memory/concentration, hot flushes and pain. The patient interviews reached saturation quickly with many patients being concerned about early discharge from hospital follow-up and the fear of recurrence.

Conclusions

Living with and beyond a diagnosis of cancer in the climate of early hospital discharge means that patients are living with distress when thinking about their long-term prognosis. A risk-adjusted patient follow-up would be ideal in order to actively manage symptoms and provide a level of reassurance to patients. Mammo-50 provides the platform to develop a management system for patients reporting symptoms and long-term side-effects.

ePl40
COGNITIVE AND AFFECTIVE SYMPTOMS ASSOCIATED WITH CANCER PAIN AMONG AFRICAN AMERICANS

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Introduction

African Americans (AA) experience a disproportionate burden of cancer pain. Affective and cognitive symptoms are often associated with cancer, pain, and treatment. The purpose of this study was to assess the relationship between perceived cognitive function and depression with perceptions of pain among AA cancer patients treated with opioids.

Methods

The convenience sample consisted of 60 AA cancer patients receiving opioids. Pain (Brief Pain Inventory), depression (Personal Health Questionnaire), and cognitive difficulty (Cognitive Difficulties Scale) were completed. Associations among variables were estimated using bivariate correlations and multiple linear regression.

Results

Mean age was 57; 60% were women, and 52% had at least some college education and were experiencing moderate pain and interference (mean pain severity and interference scores equaled 6.6; ±1.8 and 5.5; ±2.4 on a scale of 0 to 10). Greater perceived cognitive difficulties score was significantly associated with higher pain interference (rho=0.37, p=0.004) but not with higher pain severity, whereas depressive symptoms were significantly associated with higher pain interference (rho=0.68, p<0.001) and higher pain severity (rho=0.45, p<0.001) after controlling for cognitive difficulties. The interaction effects between cognitive and depressive symptoms on both pain interference and pain severity were not statistically significant, although depressive symptoms were positively associated with pain interference (b=0.41, p<0.001) and pain severity (b=0.26, p=0.001).

Conclusions

The association among symptoms is important to consider in cancer patients treated for pain with opioids. These findings enhance understanding of this triad of symptoms and provide information on which to base future work to improve the symptom experience for AA cancer patients.

ePl41
ATTITUDES ABOUT LEGALIZATION OF MARIJUANA FOR MEDICAL AND RECREATIONAL PURPOSES BY CANCER PATIENTS IN TWO CANCER CENTERS LOCATED IN A LEGALIZED AND A NON-LEGALIZED STATE

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Introduction

Marijuana is one of the most common drugs used. In USA, 30 states and Washington DC have voted on various levels of legalization of marijuana for medical and recreational purposes. In this study, we compared the attitudes of cancer patients in a legalized (Arizona) vs. a non-legalized state (Texas) on legalizing marijuana for medical and recreational use.

Methods

200 adult cancer patients were enrolled from the outpatient Palliative Care centers in comprehensive cancer centers in Arizona (legalized) and Texas (non-legalized). Various physical and psychosocial instruments were collected including a survey designed to determine attitudes of patient towards marijuana. All patients were residents of the state where they were enrolled and no identifiers were associated with data recorded.

Results

No significant difference was found between both locations in attitude towards legalizing marijuana medically [Arizona 92%(85-97%) vs. Texas 90%(82-95%); p=0.81]. Patients who favored legalizing marijuana were younger (median age 59 vs. 67y; p=0.027) and had worse Edmonton Symptom Assessment System fatigue (median 5 vs 3; p=0.015) and appetite (median 3 vs 0.5; p=0.004) scores. Patients who have used marijuana were more supportive of its medical legalization (95% vs 88%; p=0.024). Support for medical legalization was significantly different compared to support for recreational legalization in the overall population, Arizona and Texas (p<0.0001 respectively). Overall, patients who supported recreational marijuana were found more likely to support medical marijuana (96% vs 87%, p=0.022).

Conclusions

Cancer patients from both a legalized and non-legalized state showed strong support for legalization of marijuana for medical purposes and not for recreational use.

ePl42
ROLE OF PHYSICAL ACTIVITY ON IMPROVING CANCER-RELATED FATIGUE: AN UPDATED SYSTEMATIC REVIEW AND META-ANALYSIS

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Introduction

Cancer-related fatigue (CRF) is a prevalent, multidimensional, and debilitating side effect experienced across all cancer types and varying by disease stage and treatment. Although modest beneficial effects of physical activity (PA) on CRF have been

demonstrated, the contribution of varying frequencies, intensities, durations and types of PA on reducing CRF is clinically relevant but presently unclear. This systematic review and meta-analysis aims to understand the effect of PA on reduction of CRF.

Methods

A systematic review and meta-analysis of randomized controlled trials searching Medline, EMBASE, and Cochrane CENTRAL from inception until December 2018. Studies included some form of PA intervention, an outcome of fatigue, and/or quality of life, and physical functioning. Title and abstract searching, full text review, and data extraction were done by two independent reviewers.

Results

Of the 4,258 studies found from the electronic search, 199 RCTs were included in this review, including 50 new RCTs since the last major review by Mustian et al. in 2017. A total of 16,306 participants with mean age ranging from 31.5 – 73 years old, and cancer diagnoses such as breast (n=91), mixed sites (n=34), prostate (n=27), leukemia and lymphoma (n=8), and other (n=39). Meta-analyses are in progress and will be reported at the meeting.

Conclusions

To our knowledge, this is the most comprehensive and up to date systematic review and meta-analysis on the role PA has on reducing CRF. Our study includes non-traditional PA interventions such as dance, hydrotherapy, and horseback riding, further providing evidence-based knowledge on treating CRF.

eP143
EXPLORING THE RELATIONSHIP BETWEEN OMEGA-3 INDEX LEVELS AND CANCER-RELATED COGNITIVE IMPAIRMENT AMONG WOMEN WITH BREAST CANCER

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Introduction

Cancer-related perceived cognitive impairment (**PCI**) is a common survivorship problem affecting at least 35% of breast cancer survivors that can profoundly impact quality of life and social integration. There are no readily available biomarkers that can help identify survivors at higher risk for these symptoms. Decreased Omega-3 fatty acid levels have been associated with increased levels of inflammatory markers [1-3] and diminished cognitive function and brain volume.[4-6] However, to date, no study has evaluated the relationship between Omega-3 fatty acid levels with PCI in the cancer survivorship setting.

Methods

We collected finger-spot blood samples from 47 participants who were part of our study for a cognitive rehabilitation program. These samples were analyzed for Omega-3 fatty acid index [expressed as a percent of total erythrocyte fatty acids including eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA)].

Results

Findings from a partial sample of 39 participants indicated an association between low Omega-3 fatty acid indices and participants' report of worse cognitive function on both the Patient Reported Outcomes Measurement System (PROMIS) Applied Cognition General Concerns and Abilities short forms (p=.04).

	PROMIS Gen Concern	PROMIS Cog Ability	
Omega3 index	-0.33528	0.32871	Spearman correlation
	0.0369	**0.041**	p-value

Conclusions

If the above correlation is validated with a larger sample, this simple test may be able to be used as an inexpensive biomarker for PCI. Increased intake of foods rich in Omega-3 is postulated to benefit cognitive function in other populations but has yet to be examined for the management of PCI in the cancer survivorship setting. Optimization of the Omega-3 index could represent a safe, low-cost intervention that can be disseminated broadly.

eP144
DIGITIZED KNOWLEDGE; DIGITIZED CARE: A CRITICAL ANALYSIS OF THE ELECTRONIC PATIENT RECORD IN THE TREATMENT OF ADVANCED CANCER

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Introduction

Digitized health technologies, such as the electronic patient record (EPR), have the potential to educate, activate, and engage patients in unprecedented ways. The move to ensure patients have open access to their medical e-charts may accelerate the uptake of this technology. In this study, I offer a critical analysis of the EPR in the biomedical treatment of advanced cancer to consider how the growing emphasis on virtual medical knowledge might alter cancer care.

Methods

This study draws on a narrative literature review of digital health studies and an analysis of a case study of a patient with advanced cancer who used EPR data to make decisions about oncological treatments.

Results

The increasing reliance on EPR may shift the focus of care for both patients and professionals in multiple ways. Three major themes emerged: (1) *Perpetuating the Gaze of Medicine* - Viewing the diseased body as a primarily medical and electronically mediated text; (2) *Reconstituting the Embodied Understanding of Advanced Cancer* - Accessing virtual knowledge (independent of medical guidance) that continually depicts a poor prognosis, thereby reshaping the relationships patients have with their vulnerable bodies; and (3) *Shifting Patient-Clinician Relationships* - Scripting care to involve the simple exchange of electronic data, rather than fostering genuine interactions that consider the complexities of having a life-limiting disease.

Conclusions

Used thoughtfully, EPR could enhance the goals of supportive care. Health professionals first need to think critically about the effects of EPR on perpetuating a biomedical focus, reframing patients' understandings of incurable disease, and eroding compassionate relationships.

eP145
THE FEASIBILITY OF USING E-PRO IN AN ESOPHAGO-GASTRIC CANCER POPULATION

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Introduction
Patient-Reported Outcomes (PROs) draw increasing attention throughout the health care system as evidence for its use and effect is being explored these years. In present study we focus on the use of PROs in patients with esophago-gastric cancer undergoing perioperative chemotherapy. With complex multimodal treatment, an optimal symptom management and control during chemotherapy is of great significance. However, there is a lack of recommendations for PRO in patients with esophago-gastric cancer that can support an implementation. The aim of this study is to test the feasibility of an electronic PRO questionnaire in a Danish population of esophago-gastric cancer using MyChart-EPIC as electronic platform.
Methods
Participants in the study are patients with operable esophago-gastric cancer receiving perioperative chemotherapy (n=25), with access to The Internet. Patients are asked to complete the electronic PRO-CTCAE™ questionnaire at baseline and before each treatment evaluation using MyChart-EPIC. Nurses and physicians are instructed to access the questionnaire via EPIC and integrate the information in the clinical decision making. The primary endpoints are the compliance rates of the questionnaires and acceptance as well as an evaluation of the technical platform from the perspectives of the patients, the nurses and the physicians.
Results
The study was initiated in December 2018, results are awaited in the start of 2020.
Conclusions
The study will provide new knowledge about the utility of PROs among esophago-gastric cancer patients while applying the MyChart-EPIC as an electronic platform.

eP146
DETERMINING THE USE OF HEALTH LITERACY AND WEB BASED INFORMATION RESOURCES FOR CANCER PATIENTS

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Introduction
Informed decision making at every stage of the diagnosis and treatment process of cancers enables patients to cope with cancer diagnosis and to have more realistic expectations. The aim of this study was to determine the use of health literacy and web-based information sources for cancer patients.
Methods
The study included 134 cancer patients who were treated in Hematology and Oncology Clinic at an education and research hospital. To collect data,'Data Collection Form' and 'Adult Health Literacy Scale' were used. To analyse data, descriptive statistics, Pearson correlation and Kendall's tau-b correlation, independent samples t test were used.
Results
The mean age of cancer patients in the study was 50.04±15.99. The first of the diagnoses was breast cancer (29.1%). The percentage of patients who search for health on the internet is 47.8%. 32.1% of them stated that they investigated their diseases and treatments, 23.2% cancer types, 17.9% nutrition issues, 29.1% cancer treatment, 18.7% breast cancer, 10.4% lung cancer. There was no statistically significant difference between women and men in terms of health literacy scale scores ($p>0.05$). The scale scores were found to be statistically higherin these patients; in computer users ($t=4.091, p<0.001$), those who have internet at home ($t=4.500, p<0.001$), mobile phones in the internet ($t=5.082, p<0.001$), those who search the Internet health ($t=5.121, p<0.001$). As the education level increases, the scale scores increase ($=0.388, p<0.001$); scale scores decrease as age increases ($r=-0.287, p<0.001$).
Conclusions
It is an important responsibility of health professionals to determine health literacy, health information and their usage status and to determine the effect of all these factors on their health.

eP147
E-ONCOSALUD: A SMARTPHONE APP FOR HOME MANAGEMENT OF SIDE EFFECTS ASSOCIATED WITH TREATMENT WITH ORAL ANTINEOPLASTICS AGENTS.

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Introduction
Oral antineoplastics agents (OAA) produce numerous side effects (SE). The smartphone app can improve the home management of these SE. Our objective is to evaluate an app in the home management of the SE associated with OAA treatment.
Methods
A mobile app (e-Oncosalud®) was designed. It includes a module for the management of SE. It is based on an algorithm that emits different recommendations according to the severity recorded by the patient. The SE focuses on the management of fatigue, diarrhea, nausea, and skin toxicity, among others. Since May 2017, the app has been offered to patients who start treatment with OAA.
Results
In May 2018 patients who had been using the app for at least one month were analyzed. 70 patients used the app (50% men), average age 58.9 years (SD=13.1). OAA most frequent: sorafenib (17.1%), enzalutamide (10%) and imatinib (10%). Average time of use of the app: 20.5 [4.3-51.9] weeks. 48.6% of the patients registered at least one SE in the app. During the first week of treatment, 42.1% registered an SE. The mean of SE recorded per patient was 1.6 (SD=2.2). The most frequent were: fatigue (28.6%), diarrhea (25.7%), skin toxicity (18.6%) and nausea (10%). Thanks to the recommendations trough the app, 4 emergency room attendances were avoided and 6 patients were referred to their general practitioner.
Conclusions
The use of the app has impacted on the health outcomes of our patients. e-Oncosalud® has facilitated the early detection of SE, contributing to the safety of its treatment.

eP148
INTRODUCING A DIGITAL INDIVIDUAL CARE PLAN IN HEAD AND NECK CANCER- BARRIERS AND FACILITATORS

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Introduction
Patients with Head & Neck (H&N) cancer often have a complex care trajectory. The Swedish National Cancer plan states that all patients should receive an individual written care plan (IWCP). The IWCP should be done together with the patient containing what is important from both Health care provider (HCP) and patient perspective.
Until recently the IWCP, constituted of an information booklet, and the patient treatment plan in the medical records.
Methods
All patients with H&N cancer may choose a standard IWCP or the digital format. The digital IWCP is prepared by the contact nurse (CN). The

patients can interact with the CN and also send a NRS scale over different symptoms as well as rehabilitation tool. This quality development project is evaluated by an independent CN, with interviewing both the involved patients and CN involved.

Results

Evaluation of this project is currently undergoing, 10 patients are interviewed so far. Since started 25% of patients prefer a digital IWCP, and patients offer many suggestions for improvement. The CNs´ involved assess the digital IWCP as easy, less time consuming and more suited to personalize compared with the book leaflet. The evaluation suggest a greater patient participation.

Conclusions

One enabler for implementation is that the platform is chosen through a national consensus and the HCP and patients may influence the design. Not all patients want a digital version when a paper version is offered. There is a potential for increased use of screening tools and systematic assessment of symptoms with the digital version of the IWCP.

eP149
USABILITY AND FEASIBILITY OF A THEORY-BASED AND USER-CENTRED ORAL ANTICANCER MEDICATION ADHERENCE APP

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Introduction

This study aims to evaluate the usability and feasibility of an oral anticancer medication (OAM) adherence app developed in a user-centred design process that incorporates the elements of health behaviour theories.

Methods

An OAM adherence app (named MedFC) was iteratively developed and evaluated for its usability and feasibility. Patients who self-managed their OAMs or caregivers who were directly involved in helping patients to manage their OAMs were recruited for the usability evaluation of the first (N=15), second (N=10) and third (N=11) versions of MedFC. Usability was measured using the system usability scale (SUS). SUS scores range between 0 and 100, with higher scores indicating better usability. The pilot feasibility evaluation involved participants (N=5) using the third version of MedFC for a minimum of three weeks. Feasibility was evaluated based on the ability of the app to monitor OAM adherence.

Results

The median SUS scores of the first, second and third versions of MedFC were 65 (IQR: 55; 82), 74 (IQR: 65; 75) and 90 (IQR: 80; 95), respectively. Based on a Kruskal-Wallis analysis, there were statistically significant differences between the SUS scores of the first and third versions ($p = 0.001$), and the second and third versions ($p = 0.020$) of MedFC. MedFC was able to capture at least 69.0% of the times the patient consumed their medication, and > 80.0% adherence levels were seen in 3 (60.0%) of the participants.

Conclusions

MedFC was found to be usable and feasible for managing adherence in patients taking OAMs.

eP150
A PILOT OF TELEMEDICINE SUPPORTIVE CARE INTEGRATED INTO A RURAL ONCOLOGY CLINIC

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Introduction

Despite the rapid growth in palliative care (PC) services, regions remain without access to specialty palliative care. Community-based telemedicine may offer solutions to underserved populations from rural areas within the United States.

Methods

Retrospective review of 22 patients managed in a rural oncology clinic from a University hospital via telemedicine. Consecutive patients over 9 months, with active, advanced cancer referred for symptom management, transitions of care, or both. Care coordinated by the University PC service and oncology clinic, included nurses, nurse practitioner, and oncologist. Regulatory, legal, Information Technology (IT), and systems logistics were developed in partnership for 6 months prior to pilot. Edmonton Symptom Assessment Scale (ESAS) recorded at each visit.

Results

Average age 66, predominately female with metastatic solid tumors. Patients had 1-3 telemedicine visits. Most common symptom was pain, median score 6. Morphine equivalent daily dose averaged 65. Most common opioids were oxycodone, transdermal fentanyl, and extended release morphine. Three visits required physical exam support from onsite providers (one for dermatological, 2 for neurologic exams). Six visits required immediate controlled substance prescriptions (other prescriptions were mailed; non controlled prescriptions sent electronically). Goals of care discussion in 45% (n=10) and advance care planning documents reviewed when applicable. Technological issues occurred in 2 visits and resolved without IT involvement.

Conclusions

Our pilot program integrated specialist palliative care into a rural oncology clinic providing supportive care via telemedicine, including symptom management and goals of care discussions. Further research should define optimal integration of PC telemedicine into rural oncology clinics.

eP151
PREDICTING SURVIVAL OF TRIPLE NEGATIVE BREAST CANCER USING ARTIFICIAL INTELLIGENCE

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Introduction

Breast cancer is a major health problem with nearly 459,000 deaths every year. Triple Negative Breast Cancer (TNBC) has bad prognosis compared to other subtypes. Patients often want to know how long they have left to live and it's the first question patients ask after diagnosis. Reliable predictions can help in achieving more personalized care and better management. Here, we test the performance of machine learning an application of artificial intelligence to predict TNBC survival.

Methods

Patients were identified through the Surveillance, Epidemiology and End Results database (SEER). Clinical data were extracted including: age, race, site, histology, grade, size, lymph nodes (LNs), metastasis, stage, treatment and survival. Records were randomly divided into a training set (80%) and a validation set (20%). Different algorithms were tested to predict survival.

Results

A total number of 13078 patients were identified in 2010-2011 with mean survival of 47.5 months. Random Forest (RF) achieved an Area under the Receiver Operating Characteristic Curve (AUC) of 92.4% at 6-months, 85.6% at 12-months, 81.1% at 24-months, 80.4% at 36-months and 80.7% at 48-months. Multi-layer Perceptron (MLP) yielded AUCs of

92.6%, 86.8%, 80.5%, 79.3%, 79.1% at 6, 12, 24, 36, 48 months, respectively. Average precision was 85% RF and 86.6% for MLP. The most important model features were number of positive LNs, tumor size and age.

Conclusions

Machine learning achieved a good performance in predicting TNBC survival based on clinical data. High performance of prediction is essential because it can help in making better treatment decisions and planning social and care needs.

ePP152
REAL-WORLD EXPERIENCE WITH ELECTRONIC PATIENT REPORTED OUTCOMES (EPROS) IN CLINICAL CARE: "DON'T ASK ME IRRELEVANT QUESTIONS"

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Introduction

Utilization of electronic patient-reported outcomes (ePROs) can improve quality of life and prolong survival in cancer care. However, there remain unanswered questions regarding trends in missing data, and related effects on care.

Methods

We utilized a prospectively collected database of ePROs from oncology clinics administering Patient Care Monitor 2.0 (PCM), a validated symptoms survey assessing 78 items for men, and 86 for women. We tabulated the proportion of missing items, by item and domain (emotional, functional and symptom-related, constituting 11, 14, and 53 PCM items, respectively), and compared these by age, gender and education.

Results

In 21,185 encounters, there were responses to at least 1 PCM item from 6960 patients. The largest proportion of missing answers occurred for: attend a paid job (10.7%), reduced sexual enjoyment (3.8%), and running (3.7%), items which may not apply to certain patient subgroups. By domain, 12.4% of functional, 8.4% of symptom-related, and 1.6% of emotional items were missing. For functional and symptom-related items, the highest rates of missingness were observed in patients >60 years old.

TABLE 1: PATIENT DEMOGRAPHICS

	PATIENTS (N=6960)	ENCOUNTERS (N=21185)
AGE IN YEARS		
MEAN (SD)	61.3 (12.7)	61.1 (12.7)
GENDER		
MALE	2937 (42.2%)	10279 (48.5%)
FEMALE	4010 (57.6%)	10888 (51.4%)
UNKNOWN	13 (0.2%)	18 (0.1%)
RACE		
WHITE/CAUCASIAN	4962 (71.3%)	15081 (71.2%)
BLACK/AFRICAN AMERICAN	1128 (16.2%)	3686 (17.4%)
OTHER	222 (3.2%)	670 (3.2%)
UNKNOWN	648 (9.3%)	1748 (8.3%)
EDUCATION		
HIGH SCHOOL DIPLOMA OR LESS	2112 (30.3%)	6475 (30.6%)
ASSOCIATES, TECHNICAL, SOME COLLEGE	1768 (25.4%)	5518 (26.0%)
BACHELOR'S DEGREE	1168 (16.8%)	3672 (17.3%)
SOME GRAD SCHOOL/GRADUATE DEGREE	1346 (19.3%)	4054 (19.1%)
UNKNOWN	566 (8.1%)	1466 (6.9%)
MARITAL STATUS		
MARRIED/PARTNERED/REMARRIED	4899 (70.4%)	15344 (72.4%)
OTHER	2048 (29.4%)	5823 (27.5%)
UNKNOWN	13 (0.2%)	18 (0.1%)
CANCER LOCATION		
BREAST	923 (13.3%)	3495 (16.5%)
GI	643 (9.2%)	2185 (10.3%)
LUNG OR BRONCHUS	829 (11.9%)	3075 (14.5%)
PROSTATE	596 (8.6%)	2471 (11.7%)
UNKNOWN	2850 (40.9%)	5996 (28.3%)
OTHER	1119 (16.1%)	3963 (18.7%)

TABLE 2: PCM ITEMS WITH HIGHEST RATES OF MISSINGNESS (N=21185)

	% MISSING RESPONSES PER ITEM
MISSINGNESS ACROSS ALL ITEMS	
MEAN (SD)	1.03% (1.31)
MEDIAN (IQR)	0.7% (0.5%, 0.9%)
PCM ITEMS WITH HIGHEST RATES OF MISSINGNESS	
ATTEND PAID JOB	10.7%
REDUCED SEXUAL ENJOYMENT INTEREST OR PERFORMANCE	3.8%
RUN	3.7%
HEAVY WORK OR ACTIVITY	2.6%
HOUSE WORK	2.5%
DRIVING	2.3%
COOK FOR SELF	2.3%
RUN ERRANDS	2.2%
WEIGHT GAIN	2.0%
NEW LUMP / MASS	1.9%

Conclusions

The rate of missingness was highest for functional items, like attending a paid job, and sensitive sexual health questions. We hypothesize that some respondents (e.g., retirees without a paid job) skipped questions that were not applicable to them. More universal issues for cancer patients, such as emotional well-being, had much lower rates of missingness. This suggests that patients differentially complete ePROs based on perceived question relevance. Differential item completion warrants further study, given potential effects on the clinical utility of ePROs.

ePP153
CURECANCER TOOL HAS A SUPPORTIVE CARE MISSION

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Introduction

While working in a dental oncology office we realized the need for practitioners to know their patients' medical history and the difficulty to obtain this information. Patients during active or after cancer therapy or long-term survivors struggled with collating details related to the complex cancer and supportive care treatments and other key information. CureCancer, a patient-centered tool, was inspired. We aimed to help patients self-create their medical profile and treatment plan and communicate their profile to health care professionals (HCPs) within or outside the oncology setting.

Methods

Information to be recorded was identified and included patient demographics, cancer type and stage, co-morbidities, cancer therapies and medications, phase of therapy, symptoms and laboratory examinations. The Agency of Personal Data protection was contacted to ensure data protection and secure keeping.

Results

The CureCancer tool, www.curecancer.gr, www.curecancer.eu, was created and can function from a desktop or a mobile application. Patients can record and update their medical information and status, upload laboratory examinations, track their symptoms and share files to facilitate the HCPs. Patient to patient communication, patient-focused information on toxicities, and news on the continuous progress of cancer therapies were included in the platform.

Conclusions

A new online, patient-driven tool helps patients file their treatment plan and communicate their medical records with the HCPs. CureCancer can

enhance the success of anticancer therapy, minimize toxicities and reduce HCPs' burden. A study was initiated, in collaboration with cancer hospitals and patient associations, to assess feasibility, patient and physician satisfaction, and usefulness of the tool.

eP154
USING MOBILE HEALTH TECHNOLOGY TO TRACK CANCER-RELATED SYMPTOM CLUSTERS IN REAL-TIME

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Introduction
Cancer and cancer treatments are associated with multiple symptoms with significant negative impact on quality of life and functioning. Assessment of these symptoms is conducted using evaluation that rely on patients memories of their symptoms and are subject to recall bias. Mobile phones with their large complement of sensors provide a great tool to track behavioral patterns as correlates of cancer-related symptomatology. The objective of the present project is to delineate data from a study conducted by our group to predict depression symptomatology using mobile health (mHealth) technologies and discuss its relevance to track cancer-related symptoms such as depression, fatigue and insomnia.
Methods
A smartphone sensing app, *LifeRhythm,* was developed by our study team that collects location and activity information via sensors available on the phones. A total of 103 participants (39 depressed and 64 non-depressed controls) were recruited to install the app on their smart phones and were followed over an 8 month study period. Three sets of data were collected: sensory data collected by the *LifeRhythm* app, Patient Health Questionnaire (PHQ-9) completed by the participants, and clinical assessments.
Results
Correlational analyses showed that certain features extracted from the data collected by the app (e.g. entropy and number of unique locations) strongly correlated with PHQ-9 scores ($p < 0.05$). These analyses will be presented. Use of this innovative mHealth technology tool to track cancer-related symptoms including a proposed study will be discussed.
Conclusions
The advances in mHealth technologies provide great opportunities to track cancer-related symptoms in an objective manner and in real-time.

eP155
ORAL CHEMOTHERAPY ADHERENCE CAN BE IMPROVED BY ONCOLOGY NURSES UTILIZING TECHNOLOGY

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Introduction
Studies show that adherence to oral medications which are self administered varies widely ranging from 46%-100%. Correctly taking chemotherapy medication is essential to preventing progression of disease among patients diagnosed with cancer. Patients' who self-administer oral chemotherapy agents do not come in to see their medical team as often as patients receiving traditional IV chemotherapy, therefore are not typically monitored as closely as patients who receive chemotherapy regularly in the environment of a clinic infusion center.
Methods
HelpsyHealth is the world's first Artificial Intelligence (AI) symptom management and navigation nursing system. It is an online platform where patients can login daily from their laptop, tablet, or Smartphone and record when they take medications and their symptoms.
Results
HelpsyHealth has developed San, a mobile digital cancer nurse that can help support patients, 24/7. Currently, advisors at HelpsyHealth are working to create an oral chemotherapy tool with common and serious side effects entered. When patients login and answer simple questions about how they are feeling, oncology nurses will be better able to provide recommendations based on this feedback and create a safer care environment for patients.
Conclusions
As cancer care becomes more complex and the number of people diagnosed with cancer rises, nurses can leverage technology in order to care for patients who are increasingly receiving their care outside of the hospital. Utilizing platforms such as HelpsyHealth will improve the overall outcome and safety for cancer patients while allowing nurses to care for more patients safely and efficiently.

eP156
SUPERCHARGING NURSE NAVIGATION: HOW PROVIDING ONCOLOGY NURSE NAVIGATORS WITH TECHNOLOGICAL RESOURCES ADVANCES PATIENT EDUCATION AND SYMPTOM MANAGEMENT

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Introduction
The healthcare system is very difficult to understand and maneuver for cancer patients. Over the last few decades, the role of the oncology nurse navigator (ONN) has become an essential part of this healthcare team that patients have learned to rely on to help manage their care. While every healthcare entity structures the job of the ONN differently, there remain core elements that every ONN possesses no matter where they work; these include educating, helping, and advocating for patients to become self-reliant in a complicated medical system.
Methods
Helpsy Health is a web based platform where both patients and providers can have results uploaded into oncology specific navigation tools. Instead of keeping their own diary of cancer or treatment related symptoms, patients can use Helpsy to record their symptoms and have them tracked in a secure cloud. Additionally, AI helps manage symptoms by directing them to evidence based recommendations, escalating care if needed.
Results
If ONN's get access to this platform, then they can easily, and quickly monitor patient status and provide physicians with more accurate information in order to tailor the patient's treatment plan accordingly. Preliminary results show that providers and nurses who have used Helpsy feel closer to their patients.
Conclusions
As our population gets older and people live longer with more complex illnesses, providing our nurses with the tools to help them manage our community's health and wellbeing is critical to our success in improving the quality of life we can offer individual patients.

eP157
INCIDENCE OF POTENTIAL DRUG-DRUG INTERACTIONS DETECTED BY DIGITAL SCREENING OF PATIENT'S PRESCRIPTIONS USING MEDSCAPE© DRUG INTERACTION CHECKER - A PROSPECTIVE STUDY AT TERTIARY CARE HOSPITAL

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Introduction
A Drug-Drug Interaction (DDI) is a clinical or pharmacological response to the administration of co-exposure of two or more drugs. Since the anticancer therapies are often based on the use of multiple agents, DDIs are a relevant problem in cancer chemotherapy. Aim of study was to estimate the incidence of potential DDIs detected in patients receiving cancer chemotherapy, and to assess the pattern and severity of DDIs in cancer patients by use of easily available digital platform available.
Methods
This study recruited 150 inpatients receiving cancer chemotherapy in the medical oncology wards with various types of malignancies from January 2017 to December 2017. The prescriptions were subjected to DDI screening using Medscape©app based Drug Interaction Checker. The incidence of DDIs, their types, pattern and severity, correlation between age and number of drugs prescribed were analysed.
Results
Among 150 patients (49 males and 101 females) that were enrolled in the study, and their prescriptions were screened. A total of 579 DDIs were found among 134 patients,14 DDIs were 'serious', 403 DDIs were in 'monitor closely' category, and 162 were 'minor' interactions. Based on the mechanism, pharmacodynamic DDIs were found to be 53.36%, pharmacokinetic DDIs were 44.55%, and unspecified were 2.07%. A positive correlation observed between number of drugs prescribed, and drug interactions (p=0.01).
Conclusions
The Risk of DDIs increased with the number of drugs in the prescription. The program of medication surveillance by digitial platform apps could prevent a relatively high proportion of patients from experiencing potentially adverse clinical consequences of DDIs in cancer patients.

eP158
TAILORED INFORMATION ON AND ACCESS TO SUPPORTIVE CARE FOR PEOPLE WITH MELANOMA: DEVELOPMENT OF A MELANOMA MODULE FOR THE EHEALTH SELF-MANAGEMENT APPLICATION ONCOKOMPAS

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Introduction
Oncokompas is an eHealth self-management application to monitor health-related quality of life (HRQOL) and to provide personalized information on HRQOL and supportive care. In Oncokompas there are generic cancer topics available, as well tumor specific topics in the modules targeting breast, colorectal, head and neck cancer and lymphoma patients. In this project, Oncokompas is extended with a module for melanoma patients.
Methods
The melanoma module was developed according to a participatory design approach: patients, health care professionals and researchers worked closely together in the developmental process. This process consisted of a literature study, a focus group with four patients, interviews with ten health care professionals and two feedback rounds on the content and design of the melanoma module with various experts.
Results
Topics in the melanoma module comprise lymphedema, scar care and pain, sunlight, self-examination, fear of recurrence, changes in future perspective, heredity, work, and communication with others about the illness. Most topics developed target melanoma survivors and patients with a stable disease after immunotherapy.
Conclusions
As a result of the involvement of patients, health care professionals and researchers in the developmental process, it is the expectation that the melanoma module in Oncokompas helps in fulfilling the supportive care needs of melanoma patients. Future research is directed at evaluating the efficacy of Oncokompas and implementing the eHealth self-management application Oncokompas in standard hospital care.

eP159
PATIENT-PHYSICIAN CO-PRODUCED CMYLIFE (WEB-BASED PLATFORM) FILLS IN GAPS OF PATIENT INFORMATION AND COMPREHENSION IN CHRONIC MYELOID LEUKEMIA

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Introduction
In order to enhance patient empowerment in Dutch patients with chronic myeloid leukemia (CML) CMyLife was developed together with patients advocates, nurses, medical specialists and ICT professionals. To provide trustworthy information for patients it is key to know which information is lacking in current care and whether that information is found online by patients.
Methods
Before developing CMyLife 203 CML patients treated in 7 different Dutch hospitals completed a survey with validated questionnaires focused on their needs and various aspects of daily life with CML (EORTC-QLQ-C30, EORTC-QLQ-INFO25 and others). After its launch, user statistics of CMyLife during 2017 until 2019 were analyzed.
Results
Questionnaires: The majority (72.2%) of CML patients received written information. One third (35.2%) was not/a little satisfied with the amount of information provided and 35.9% desired more information on possible side effects (40.5%), diagnosis (26%), treatment goals (27%), psychological aid (87.8%), management of their illness at home (85.2%), help outside of the hospital (90.8%), the effect on their social and family life (71%) and sexuality (86.8%). Mean scores on a scale from 0-100 of the EORTC-QLQ-C30 and -INFO25 are listed in Table 1. *User statistics:* CMyLife had on average 718 visitors per month (3/5 visited more than once). The most frequent visited pages are listed in Table 2.

Table 1. Mean scores on Quality of Life and Information Provision (EORTC-QLQ-C30 and EORTC-QLQ-INFO25, respectively).

EORTC-QLQ-INFO 25	N	Mean (SD)
Information on the disease (items 31-34)	197	56.2 (21.4)
Information on tests (items 35-37)	197	63.8 (23.6)
Information on treatment (items 38-43)	196	48.9 (21.1)
Information on other services (items 44-47)	196	16.7(22.0)
Global score (all items)	195	42.8 (18.2)
Satisfied with amount of information on a scale from 1 (not at all) to 4 (very much).	196	2.79 (0.76)
EORTC-QLQ-C30	**N**	**Mean (SD)**
Global health status/ QoL	197	76.6 (17.3)
Physical functioning	199	83.7 (17.0)
Role functioning	198	78.8 (26.2)
Emotional functioning	197	83.4 (22.1)
Cognitive functioning	197	81.7 (21.3)
Sociale functioning	197	84.9 (21.2)
Fatigue	198	31.4 (25.1)
Nausea and vomiting	198	7.9 (15.3)
Pain	198	18.1 (24.1)
Dyspnoea	198	19.5 (25.8)
Insomnia	197	23.5 (27.7)
Appetite loss	197	9.1 (18.9)
Constipation	193	8.1 (17.6)
Diarrhoea	196	11.4 (22.4)

Table 2. Top 15 of best visited pages of CMyLife, ranked from highest to lowest mean visits per month.

Title of page (/Subpage)	Mean visits/month	
	2017	2018
Homepage	1458.0	906.8
What is CML?	134.7	186.8
Medication and side effects	137.3	171.0
Newsblog	74.8	193.2
CML Treatment	62.8	92.3
What is CML/ CML video	32.5	30.3
Living with CML/Fatigue	78.8	71.3
Forum	102.3	110.8
Diagnosis of CML	50.3	83.1
What is CML/ Symptoms	79.7	81.0
CML research	91.8	73.3
CML guideline	80.4	83.8
Living with CML/ Sports & Movement	36.8	40.5
Living with CML/ Work & Income	34.2	29.3
Living with CML/ Mortgage	27.2	27.8

Conclusions

Information supply in current Dutch CML-care is suboptimal, especially on disease and treatment-related topics to everyday life. Provision of this information is actively used by patients. Next step will be to test whether this improves understanding and enables empowerment of CML patients.

ePl60

AIMING FOR QUALITY DIGITAL HEALTH IN CANCER. INSIGHTS FROM LITERATURE AND STAKEHOLDERS INFORMING THE AUSTRALIAN DIGITAL HEALTH IN CANCER ROADMAP.

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Introduction

Digital health approaches, including electronic medical records, decision support, wearables and electronic education platforms promise to improve access and personalisation in cancer care. Whilst enthusiastically adopted, some have limited efficacy and safety data. To inform the development of the Australian Digital Health in Cancer Roadmap, we have conducted a meta-review of the literature and interviews with stakeholders about barriers, enablers, needs and opportunities for quality digital health in cancer.

Methods

A systematic literature meta-review (Jan 2013-June 2018), together with stakeholder consultations (representing consumers, health care providers, researchers, policy representatives, and technology developers) were conducted. Thematic analysis by two independent researchers was then undertaken. This abstract reports on themes identified in these data addressing quality (effectiveness, appropriateness, acceptability, accessibility, efficiency) and safety of digital health approaches.

Results

Ninety-three published reviews and focus groups/interviews with 51 stakeholders were analysed. The main themes relating to quality were i) limited regulatory standards for digital technology, ii) limited credible advice regarding quality, and iii) limited safety data monitoring. Stakeholders agreed with/touched on all themes identified in the meta-review, with additional emphasis on the need for a coordinated approach and focus on consumer needs, amid concerns that adoption of new technology outpaces evidentiary and regulatory efforts. Despite their use in cancer care and support, emerging digital technologies such as social media were underrepresented in the literature.

Conclusions

To ensure quality and safety, a strategy is needed for regulation of digital health in cancer that defines a framework for standards, measures, and data collection.

ePl61

ENHANCING OUTREACH ACTIVITIES USING DIGITAL PLATFORM IN A RESOURCE LIMITED SETTING: THE AMPATH (ACADEMIC MODEL PROVIDING ACCESS TO HEALTHCARE) ONCOLOGY INSTITUTE EXPERIENCE

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Introduction

Oncology Outreach, a department that focuses on helping the public clearly understands cancer's impact on our daily lives is a key component of any cancer center that earns the coveted "comprehensive" designation from the National Cancer Institute. AMPATH Oncology Institute (AOI) is engaged in an extensive, ongoing effort to provide training, education and care. This provides them with information and resources they need to make sound decisions about cancer prevention, screening and treatment.

Methods

A Point of Care system (POC) was designed and customized for outreach activity. Breast and cervical data collection forms are integrated in the system. Key components of breast and cervical designed to fit the outreach flow. Demographics are collected at registration point. The system is real time for data analytics. The system alerts for follow-up after biopsy

Results

8,088 clients screened through 2018 using the digital POC. Screening was done in 27 in Western Kenya Region. 26.6% screened for breast alone, 10.3% screened for cervix alone and 63.0% that were screened for both breast and cervix. 24 % of Males were screened for breast cancer. 181 had breast abnormalities and 129 cervical abnormalities.

Conclusions

Most clients were screened for breast and cervical with males screening for breast. Key benefits of POC system being real time data analytics, follow-up plan and centralization of client's information. There is need to optimize client's management through collaboration and networking involving the county governments and other stakeholders

ePl62

ONLINE SELF-MANAGEMENT EDUCATION PROGRAM TO CAPITALIZE ON THE ACUTE CANCER TREATMENT PHASE AS A "TEACHABLE MOMENT": CO-DESIGN AND USABILITY TESTING OF THE 'I-CAN MANAGE' PROGRAM

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Introduction

During the acute phase of treatment, cancer patients face complex treatment toxicities resulting in high rates of emergency department use and long term morbidity. Ultimately, it is patients (and families) that shoulder responsibility for applying self-management behaviors to reduce the acute effects of cancer treatment on functioning in daily life. However, little attention has been paid to the acute phase of cancer treatment as a "teachable moment" and the quality of self-management support in ambulatory care is poor. The purpose of this paper is to describe the co-design process and features of the online 'I-Can Manage: Cancer Self-Management Program'.

Methods
We conducted qualitative descriptive interviews and journey mapping with breast, colorectal, and lymphoma cancer patients; and clinician focus groups to inform the design of the 'I-Can Manage' program. This was followed by usability testing using "think-aloud" techniques with audiotaping and observation in our design lab.
Results
Themes and sub-themes for desired content and features included for example: Normalizing the Experience and Building Our Confidence with tailoring our cancer. Interviews identified the need for online programs that "normalized" the experience of cancer and provided knowledge and information to manage the uncertainty of cancer.
Conclusions
Patients struggle to manage the complex tasks of managing cancer treatment side-effects. Passive dissemination of information is ineffective for activating cancer patients in applying the problem-specific self-management behaviours necessary to effectively reduce acute treatment toxicities.

eP163
TELETRIAGE AT A HIGH-VOLUME SPECIALTY CANCER CENTER URGENT CARE: ALIGNING PATIENT VOLUME AND NEED WITH AVAILABLE RESOURCE

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Introduction
The Memorial Sloan Kettering (MSK) Urgent Care Center (UCC) functions as the emergency room for MSK patients. With 23,000+ presentations annually, increasing volume and acuity mean more days over capacity. Patients experience increased wait times to see a provider, complete evaluation, and transfer to inpatient bed. The goal of UCC TeleTriage is to streamline patient flow through UCC and improve patient experience by aligning patient need and volume with resources.
Methods
UCC TeleTriage began July 2018 with the Gastrointestinal Medical Oncology service. The Service RN refers patients to TeleTriage weekdays, from 9a.m.- 4:30p.m. The TeleTriage provider calls patient within 30 minutes, takes history, and determines initial plan. Depending on acuity, evaluation starts prior to registration in UCC, using zip code and GPS to identify appropriate testing site. Patients who are too ill are directed straight to UCC.
Results
TeleTriage patients have (virtual) contact with a provider within 30 minutes and are discharged from UCC 42 minutes more rapidly than non-TeleTriage patients, who waited 110 minutes to see a provider. TeleTriage patients who received imaging prior to UCC, received a final disposition 93 minutes sooner than non-TeleTriage patients. A small number of low acuity patients were fully managed at home or in outpatient clinics.
Conclusions
Discharge of TeleTriage patients is measurably more rapid compared with non-TeleTriage patients. TeleTriage patients also had more rapid contact with a provider and earlier initiation of evaluation. Video-assisted TeleTriage is slowly being added. There is a new trend of managing less acute patients completely remotely.

eP164
TECHNOLOGY SUPPORTED SELF-GUIDED NUTRITION AND PHYSICAL ACTIVITY INTERVENTIONS IN ADULTS WITH CANCER: A SYSTEMATIC REVIEW

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Introduction
Nutrition and physical activity interventions form an important component of cancer care. This systematic review describes and appraises the literature regarding the efficacy of technology supported self-guided nutrition and physical activity interventions for people with cancer.
Methods
A systematic search of Medline, Scopus, CINAHL, EMBASE, Cochrane library and SPORTDiscus was conducted through to July 2018 for randomised or non-randomised controlled trials investigating technology supported self-guided nutrition and physical activity interventions. Risk of bias was assessed using the Cochrane Risk of Bias tool. Outcomes of interest were measures of behavioural, health-related, clinical, health service or financial outcomes.
Results
Seventeen randomised controlled trials representing 2,719 participants were included. The majority of studies used a web-based intervention (n=10). Six studies assessed dietary behaviour with two reporting a significant benefit on diet quality or fruit and vegetable intake. Fifteen studies measured physical activity behaviour with eight finding significant improvements in muscle strength and moderate to vigorous physical activity levels. Four of nine studies assessing health-related quality of life (HRQoL) reported a significant improvement in global HRQoL or a HRQoL domain. A significant improvement in fatigue was found in four of six studies. Overall, the risk of bias was moderate. Interpretation of findings is influenced by inadequate reporting of both the intervention description and compliance.
Conclusions
This review identified a benefit of technology supported self-guided interventions on physical activity behaviour and fatigue, and some benefit on dietary behaviour and HRQoL in people with cancer. There is lack of evidence investigating the long-term benefit and cost effectiveness.

eP165
IMPROVING ACCESS TO SURVIVORSHIP CARE THROUGH TELEHEALTH: A PILOT PROJECT

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Introduction
Our academic cancer center is an accredited member of the American College of Surgeon's Commission on Cancer (CoC), which requires eligible cancer

survivors to receive a Treatment Summary and Survivorship Care Plan (TS/SCP). Annual goals were met for 2015 (10%), 2016 (25%), 2017 & 2018 (50%). Multiple stakeholders developed a process improvement plan to increase delivery of TS/SCP to 100% of eligible survivors.

Methods

Video visits were conducted through the electronic medical record's (EMR) patient portal. TS/SCPs were delivered by specialty survivorship nurse practitioners (NP) who underwent virtual health video visit training. Survivors were selected for a telehealth visit upon review of analytic cases for TS/SCP eligibility in the top 2 disease lines, breast & genitourinary (GU). Survivors were ineligible if they did not have an EMR patient portal account. The remaining patients were contacted by a survivorship NP to schedule a telehealth visit.

Results

Between December 2018 and January 2019, 229 survivors eligible for a TS/SCP were screened for a telehealth visit (breast n=24; GU n=205). Twenty-four survivors were previously provided a TS/SCP. Fifty-four percent had an active patient portal and were contacted for a telehealth visit. Of the 19 survivors who responded, 10 (53%) completed a telehealth TS/SCP visit. Patient experience surveys are in process.

Conclusions

Academic cancer centers with high volumes of TS/SCP eligible survivors contend with barriers in meeting the CoC TS/SCP standard. Initial evaluation of the pilot program suggests this may be a feasible pathway to increase delivery of TS/SCP by improving access to survivorship care.

eP166
PREDICTORS OF ADHERENCE TO REMOTE WEB-BASED SYMPTOM MONITORING INTERVENTION

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Introduction

Adherence to web-based symptom reporting interventions is known to be low. Yet, few studies have determined factors associated with patient adherence. The purpose of this study is to determine the clinical and demographic factors associated with adherence to web-based remote symptom reporting.

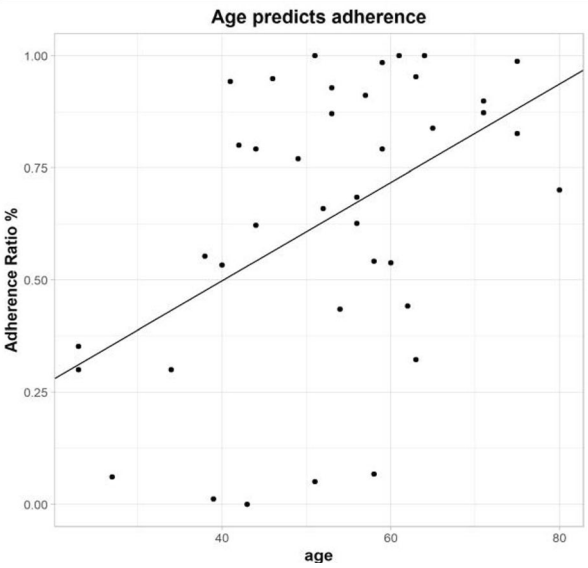
Methods

We assessed adherence to daily symptom reporting on the Advanced Symptom Monitoring and Management System (ASyMS). Patients were given a mobile phone with an android app interface pre-installed and were instructed to report symptoms at least once daily. Adherence is calculated as the proportion of days a patient completed at least one report while enrolled in the study. We conducted linear regression to determine factors strongly associated with adherence.

Results

There were 2838 symptom reports collected from 39 patients (Female=27). The mean age of participants was 52.8 years (SD ± 13.8). The median rate of adherence was 70% (interquartile range, 44%-91%). Patients were more likely to be adherent to ASyMS-Can Intervention if they were older in age ($\beta = 0.011$, $p<0.01$) and spent many hours using a PC weekly ($\beta = 0.35$, $p < 0.01$). These still held after controlling for sex, ethnicity and educational attainment. Patient sex, cancer type, employment status and having young children were not strong predictors of adherence.

Characteristics	Value
Age, median (range)	54 (23-80)
Sex, n	
Male	12
Female	27
Education, n	
Completed Public or Grade School	1
Completed High School	4
Completed Technical School	2
Some College	2
Completed College or University	23
Post-Graduate Degree	7
Ethnicity, n	
African	3
Asian or Pacific Islander	7
Caucasian	22
Hispanic	1
Other	6
Own a smartphone, n	
No	7
Yes	32
Hours using a computer each week, n	
Not at all	4
1-2 h	5
4-5 h	5
5-6 h	6
>7 h	19
Comfortable using a smartphone, n	
Not at all	2
A little comfortable	3
Comfortable	14
Very comfortable	20
Currently Employed or Working, n	
No	19
Yes	20
Cancer Type	
Breast Cancer	19
Lymphoma	19
Gastrointestinal Cancer	1



Conclusions
Paradoxically, older patients were more likely to adhere to web-based symptom reporting. This may be the effect of younger patients undergoing high dose chemotherapy treatments. Future studies should investigate the effect of increased adherence on improving patient outcomes.

eP167
THE DELIVERY OF ONCOLOGY HEALTH SERVICES TO RESOURCE LIMITED LOWER AND MIDDLE INCOME COUNTRIES (LMIC) THROUGH TELEMEDICINE

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Introduction
Use of telemedicine in the management of cancer patients has so far changed the perspective of disease progression.
This paper highlights efficacy of applying telemedicine effectively to new patient populations through caring for individuals with cancer.
Methods
Emphasis is on use of telecommunications technologies in the management of implementation and delivery of oncology healthcare services where distance is a critical factor. Currently 10 counties are working in partnership with AMPATH to ensure that internet connectivity is maintained, teleconference equipment is installed at consultation rooms with tools critical for diagnostic and therapeutic services.
Results
Improved diagnostics and disease management accounting for over 70% realized through the use of telemedicine.
Conclusions
Telemedicine has a great deal to offer in cancer care. The positive findings from this literature as well as work being done in collaboration with the remote sites in providing care to individuals with cancer suggests that this technology promises to improve access, enhance management of cancer and other conditions, as well as positively change the lives of those affected by the disease.

eP168
A COMPARISON OF ADHERENCE TO ACTIVITY TRACKERS AND PHYSICAL ACTIVITY LEVELS AMONG ADOLESCENT AND YOUNG ADULT CANCER PATIENTS AND HEALTHY CONTROLS: A PROSPECTIVE, LONGITUDINAL STUDY

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Introduction
Fitbit® activity trackers are popular among adolescent and young adults (AYA) (aged 15-39) for tracking physical fitness. However, it is unknown whether they are useful to evaluate physical activity levels in cancer patients undergoing treatment. Hence, this study was designed to compare the adherence to wearing Fitbit® and Fitbit®-derived physical activity measures between AYA cancer patients and healthy controls.
Methods
This is an ongoing prospective, longitudinal study. Eligible AYA participants were offered a wearable Fitbit® tracker to monitor step count, duration of exercise and energy expenditure. Weeks with at least 4 days of non-zero step count were included in the data analysis for rates of adherence and physical activity measures. All physical activity measures were compared between groups using independent t-tests.
Results
Seventeen cancer patients and 10 healthy controls were recruited, with mean (±SD) age of 33±5 years and 28±5 years, respectively. Majority (82.3%) of the patients were diagnosed with early-stage cancers and all participants were ambulatory at baseline. AYA patients and healthy controls adhered to wearing the tracker for 47.2% and 92.6% of the observational period, respectively. The mean (±SD) daily step count, mean (±SD) weekly total time spent in light-activity and mean (±SD) daily total energy expenditure were significantly higher in the controls compared to the patients (12831±5896 steps vs. 5638±3155 steps, $p<0.004$; 1404.8±753.6 mins vs. 747.6±430.6 mins, $p<0.008$; 958.4±391.1 kcal vs. 492.4±190.9 kcal, $p<0.004$, respectively).
Conclusions
Comparing to healthy controls, AYA cancer patients are less adhered to wearing Fitbit® activity trackers and less engaged to physical activity. (ClinicalTrials.gov Identifier: NCT03476070)

eP169
APPLYING INNOVATIVE EDUCATIONAL APPROACHES TO ENHANCE PATIENT AND CAREGIVER UNDERSTANDING OF TUMOR TREATING FIELDS, A FDA APPROVED TREATMENT FOR GLIOBLASTOMA

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Introduction
Glioblastoma (GBM) is the most common aggressive malignant brain tumor with median survival of 15 months. GBM patients face the devastation of their diagnosis whilst seeking accurate information regarding treatment options. Evolving technology-enhanced methods of learning, have created an educational paradigm shift, challenging traditional ways cancer patients are educated.
Methods
To supplement healthcare provider (HCP) education and ease the emotional burden of patients and caregivers seeking appropriate information regarding tumor treating fields (Optune®), a FDA approved treatment for GBM, the device manufacturer: Novocure sought to bring innovative platforms to patients and caregivers.
Results
Emerging technology methods were employed focusing on patient and caregiver frequently asked questions. The issues addressed included: treatment overview, mechanism of action, treatment initiation and management. Educational platforms included connecting potential patients-caregivers with current Optune patients-caregivers via live and web-based Open House events and direct patient-caregiver discussions with current Optune patients-caregivers via the phone-based Buddy Program. A dedicated Optune Facebook page was launched. As well as a first ever industry led Facebook Live event was held, allowing patients-caregivers to discuss their unique issues during a national broadcast. Additionally, vignettes including videos and written stories, were shared via a dedicated patient-caregiver website and YouTube channel.
Conclusions
In the ever-growing social and digital era, it is incumbent upon HCPs to become aware of innovative ways in reaching and teaching cancer patients. Utilization of emerging technologies may improve supportive care for cancer patients, by easing emotional burdens and improving communication channels.

eP170
PERCEIVED BARRIERS TO IMPLEMENTATION OF CURRENT CDC GUIDELINES ON LONG-TERM OPIOID THERAPY: RESULTS OF AN OPIOID POST-COURSE SURVEY

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Introduction
Opioids for long-term therapy of chronic pain among cancer survivors (CNMP) have seen guidelines that recommend reduced opioid doses, patient monitoring and caution for prescribing. These guidelines strongly endorse physician opioid education.
The aim of this study was to evaluate changes to practice that physicians plan to implement following a 3-day opioid education course, and any perceived barriers to implementation of current opioid guidelines for chronic pain among cancer survivors.
Methods
A 3-day opioid education course on prescribing long-term opioids for CNMP was attended by 220 health professionals. The topics included opioid pharmacology; opioid prescribing techniques; risks and side effects of opioid therapy; and current recommendations of recent opioid guidelines. A post-course survey was given to attendees to evaluate any perceived increase in competence, specific plans which would change clinical practice, and any perceived barriers to future changes in practice.
Results
147 attendees completed the course evaluation. 88% believed the opioid course increased their clinical competence and 89% believed they were better able to use best practices for long-term opioid therapy. 81% planned to change (Fig 2) their current practice. Most (92%) attendees perceived significant barriers to implementation of current opioid guidelines, including patient compliance (33%), lack of time (26%), and lack of resources (27%).
Conclusions
1) Most (81%) health professionals, following an opioid education course, planned to change their clinical management of opioid therapy. ● 2) Most (92%) attendees perceived significant barriers to implementation of current opioid guidelines on long-term opioid therapy. 3) Common barriers were patient noncomplicance, reimbursement issues, and lack of resources.

eP171
KNOWLEDGE, ATTITUDE AND PRACTICES OF PAKISTANI WOMEN FOR EARLY BREAST CANCER DETECTION

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Introduction
Breast cancer possesses serious health risk for women in Pakistan. It is estimated that one in nine Pakistani women will develop breast cancer at some stage in their lives. Early detection can help save lives.
To explore knowledge, attitude and practices regarding breast cancer detection in Pakistani women. Unfortunately no statistical data is available in this regard. Very few researches have been carried out. In Pakistan we do not have a registry at national
Methods
Descriptive exploratory study was carried out. Two hundred Pakistani women, age 30 and above, not suffering from cancer were interviewed from lady Wallington hospital, Sir Ganga ram hospital and services hospital Lahore. The interview designed contained questions regarding knowledge, attitudes and practices about symptoms of breast cancer, breast self-examination (BSE) and clinical breast examination (CBE). Data was obtained by face to face interview in local language, translated into English afterwards.
Results
20% of participants had knowledge about symptoms of breast cancer.16% of participants did BSE only once.10% of participants practiced BSE monthly.8% had undergone at least once CBE during their lives. The majority (70%) didn't know much about breast cancer. Age and education showed no statistically significant relationship with breast health practices.
Conclusions
Pakistani women have minimal knowledge about breast cancer. They don't engage themselves in breast cancer detection practices. They need to be better informed about breast cancer and benefits of BSE and early detection.

eP172
AVAILABLE CHEMOTHERAPY TREATMENT LOCATIONS AND SUBSEQUENT TAKE-UP: A MIXED METHODS STUDY

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Introduction
To explore if and how outreach chemotherapy is being offered by clinicians to Gastro-intestinal (GI) cancer patients; what information patients received and what choice they made in relation to where their chemotherapy was administered.
Methods
Ethical approval was established in 2017. Data collection occurred over five months between May - September 2017 in a regional hospital.
Data included (n = 10) GI cancer patients followed at three time points over chemotherapy treatment cycles using semi-structured telephone interviews (n = 28). HCPs (n = 34) completed six closed questions and (n = 20) one free text response survey. Descriptive statistics and thematic analysis were used to establish themes and make comparisons.
Results
100% of staff know the hospital has an outreach service for providing chemotherapy. At the time of the survey, (n = 19, 55.9%) members of staff had referred 0-5 patients in the previous month. Outreach was offered to (n = 5, 50%) participants in total across the three-telephone interview timepoints. Of those, (n = 3, 30%) patients embarked on having their chemotherapy administered in alternative locations. Results demonstrate that HCPs are confused as to whose responsibility it currently is and who should be referring patients. Not all patients received information about available treatment locations, and those that were aware had different views on the organisational process.
Conclusions
Current information given to patients is inadequate. Suggestions to improve the service include re-writing the current policy, developing a clear referral pathway, establishing a nurse to oversee the outreach service, education and streamlining responsibilities.

eP173
COMPLIANCE WITH REFERRALS AT THE PAEDIATRIC ONCOLOGY UNIT IN A TEACHING HOSPITAL, GHANA

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Introduction
Caretakers may be faced with a number of barriers before complying with a referral advice. Such barriers can be financial, geographical and cultural. The most complex aspect of referral care is often the caretaker's acceptance of and compliance with a referral recommendation. The objective of this study was to determine caretaker barriers to compliance with referral in order to improve diagnosis, treatment outcomes and guidelines for the Integrated Management of Childhood Illness (IMCI).
Methods
The study was cross sectional conducted at the Paediatric Oncology Unit (POU) at the Komfo Anokye Teaching Hospital (KATH), Ghana from

July to September 2018. The POU receives about 28 referrals per month. Seven caretakers were recruited weekly for a period of 12 weeks. A sample size of 84 was used for the study. Data on time of arrival at the referral facility and the barriers to compliance with referral were obtained after informed consent. Ethical approval was sought before the commencement of the study.

Results

The barriers to compliance with referral from caretakers perspective are lack of financial resources 38 (45.2%), time wasting at the referral facility 30 (35.7%), seeking alternative treatment 23 (27.4%), experience and impression of the referral facility 18 (21.4%) and lack of knowledge on disease severity 16 (19.0%).

Conclusions

Lack of financial resources, time wasting, seeking alternative treatment, experience and impression, and lack of knowledge on disease severity are the barriers to compliance with referral. A further study on these barriers to compliance with referral will inform outcome improvement interventions.

eP174
ENTREPRENEURSHIP IN MEDICAL ACADEMIC: WHAT IS ITS PLACE IN ALGERIA?

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Introduction

In Algeria, one of the causes of innovation hindering the medical technology sector is the lack of knowledge and skills in medical entrepreneurship.

Given this observation, the problematic involves several questions:

-What is the importance of scientific research, innovation and medicalentrepreneurship in developed countries, and in Algeria.

- Are there start-ups in Algeria?

-Would we start the process of research, innovation and medical entrepreneurship in Algeria, if so, how?

Methods

This thesis deals with the identification of the different critical steps of the invention (scientific research) to commercialization, the role of academic medical centers in this process and its impact in Algeria.

Results

The Lean Start-up approach and the creation of Clinical-Innovative Pathways in Academic Medical Centers (CMAs) are the solution to this problem, challenging physicians to go beyond their comforts to acquire knowledge about entrepreneurship in the medical sector, which aims to optimize care, reduce health costs and improve the patient's quality of life.

Conclusions

The process of innovation between invention and marketing (application) is essential to the advancement of academic medical centers, and this process must be properly integrated into the educational curriculum of these centers whether state or private.

eP175
SURVEY OF THALASSEMIA MAJOR PATIENTS RECEIVING REGULAR BLOOD TRANSFUSION AT DAY CARE ONCOLOGY, OF A TERTIARY CARE HOSPITAL IN KARACHI, PAKISTAN

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Introduction

The objective of this study is to identify the reasons behind delays in scheduled blood transfusion, to promote education and awareness of timely blood transfusions and finds reasons behind delays and how to overcome them.

Methods

Data was collected in two parts from the patient charts, included demographics of patients, Laboratory and next follow up plan. Duration of this study was 3 months from April to June 2017 and 3 months after intervention from June to August 2018. Inclusion criteria includes thalassemia major, of any age or gender visiting day care oncology for receiving blood transfusion whereas, exclusion criteria includes patients of any age or gender with thalassemia intermedia / minor or haemoglobinopathies.

Results

In part one out of 107 patients 66 (61.68%) received on time blood transfusions, 27 (25.23%) patients received delayed blood transfusions and 14 (13.08%) patients received early blood transfusions. In part two data analysis done after intervention, out of 107 patients 87 (81.30%) patients received on time transfusion,10 (9.34%) patients received early blood transfusion and 10 (9.34%) patients received late blood transfusion. During data analysis it was identified that out of 66 (61.68%) patients coming on time for blood transfusion 38 (57.57 %) patients have their Hb level less then 9g/dL in 2017 and 41 (47.12%) patients out of 87 (81.30%) in 2018 have their Hb level less then 9g/dL.

Conclusions

After intervention with educational sessions percentage of patients receiving timely blood transfusion was improved. Patients receiving on time blood transfusion had hemoglobin level less than 9g/dL which needs further workup.

eP176
PAIN KNOWLEDGE AND ATTITUDE AMONG HEALTH CARE PROVIDERS WORKING AT SELECTED HOSPITALS OF ADDIS ABABA ETHIOPIA

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Introduction

Pain is one of the most frequent symptoms in cancer patients. Eighty to 90% of patients with cancer experience mild to severe pain in Ethiopia. For proper management of pain, health care providers (HCP) need particular knowledge and attitudes to pain and pain management. The purpose of this study was to describe knowledge and attitudes to, pain and pain management among HCP working in cancer centers in Addis Ababa, Ethiopia, and to determine if various demographic characteristics were related to level of knowledge and attitude.

Methods

Nurses (n = 121) and medical doctors (n = 79) were recruited from two cancer hospitals of Addis Ababa. HCP completed “Nurses’ Knowledge and Attitudes Survey Regarding Pain” (KASRP). Data were analyzed using descriptive statistics, and a binary logistic regression was used to evaluate the association between demographic variables and knowledge and attitudes.

Results

Nearly 60% were female and the majority were between 23-29 years old. Only 40% of the HCP had more than half of the questions in the survey correctly answered, and as few as 25% had at least 80% correct answers. Being male, higher income, having a formal pain management course, and profession as a doctor were associated with higher KASRP total score.

Conclusions
The low KASPR total score among HCP indicate that there is a potential for improvement of knowledge and attitudes to pain. HCP should be encouraged to attend a pain management course supported by the health authorities in Ethiopia.

eP177
FAMILY PSYCHO SOCIAL COUNSELLING FOR VACCINATION IN POST STEM-CELL TRANSPLANT

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Introduction
Stem cell transplantation (SCT) is known to be physically and emotionally stressful procedure because behavioral related factors such as post-transplant isolation period. SCT recipients have therefore been found to at increased risk of experiencing variety of psychosocial difficulties factors impact negatively on quality of life. Studies have shown that levels of antibodies decreases during few years after SCT. its association with developing life threatening infections risk and behavioral isolation to a increase psycho social difficulties, Therefore acceptance of vaccination protocol is difficult to implement in sychosocial problem presence specially depression Present study undertook to know beneficial effect of family psycho social counseling regarding attitude towards positive immunization protocol
Methods
Total 3 patents between age of 2- 8 years age who had SCTfor acute myeloid, chronic myeloid and lymphoma were subject to family psychosocial counseling session were followed with reference to attitude of positive life and vaccination protocol acceptance
Results
All 3 patients has shown remarkable improvement in personality towards their ability to cope with depression and anxiety level The over anxious fear about post transplant infections was well taken with vaccinations followup advised The family were well versed happy about the family psychosocosial counseling session outcome
Conclusions
Our small study showed that family psychosocial counseling has beneficial effect on attitude for vaccination and psychological morbidity post transplant patients with immune modulation More large scale community studies may done for further evaluation

eP178
APPLICATION OF TEAM RESOURCE MANAGEMENT IN ENHANCING THE CHEMOTHERAPY ADMINISTRATION SAFETY IN A MEDICAL CENTER OF TAIWAN

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Introduction
The chemotherapy administration incidence rates increased from 0.008% to 0.04% during2014 to 2015. This project explored the effects of application of team resource management intervention enhance the patient safety of chemotherapy administration in a medical center of Taiwan.
Methods
Applied the root cause analysis on the collected data from 2015 to 2018. The total numbers of chemotherapy administration were 49,894, with a total of 11 incident events. Extravasation accounted for 90.9%, with swelling (38.4%), pain (30.8%), red (23.1%) symptoms, 5FU accounted for the most; administration error accounted for9.1%. The problems identified were incorrect of port-A catheter fixation and angle needle size selection, insufficient awareness of chemotherapy extravasation, complex chemotherapy orders without standard prescription, calculation error in the flow rate, absence of double checking., lack of pharmacy information and further training. We then develop a series improvement strategies included by medical resource integration, develop of port-A catheter care DVD, chemotherapy extravasation prevention handbook, integrated chemotherapy order package by information system, implementation of barcode administration system, and educational training programs for safety administration and standardizing.
Results
The chemotherapy administration events incidence rate reduced from 0.04% to 0% ; chemotherapy extravasation rate reduced from 0.04% to 0%; the chemotherapy administration time was also shortened by120 seconds each. Satisfaction of the medication barcode administration system also rose from75.0 points to 85.6 points from January 2015 to September 2018.
Conclusions
Team resource management was central to this project. It not only enhanced professional competence, but also improved the chemotherapy administration safety.

eP179
THE USE OF IMMERSIVE VIRTUAL REALITY – WOULD IT BE USEFUL FOR THE EDUCATION IN SUPPORTIVE CARE OF CANCER MANAGEMENT?

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Introduction
Pharmacy students in Hong Kong face the common challenge of having limited opportunities to experience professional clinical practice.
Methods
We have a pioneering project in Hong Kong using immersive virtual reality (IVR) techniques to enable students with no clinical experience to work through interactive cases. We have developed two IVR teaching modules using real patient cases. We have brought the clinical ward setting into the classroom. Students experienced first-hand clinical exposure in class with guided, step-by-step teaching material to translate clinical knowledge into practice. Beside IVR, we also had case studies in paper format. We invited the students to conduct user feedback surveys to compare their learning experience on both paper and IVR.
Results
We found that the students preferred to have paper format for case discussion or even watching video than using IVR. However, most of them gave positive feedbacks on the use of IVR and thought it was interesting to have a simulated interaction with a patient. In short, technical problem was the major issue we encountered – as there was only one full set of IVR equipment with remote control in the classroom. Most of the students had to use their smartphone and provided headset to experience the IVR cases.
Conclusions
IVR in pharmacy education is still new in Hong Kong. It has potential to be developed into other therapeutic areas including supportive care in cancer management. However, proper guidance, hardware and software improvement, and clear instruction are required for in class deployment of IVR.

eP180
LYMPHEDEMA AWARENESS OF STUDENTS FROM TWO DIFFERENT HEALTH SCIENCES DEPARTMENTS: FINAL REPORT

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Introduction
Management of lymphedema is very important to increase quality of life of cancer survivors. Therefore the education about it should start in undergraduate health sciences programs. Pilot study of this research was presented at the 2015 International MASCC/ISOO Symposium. The aim of this study is to increase numbers of participants to make more realistic implications about understanding the knowledge status on lymphedema of the final year students to improve the education programs.
Methods
A 10-item questionnaire, which was used on pilot study, was applied to 83 physical therapy and rehabilitation (PTS) and 65 nursing students (NSS) from two different universities.
Results
39.76% of PTS and 27.69% of NSS wrote the correct definition of lymphedema. 31.33% of PTS indicated 3 or more causes;mastectomy (56,63%), radiotherapy (28,92%), chemotherapy (15,66%). 46.15% of NSS indicated only one cause;mastectomy. 32.53% of PTS and 55.38% of NSS saw any case. 60.24% of PTS, 35.38% of NSS indicated that lymphedema occurs on any body parts. 54.22% of PTS commonly indicated 3 or more treatment approaches;manual lymphatic drainage (81.93%), bandaging (72.29%), compression garments (53.01%). 47.69 % of NSS did not indicate any treatment approaches. 42.17% of PTS and 72.31% of NSS did not know about the role of nurses. 8.43% of PTS and 53.85% of NSS did not know about the role of physiotherapists.
Conclusions
This extended study shows that although the knowledge status about lymphedema of the PTS is better than NSS, it should find more places on curriculum. It is better to make internship opportunities on cancer clinics to increase cancer and survivorship awareness.

eP181
SANN-JHONG-KUEY-JIAN-TANG CAN DECREASE PROGRAMMED DEATH-LIGAND 1 EXPRESSION IN HUMAN BREAST CANCER BT-20 CELLS AND MCF-7 CELLS

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Introduction
Sann-Jhong-Kuey-Jian-Tang (SJKJT) is a traditional Chinese medicine prescription has been used as complementary medication for solid cancer in Taiwan. SJKJT can inhibit human breast cancer MCF-7 cells and BT-20 cells through inducing apoptosis. Programmed cell death-ligand 1 (PD-L1) is expressed on many cancer cells, which played a protective role against the cytotoxicity. PD-L1 interacts with programmed cell death-1 receptor (PD-1) to inhibit the T cells and block the antitumor immune response. PD-L1 expression is a favorable biomarker for the prognosis of breast cancer; therefore, immune checkpoint blockade agents may be offering the opportunity to be the future treatment for breast cancer.
Methods
BT-20 and MCF-7 cells were treated with SJKJT in vitro. The cytotoxicity of SJKJT was evaluated by MTT assay. The effects of SJKJT on the protein expressions of PD-1, PD-L1, Cytotoxic T-lymphocyte-associated antigen-4 (CTLA-4), B7-1 (CD80) and B7-2 (CD86) were measured by Western blotting.
Results
SJKJT can induce the proliferation inhibition with time and dose dependent. SJKJT treatment inhibits the protein expressions of PD-L1 in breast cancer BT-20 and MCF-7 cells significantly.
Conclusions
BT-20 and MCF-7 cells were treated with SJKJT can inhibit the activity of PD-L1 significantly. These results suggest that one of the molecular mechanisms for SJKJT to inhibit breast cancer BT-20 and MCF-7 cells maybe through inhibiting the protein expression of PD-L1. SJKJT may to be one of the immune checkpoint blockade agents for human breast cancer cells.

eP182
SANN-JHONG-KUEY-JIAN-TANG CAN DECREASE THE PROTEIN EXPRESSIONS OF MERK AND ERK BUT INCREASE MICROTUBULE-ASSOCIATED PROTEIN II LIGHT CHAIN 3 TO INHIBIT HUMAN BREAST CANCER MCF-7 CELLS

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Introduction
Sann-Jhong-Kuey-Jian-Tang (SJKJT) is a traditional Chinese medicine prescription. SJKJT consists of 17 species of herbs and has been used for much solid cancer in Taiwan. Breast cancer is the leading cause of cancer-related death for women in worldwide. SJKJT could inhibit the MCF-7 cells through decreasing the expression of Vascular endothelial growth factor receptor-1 (VEGFR-1), insulin-like growth factor-I receptor (IGF1R), then to block the PI3K/AKT/mTOR signaling pathway. The present study focused on the effects of SJKJT in the Her2/3 and Ras/Raf/MERK/ERK pathway in human breast cancer cells MCF-7.
Methods
The effects of SJKJT on the protein expressions of Her2/3, Ras, Raf, MERK, ERK, LC3-II and β-actin in the MCF-7 cells were examined by western blot analysis.
Results
The results showed that SJKJT can inhibit the protein expressions of Her2/3, MERK and ERK, but increase LC3-II in MCF-7 cells.
Conclusions
These findings indicated that SJKJT could inhibit the MCF-7 cells. One of the molecular mechanisms may be through decreasing the protein expressions of Her-2 and Her-3, then to block the MERK/ ERK signaling pathway; the other may be through increasing LC3-II to induce autophagy. The traditional Chinese medicine prescription SJKJT may become a possible therapy option for human breast cancer.

eP183
KNOWING, DOING AND DISCLOSING: A CRITICAL ETHNOGRAPHY OF COMMUNICATION PROCESSES INVOLVING THE SAFE MANAGEMENT OF ORAL CHEMOTHERAPEUTIC AGENTS BY PATIENTS WITH COLORECTAL CANCER

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Introduction
The use and prescription of oral chemotherapeutic medications is growing with several new oral drugs in development. While there are numerous benefits associated with the use of oral chemotherapy, there are several risks to which a patient must be comprehensibly informed. The aim of this study was to examine how patients received, understood and acted

upon healthcare professional education about their oral chemotherapeutic regimen throughout their treatment.

Methods

Over 60 hours of observational data were digitally recorded from interactions between 9 oncology doctors, 6 oncology nurses, 8 patients and 11 family members over a period of six months in outpatient departments within one hospital in Northern Ireland. Sixteen semi-structured interviews were conducted with patients during and after their treatment. Three focus-groups were carried out with health care professionals at the end of the study. Information leaflets given to patients were also examined. Data was thematically analysed.

Results

The three themes of knowing, doing and disclosing emerged with regards to communication processes about safe management of oral chemotherapy. These themes related to patient/family understanding about oral chemotherapy (knowing), oral chemotherapy medication-taking practice (doing) and patient/family management and reporting of chemotherapy risks and side-effects (disclosing).

Conclusions

There is a prominence of non-personalised education for people in receipt of oral chemotherapeutic treatment. This approach was not detrimental to patient safety in this study, however it did lead to patients having unmet needs regarding appropriate oral chemotherapy adherence, reporting of side-effects and long-term sequalae of treatment.

eP184
CANCER CONSCIOUSNESS OF HEALTH SCIENCES STUDENTS

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Introduction

The aim of this study was to investigate cancer consciousness of health sciences students and to understand the nature of cancer education.

Methods

A 20-item online questionnaire that was generated by researches was applied to 112 physical therapy and rehabilitation(PTS), 26 nutrition and dietetics(NDS) and 30 nursing(NS) students.

Results

Some information about participants is shown at Table 1. 46 PTS, 25 NDS and 9 NS took already a lesson about oncology. 26.8% of PTS, 34.6% of NDS, 17.9% of NS have medical knowledge about cancer. There was a significant relationship between taking a lesson and having medical knowledge about cancer (p=0.000) (Table 2). 5.1% of PTS, 46.2% of NDS and 67.9% of NS indicate that breast cancer is the most seen on women. 35.7 of PTS, 26.9 of NDS and 28.6% of NS indicate lung and prostate cancer are the most seen on men. There is no any difference on these parameters (p>0.05). All groups know about methods of coping with stress and can apply them (p=0.000). Most of all participants fear to get cancer. 35.7% of all participants told "I know the causes of cancer and take precautions to protect them" and 32.7% told “I want to be protected from risk factors, but the living conditions are not appropriate” (Table 3).

Conclusions

The cost of cancer prevention is less expensive than treatment. More conscious health professionals provide more conscious public about cancer prevention. Students who took lesson about oncology and successfully adapt their knowledge into their life are considered to be efficent health professionals in the future.

eP185
LEANERS ASSESSMENT OF A HEMATOLOGY/ONCOLOGY COURSE FOR NEW ADVANCED PRACTICE PROVIDERS

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Introduction

Educational interventions developed for Advanced practice providers (APP) are often not focused for this group of practitioners. Learner specific development of curriculum and addressing their needs are often challenging. The Florida Society of Clinical Oncology (FLASCO) since 2016 have a 1 day free course offered to new APP's who are beginning their clinical careers in hematology/oncology. Topics that are relevant to their initial practice integration are discussed during this course.

Methods

A survey was done to assess the attendees perception of the course from their perspective. This was offered to those who verbally agree to participate on this.

Results

23 attendees agreed to participate in the survey.10/23 who answered the question, that the course met a professional gap 10/10 (100%), 21/23 agree that the course increased their knowledge 90%, 85% felt that the course change their competence,85% felt that the course will change the way they take care of patients. Topics that were useful for most of them included pathology, oncologic emergencies, assessment of toxicities, basic principles of treatment, and radiation oncology. The topics that the attendees felt important for them included delivering bad news, supportive care management, billing and coding, specific cancer management, multidisciplinary care of the patient. Challenging topics to understand included pharmacology, disease specific treatment and complications, genomics, chemotherapy, surgical treatment and pathology.

Conclusions

An APP centered course was adequately implemented and was felt to meet their educational goals, applicable and practical for daily practice. The results of this survey will help develop future courses and help improve this course.

eP186
ARE YOUNG NURSES WELL EQUIPPED IN DEALING WITH PEADIATRIC PALLITIVE CARE?

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Introduction

Background: Young nurses avoids death and dying discussion in children during training. Neverthless, it is important for students to understand death and dying early in training, hence cope with difficult situation in clinical placements.

Methods

: 62 nursing students were selected to take role play of nurses, parent, friend, sick child and complete questions on chronic illness, breaking bad news, loss, bereavements and coping strategies knowledge.

Results

: Majority didn't know the definition of pediatric palliative care and important of breaking news. 68% had some information about PC and the 32% of the students knew the definition of PPC. 72% didn’t know the different between palliative care nursing and general nursing; 55% didn't like idea of working in PCU: 45% avoided loss questions. Most of the students 76% requested more accessibility to the information. 48% had relatives/friends who with chronic illness or died with, 92% interested in attending bereavements session: 32% declined to discuss own death and dying: 38%wished to attend advanced training, 62% preferred other courses, 62% were not kin in role playing as a sick child. 68% PPC is difficult to understand that general nursing, 88% need of supportive counselling center.

Conclusions
There is need to introduce pediatric palliative care early in training for young nurses benefits. Most of palliative care assignment need be role play for nurses to understand and have, confident in caring for children. Results indicates lot of work needed to be done by palliative providers.

eP187
EFFECT OF MISSED EDUCATIONAL SUPPORT DURING TREATMENT ON ACADEMIC PERFORMANCE ON CHILDREN

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Introduction
Children who are in school age do have prolonged periods of absences and younger children at times are delayed in enrollment into schools. Most parents do not prefer to lose school years, even if it is for treatment and tend to skip the missed classes and move on to the next class. In India, either in private or public schools, there is no provision for schools or the education department to provide mandated educational support while child is in hospital or recuperating from a chronic illness. Parents do not emphasize on academic learning during the treatment process as they are more concerned about their health at that time.
Methods
The **aim of the study** was to explore if academic functioning was affected due to frequent and prolonged absence to school. Key objectives were to explore any delays or deficits in their academic functioning and to observe any differences between younger and older children. Children and adolescents attending active and maintenance or follow-up in the Department of Pediatric Oncology was evaluated using standardized tools for assessment of cognition and reading, writing and math skills were assessed based on the grade level of the children.
Results
Results indicated those children who were in 6th grade and above demonstrated minimal or no difficulties with academic performance as compared to children who were in classes 5 and below.
Conclusions
It can be concluded that skipping classes could result in missing basics of academic foundation during the early years or during primary school could result in learning difficulties.

eP188
FUNGATING WOUNDS: NAVIGATING THE NURSE'S CARE OF THE CANCER PATIENT WITH A FUNGATING WOUND

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Introduction
Fungating wounds are defined as an abnormal growth of cells at a primary tumor site, frequently protruding through the skin as a mass of tumor cells. These wounds can be challenging for clinical staff and patients to manage due to pain, odor, bleeding and excessive drainage. As the incidence of cancer in the United States increases, nurses are more likely to encounter patients with these complex wounds. Currently, nursing literature lacks details on the care of these patients and reveals an important knowledge deficit within nursing practice.
Methods
To address these needs, a nurse in a healthcare agency within the United States developed an evidenced-based clinical module to educate nurses in the management of fungating wounds. The module details a pathway of care focusing on didactic training of nurses in fungating wound management and provides resources that support the need for pain, psychiatry, chaplaincy, and cosmetology referrals.
Results
Through a pilot study, new nurses utilized this module during orientation and all other nurses completed a competency on the module in a two-month time span. Once the competency was completed, a survey was conducted to assess nurses' knowledge of fungating wounds. The survey revealed that after completing the module, nurses were more knowledgeable about fungating wounds and were more prepared to manage them.
Conclusions
Nurses who are trained in wound care management and supportive resources for patients with fungating wounds are better prepared to provide holistic care and advocate for their needs. This serves to improve the patients' quality of life and outcomes.

eP189
ADAPTATION TO THE NEEDS OF THE POST-SURGICAL PATIENT

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Introduction
The management of surgical wounds and ostomies are frequently the responsibility of floor nurses. The literature reveals a high correlation between a patient's attitude towards self-care and surgical site complications. Preventing infection and other complications will require increased patient knowledge about care and utilization of products that will enhance healing. During admission, primary care nurses who are trained to provide wound and ostomy care, will need to determine the patient's attitude towards learning to facilitate the development an individualized plan of care to manage wounds and ostomies.
Methods
A literature review was conducted and several journal articles revealed that the patient's knowledge of self-care, as well as a willingness to learn resulted in less wound and ostomy complications.
Results
Patients whose nurses provided hands-on education with return-demonstration skills; video teaching access; shared product contact information; and stressed the importance of learning were more informed and prepared to self care and less likely to have infected wounds or complications with their ostomies.
Conclusions
Patients differ in their approach to learning as well as their desire to self-care. It is critical for nurses to understand the barriers to care in order improve patient outcomes in lowering post-surgical complications.

eP190
FELLOWSHIP PROGRAM HELPING DEVELOP NEXT GENERATION OF ONCOLOGY NURSES

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Introduction
Unique educational program is successfully attracting, inspiring, and helping develop next generation of Oncology Nurses. Established in 2014 in memory of my beloved wife Susan, who died of ovarian cancer, **Susan Flynn Oncology Nursing Fellowship Program** provides aspiring nurses with comprehensive clinical immersion in Oncology Nursing and expert training in compassionate care. Program's objectives are to:
- · Stimulate career interest and foster professional development of potential Oncology Nurses;

- Raise visibility of Oncology Nursing as career choice/provide "experiential learning" opportunity to expose undergraduate nursing students to this critically important field
- Promote effective partnerships between leading cancer hospitals and top undergraduate nursing schools to address growing need for Oncology Nurses

Methods

Key methods include:

- · Comprehensive Program Scope
- · Uniform Program Content (clinically and academically)
- · Dedicated Program Partners [see attached list]
- · Rigorous Candidate Selection Process
- · Committed founder/sponsor

Results

Fellows (who must be "rising seniors") learn substantial amount about Oncology Nursing, get experience caring for Oncology patients, and bolster their confidence in this specialized field. Since 2014, 137 aspiring nurses have completed this Program; of 105 participants already in workforce, over 70 have started their Oncology Nursing careers, in many cases at their host hospital. Participating hospitals use Program as valuable recruiting and development tool for Oncology Nursing talent and enthusiastically support it.

Conclusions

This privately funded Fellowship Program is helping address growing need for more and better prepared Oncology Nurses. It serves as "talent pipeline" for Oncology Nursing staffing needs at several leading hospitals, and has significant national expansion potential.

eP191

SEARCHING FOR AN IDEAL CERVICAL CANCER SCREENING MODEL TO REDUCE FALSE NEGATIVE ERRORS IN A COUNTRY WITH HIGH PREVALENCE OF CERVICAL CANCER

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Introduction

To identify an ideal cervical cancer screening model to reduce false negative errors in a country with high prevalence of cervical cancer.

Methods

We conducted a cross-sectional study including 33,531 women who underwent routine cervical cancer screening in Korea. Colposcopic examinations were performed after abnormal results on their screening tests. Diagnostic capacities including sensitivity, specificity, and false negative rate of each screening scenario were analyzed at the CIN1 or worse (CIN1+) threshold with colposcopic biopsy results considered the gold standard.

Results

A total of 4117 women had valid results for Papanicolaou (Pap) cytology, human papilloma virus (HPV) tests, cervicography, and colposcopically directed biopsy were included in this study. The disease prevalence of CIN1+ was 38.1%. Pap-alone resulted in the highest false negative rate of 46.9%, followed by HPV-alone at 25.1%, cervicography-alone at 18.7%, Pap/HPV-combined at 15.0%, Pap/cervicography-combined at 6.9%, and Pap/HPV/cervicography-combined at 2.9% in a sample of 1570 women with CIN1+ lesions.

Conclusions

Cervicography demonstrated excellent performance for the detection of CIN or cervical cancer and markedly reduced false negative errors when used in combination with Pap cytology and HPV tests.

eP192

EDUCATION AND CAREER DEVELOPMENT IN ONCOLOGY AND SUPPORTIVE CARE: ACTIVITIES AND ACHIEVEMENTS OF THE HELLENIC GROUP OF YOUNG ONCOLOGISTS (HEGYO)

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Introduction

Hellenic Group of Young Oncologists (HeGYO) is a group of young trainees and specialist Medical Oncologists and acts as an integral part of the Hellenic Society of Medical Oncology (HeSMO). The main objectives of the group are to promote education and provide opportunities for young scientists to participate in research and other scientific activities.

Methods

The actions of HeGYO during the last 4 years were reviewed.

Results

In 2016 HeGYO had 235 members (135 trainees, 150 men). HeGYO organized educational seminars and workshops on different topics such as "Bioinformatics and Oncology", "Acute Oncology" and participated in Hellenic Academy of Oncology. HeGYO participated in all annual HeSMO conferences with interesting roundtables ("Education and Career Development in Oncology", "HeSMO Guidelines", "Survivorship in Oncology") and organized 2 years the well attended seminar on "Making the right career choices as a young oncologist". It completed a European survey on "Education and Career Development in Oncology". Results of survey were announced at HeSMO, ESMO and ASCO conferences. Three similar surveys are ongoing on "Toxicity Management", "Acute Oncology", "Thrombosis and Cancer". HeGYO members took over Greek translation of ESMO Patient Guides, publication of informative manuals for patients and of a manual on "New Biological Therapies in Oncology". A HeGYO member is sitting in ESMO Young Oncologist Committee (ESMO YOC) providing the link between committees.

Conclusions

HeGYO is an integral and dynamic part of HeSMO and with its ongoing support it had the opportunity to organize interesting scientific events and other actions for the benefit of patients and young colleagues.

eP193

MASTER COURSE IN PSYCHOSOSIAL SUPPORT FOR ADOLESCENT AND YOUNG ADULT PATIENTS WITH CANCER – A COURSE EVALUATION

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Introduction

A collaboration between Oslo University Hospital and Oslo Metropolitan University developed a 10 ECT new master course: "Psychosocial Support for adolescents and young adults with cancer" based on a clinical practice guideline. The course consists of two weeks lectures including theory and practical skills. Different learning activities (i.e., interaction, individual and group assignments) were used with a final individual exam. The aim of this study was to examine how the students evaluated the course according to the learning outcomes.

Methods

All students (N=16) answered an individual questionnaire which assessed the relevance, content and the presentation of each lecture. At the end of the course,

the students first answered questions related to the learning outcomes in groups, and thereafter orally all together. Data were analyzed using content analysis.

Results

The results from the individual questionnaire showed that the lectures were relevant and well performed. The combination of clinicians, faculty, former patients and family members made a very good contribution to the course. The students highlighted positively the extensive use of interactive activities and the training of practical skills. Students reported that the content of the course was relevant for the learning outcomes. However, there were too many lectures about how to conduct a network conference. In addition, the student wanted more focus on AYA's development, particularly their neuropsychology. Multicultural aspects should be more emphasized.

Conclusions

Overall, the students evaluated the course very well. The content of the course should be revised according to the students' evaluation.

eP194
ACCEPTABILITY AND USEFULNESS OF A SERIOUS GAME FOR OLDER ADULTS WITH CANCER TREATMENT-RELATED SIDE EFFECTS

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Introduction

Older adults experience a high number of cancer treatment-related side effects (mean 7.15) but engage in few self-management behaviors (mean 3.36). Evidence suggests that older adults do not believe provider recommended self-management strategies are effective at managing side effects. Not managing side effects can lead to unplanned hospital and emergency department admissions. Therefore, a novel, serious game using avatar-based simulation scenarios was created to engage and prepare older adults with cancer to manage chemotherapy induced nausea and vomiting better at home. The purpose of this abstract is to report acceptability and usefulness of the serious game

Methods

Eighty older adults participated in a randomized clinical trial. The game was played on an iPad either at their first (experimental group) chemotherapy appointment or fourth (control group). Participants completed a survey about the game to determine: ease of play, likability, clarity of choices, usefulness, realism of setting/scenario, and consistency of choices. Participants used a 5-point agreement Likert scale (1= strongly disagree, 5= strongly agree). Mean scores were computed.

Results

Fifty-three participants completed the survey. Overall, the game received a positive response. Overall participants believed the game was easy to follow (4.10), likable (3.87), had clear choices (4.08), was useful in helping them manage nausea and vomiting (4.02), realistic (3.92), and had choices consistent with nurse teaching (4.08). Qualitative comments included suggestions for improvement.

Conclusions

Researchers and clinicians should consider technology-based educational interventions as an acceptable and useful strategy in educating older adults about managing side effects.

eP195
MONITORING PALLIATIVE CARE EDUCATION SYSTEMS: NEED FOR INTERNATIONAL INFORMATION EXCHANGE

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Introduction

To inform and guide palliative care education decision- making, and to understand whether and why progress is being made, it is necessary to analyse factors at the level of national palliative care education systems, such as major legislation, policies on palliative medicine lecturers, curriculum and assessment, finance and governance practices, non state palliative care education programmes and recent reforms.

Methods

This paper discusses the need for inter- national information echange to enhance monitoring of palliative care education systems.

Results

A broad range of valiated indicators of palliative care education systems and policies is urgently needed to support the effective monitoring of palliative care educational programmes in sub Saharan Africa.

However, palliative care education system diagnoses differ widely in their objectives, scope, methodology and use. Much could be done to addresss gaps and reduce overlap among diagnosic instruments.

Sharing experienes between countries and promoting policy dialoque based on broadly comparable qualitative information on palliative care education systems, will facilitate effective decision making.

While a global and / or regional framework for reviewing palliative care education systems and policies might be desirable, in practice a regional or sub regional approach is more feasible.

Many regions have common palliative care education contexts and can structure reviews to better reflect their their shared values, objectives and challenges.

Conclusions

The key to successfully exchanging information on palliative care education systems betweeen countries is strong coordination mechanisms from regional intergovernmental entities that have palliative care education development among their primary bjectives.

eP196
INTERNATIONAL PALLIATIVE CARE PHARMACIST EDUCATIONAL EXCHANGE

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Introduction

Pharmacists are an integral member of the palliative care team. Thorough symptom assessment and medication management is essential to quality palliative care. We describe an educational exchange between a pharmacist in the US and a pharmacist in the UK through ties with their respective national professional societies. Funding was obtained through a combination of grants and educational scholarships.

Methods

The US based pharmacist spent 1 week observing palliative care pharmacist practices in the UK including inpatient hospice, inpatient academic palliative care unit and palliative care consult service. Key observations of similarities and differences of palliative care pharmacy practice were recorded and discussed.

Results

Observations were categorized into 2 primary categories and used to identify opportunities for future educational and research endeavors. Categories: Team structure and function (role of the pharmacist, disciplines on team); and medication utilization (medications not available in US/UK, place in therapy differences; route of administration differences). The visiting pharmacist shared observations with the host palliative care team to further educational dialogue.

Conclusions

The second exchange is planned for June 2019 in which the UK based palliative care pharmacist will visit the US practice including hospice, outpatient palliative care clinic, inpatient palliative care unit and inpatient palliative care consult service. Several educational projects are also under

development as a result of this rich informative exchange program including medication utilization surveys of pharmacists in the US and UK to quantify the observations made during educational exchange.

eP197
UNMET NEED FOR INTERPROFESSIONAL EDUCATION IN PAEDIATRIC CANCER: A SCOPING REVIEW

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Introduction
Despite improved treatment and care, children and adolescents diagnosed with cancer continue to die, while many of those cured are burdened by treatment-related sequelae. The best clinical management of children and adolescents with cancer depends on healthcare professionals with various skills and expertise. In the process of developing interprofessional education in paediatric cancer we wanted to identify and evaluate existing interprofessional education interventions in paediatric cancer.
Methods
We utilised the scoping review methodology to identify gaps in existing literature and examine extent, range and nature of interprofessional education in paediatric cancer. We searched PubMed, Scopus and Education Resources Information Center. Inclusion criteria were postgraduate studies targeting more than one profession in the education and evaluation of the educational intervention.
Results
Nine studies out of 411 references fulfilled the inclusion criteria. None evaluated systematically knowledge, skills, attitudes or the effects on patient outcomes or quality of care. We systematized the outcomes based on the six non-hierarchical levels of the modified Kirkpatrick model. One study reported on the reaction of participants to being part of the intervention. Three studies reported on acquisition of knowledge and fours studies evaluated the modification of attitudes among healthcare professionals. Four studies measured behaviour change outcomes, including increased compliance to guidelines and increased self-awareness. Three studies reported on improvements in patient's health.
Conclusions
Evidence-based practice and evaluation is necessary to derive the most benefit from educational interventions for clinical practice in paediatric cancer. However, there is a lack of well-structured, interprofessional education in paediatric cancer that has undergone evaluation.

eP198
CANCER-RELATED EDUCATIONAL SESSIONS FOR TEACHERS AND CLASSMATED OF HOSPITALIZED CHILDREN WITH CANCER: TEACHERS EXPERIENCES - A RESPECT STUDY

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Introduction
The educational and psycho-social challenges school-aged children with cancer experience at school re-entry, calls for supportive interventions. The RESPECT study includes a 60-minutes age-adjusted nurse-led education session in the school class of hospitalized children with cancer, aimed at enhancement of teachers and classmates' knowledge and attitudes about cancer and cancer treatment.
Methods
Pre- and post the educational session, a study specific questionnaire was mailed to 120 teachers of hospitalized children with cancer.
Results
Study inclusion occurred a median of 5 [0-110] days following the child's cancer diagnosis, and the education session was conducted at a median of 10 [2-118] days hereafter. Despite 72% of the teachers searching information prior to informing the classmates, 40% faced questions they were unable to answer. Furthermore, 27% of teachers felt insecure and 33% had insufficient resources to address the situation. Post-education, the teachers were satisfied with the content (100%), duration (98%) and level (98%) of the educational session. Furthermore, teacher's attitudes changed as they felt more secure and comfortable in: addressing cancer with the classmates (83%), having the child with cancer in the class (61%), and in cooperation with the family (73%). The educational session significantly reduced the teacher's insecurity related to having a child with cancer in the class ($p=0.005$). The educational session increased 66% of the teachers' and 98% of the classmates' undertraining of the child´s cancer disease and strain of the cancer treatment.
Conclusions
Enhancement of teachers to children with cancer's knowledge and attitude provides a cornerstone in easing children with cancers' school re-entry.

eP199
EFFECTS OF A PSYCHOEDUCATIONAL INTERVENTION IN PATIENTS WITH COLORECTAL CANCER UNDERGOING CHEMOTHERAPY

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Introduction
Colorectal cancer (CRC) is the cancer with the highest prevalence in Taiwan. Care coordination has received increased attention because it critically affects patient safety and care quality across services.
Methods
Patients with CRC who agreed to participate (n = 100) were randomized to either experimental or control group. The experimental group participated in a psychoeducational intervention (PEI). The PEI was constructed with two separate parts: educational information and materials relating to depression, anxiety, EORTC QLQ-C30, and self-efficacy. The intervention group participated in the PEI for at least 1 hour per section for 6 sections, in addition to using an educational manual designed and presented by the researchers. Participants in the control group were exposed only to the traditional pamphlet education. Data were collected just before the chemotherapy (T1), the 3rd (T2) and 5th weeks of chemotherapy (T3), and 2 weeks after the final session of chemotherapy (T4).
Results
Values for anxiety, depression, and quality of life two weeks (T4) after chemotherapy treatment ended showed significant differences for CRC patients who received PEI. Significant differences in self-efficacy were shown between the two groups after the fifth chemotherapy treatment (T3). The effects of anxiety, depression, and quality of life remained significant when group and time interactions were included in the model, showing a positive relationship between PEI and the variables of anxiety, depression, and quality of life.
Conclusions
Face-to-face PEI can be used effectively for CRC patients before chemotherapy in clinical oncology settings to reduce the degree of emotional disturbance and accelerate adaptation.

eP200

EFFECTS OF NURSE NAVIGATORS ON HEALTH OUTCOMES OF LYMPHOMA PATIENTS

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Introduction
Lymphoma has the highest prevalence among all cancer types in Taiwan. Care coordination has received increased attention because it critically affects patient safety and care quality across services. This study examines and evaluates the effect that adopting a nurse navigator interventions for newly diagnosed lymphoma patients.
Methods
In this retrospective study, 212 lymphoma patients were recruited between January 2009 and December 2013. The experimental group comprised 115 patients who had received nurse navigator interventions. The nurse navigator coordinated the recruitment, liaison, care plan implementation, conducted disease education, telephone consultations, follow-ups, and evaluations. The control group comprised 97 lymphoma patients. The patients in the control group had similar characteristics to those in the experimental group, and received routine care.
Results
Adopting a nurse navigator interventions in lymphoma care increased patient follow-up appointment compliance rates at 3 months (p =0.007). The model also effectively reduced the patients' 14-day readmission rate (p =0.05). Furthermore, these improvements were statistically significant. The results also indicated that the survival rate for patients receiving care from lymphoma. A nurse navigator interventions was superior to that of the control group receiving traditional care.
Conclusions
Adopting a anurse navigator interventions in lymphoma care effectively enhanced clinical treatment adherence, increased survival rates, and reduced the 14-day readmission rate. This study provides evidence that standardized nurse navigator programs can improve patient outcomes in cancer care.

eP201

EMBEDDING CANCER LITERACY EDUCATION INTO EXISTING ADULT LANGUAGE AND LITERACY PROGRAMS FOR NEW IMMIGRANTS TO AUSTRALIA: A QUALITATIVE STUDY.

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Introduction
Cancer disparities exist between different immigrant communities. Traditional health messaging such as translated fact sheets or posters may be inaccessible to some immigrants for cultural, language or literacy reasons. Partnering with existing adult immigrant language and literacy organisations may be a feasible means to improve both cancer literacy and language skills. This study used the RE-AIM translational research framework to identify factors that may facilitate or hinder the development and uptake of a cancer literacy English-as-a-Second-Language (ESL) curriculum specific to the Australian context.
Methods
Using a participatory action research approach, focus groups and interviews (N = 22) were held with ESL teachers of new immigrants attending government-sponsored language programs in South Australia.
Results
Through the lens of RE-AIM, two broad theme categories were identified that highlighted barriers and facilitating factors to *Reach* to immigrants; *Adoption* by teachers. A third theme category addressed factors associated with *Implementation* into existing language programs and *Maintenance* over time. Findings indicated that an *Efficacious* cancer literacy curriculum resource could be facilitated by developing flexible and culturally-sensitive content. In addition, the proposed curriculum should be developed according to national curricula frameworks; include different language levels, and incorporate varied communicative activities and media.
Conclusions
This study offered insight into barriers and facilitating factors to guide the development of an ESL resource feasible for inclusion into current government-sponsored ESL immigrant language programs in Australia.

eP202

THE DEVELOPMENT OF A NOVEL ONCOLOGIC-FOCUSED INTERNAL MEDICINE RESIDENCY PROGRAM

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Introduction
Due to the increasing complexity of cancer care, general internists and non-oncologic subspecialists lack the formal training in the unique medical needs of cancer patients and survivors or Onco-Internal Medicine. Our goal is to educate internists with this expertise.
Methods
Our location within a major cancer center created a unique opportunity to develop the first Internal Medicine Residency program with a specific focus on Onco-Internal Medicine. The Division of Internal Medicine (DOIM) at MD Anderson Cancer Center (MDACC) partnered with Baylor College of Medicine (BCM) in 2015 to develop the Baylor-MD Anderson Internal Medicine Residency Program that is managed as a separate track. The program, initiated in June 2015, is currently structured with 5 resident slots per year. Residents spend one-third of their time at MDACC and the rest at the 3 other BCM-affiliated hospitals providing MDACC track residents with broad exposure to non-oncologic medicine. The rotations at MDACC are focused on our hospitalist service and subspecialty internal medicine services. In addition, didactic sessions include morning report and lectures that focus on cancer-related internal medicine.
Results
Since the program's inception the number of applicants have far exceeded the number of slots available.

Match Year	# Applied	# Interviewed	# Matched
2015	20	17	5
2016	679	78	5
2017	546	79	5
2018	399	63	5

Conclusions
The interest in the program has been very robust. We plan to track the career paths of our graduates and through surveys gain feedback from our trainees to further enhance our program.

eP203
EVALUATION OF HIGH FIDELITY SIMULATION IN A HOME SETTING TO PREPARE UNDERGRADUATE NURSING STUDENTS IN MANAGING UNCONTROLLED SYMPTOMS RELATED TO ADVANCED LUNG CANCER

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Introduction
Managing uncontrolled symptoms related to advanced lung cancer is common for the nurse working in the hospice and palliative care settings. It is uncommon for the undergraduate nursing student to have hands-on experience since clinical opportunities are limited in this specialty. They report their lack of experience, confidence, and comfort in dealing with complex patient issues. The goal of this study was to mediate a resolution of a difficult and complex patient situation in a controlled, safe, and interactive learning environment.
Methods
Using a quasi-experimental one-group designed study, two cohorts of undergraduate nursing students (n=112) from an accelerated BSN program participated in a structured and scripted high fidelity simulation. The simulation consisted of a distraught spouse and a breathless manikin presenting with severe dyspnea, extreme anxiety, and moderate pain. Students were instructed in the pre-brief to assess and intervene with the spouse with teaching him about medication use and witnessing the administration of medications. During the debriefing, students completed three instruments (SSSL, SDS, EDQ) found to be reliable and valid for simulation.
Results
Descriptive analysis found that students responses were overwhelmingly positive for the simulation resembled a real life situation, designed specifically for their level of knowledge and skills, felt self-confident in learning.
Conclusions
The study accomplished our goal of teaching students how to resolve a common palliative care situation. The high levels of confidence, comfort, communication, and satisfaction toward managing a trio of uncontrolled symptoms validated our premise of using high fidelity simulation.

eP204
SUPPORTING ENVIRONMENTAL CHANGES NEEDED TO INCREASE SLEEPING FOR CANCER PATIENTS DURING THEIR HOSPITALIZATION

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Introduction
Introduction: the effect of disturbing in sleeps and rest for cancer patients is vital and impact on Quality of Life and on symptoms severity. Inpatients report serious sleep problems during hospitalization. In 2017, a national program, called "SueñON" was implemented to help rest during hospitalization.
Objective: to describe effectiveness after implementation of multimodal program with professionals, patients & families to increase rest environment and sleep.
Methods
Methods: observational study conducting a multimodal intervention; 1st phase determining sleep problems on patients and professionals determined barriers interfering resting. 2nd phase patients and families answered to a semi-structured interview to evaluate quality of sleep, hours, medication taken and distribution of activity and rest during day and the specific factors causing lack of sleep. Final phase some changes were consensus to do in the units.
Results
Results: sample N=113, (63 patients & 47 family members), probabilistic selection from the Oncology, Haematological and Palliative units. In our series, patients have sleep disorders, higher incidence of insomnia in women than men 68.32% / 52.20% (p =0.036). Reason for deterioration in sleep was anxiety, followed by pain and, much lesser extent other factors; need to use bathroom, pain, dry mouth or taking prescribed treatments.
Conclusions
Conclusion: a multimodal intervention was effective to change to a supportive environment making professionals, patients and family members more sensible about resting and sleep facilitating patterns. In our series of inpatient 2 of 3 have sleep disorders, having higher incidence of insomnia in women than men.

eP205
VALIDATION OF AN EDUCATIVE MANUAL FOR PATIENTS WITH BREAST CANCER SUBMITTED TO RADIATION THERAPY

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Introduction
Printed materials are important strategies for supporting educative activities, since they help the individual to assimilate the amount of information transmitted. The objective of this research was to validate of an educative manual for breast cancer patients undergoing radiation therapy.
Methods
Descriptive methodological research. A minimum agreement rate (AR) of 80% was considered to guarantee the validation. The data were collected from October to December 2017, by means of assessments tools for two different groups of participants: 17 experts in the theme area of the educative manual, and 12 women that received RT previously to treat breast cancer.
Results
Only two items of the assessment tool for the experts, one related to the manual's ability to promote behavioral and attitude changes and the other related to the extent of its use for other health services, obtained agreement rate (AR) < 80%, and were reformulated based on the participants' suggestions and in the literature. All other items were considered appropriate and/or complete appropriate in the three blocks proposed for the experts: objectives - 89%, structure and form - 93%, and relevance - 93%; and good and/or very good in the five blocks of analysis proposed for patients: objectives - 100%, organization - 100%, writing style - 100%, appearance - 100%, and motivation - 100%.
Conclusions
The appearance and content validation of the educative manual proposed were attended to. The educative manual was considered relevant and pertinent and may contribute to the understanding of the therapeutic process by breast cancer patients during radiation therapy.

eP206

IMPLEMENTATION OF AN ONLINE MASTER'S PROGRAMM IN PALLIATIVE CARE IN GERMANY

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Introduction

Introduction

In light of the growing need for palliative care in 2010, a part-time, post-graduate, multi-professional Master's program, "Master Online – Palliative Care" started in the Medical Faculty of the University of Freiburg, Germany. This interdisciplinary, practice-oriented and research-based degree qualifies students take on various positions in both inpatient and outpatient palliative care settings, ranging from management to work with patients. One particularly innovative element of this Master's program is its use of blended learning, which allows students to continue their career alongside their studies. Blended learning combines traditional face-to-face classroom methods with e-learning, utilizing the strengths of both methods to communicate knowledge, skills and attitudes.

Methods

Qualitative and quantitative evaluation were undertaken to evaluate whether a blended learning approach is appropriate to teach and learn complex issues like palliative care.

Results

The Master's program admitted 123 students and succeeded in bringing together students from various professional backgrounds. Half of the enrolled students were physicians, one third consisted of nurses, 15 students worked in the field of psychosocial and spiritual care and 7 participants came of the vocational fields of research, pharmacy and others. Since 2010, 43 students successfully completed the Master's Program. Data of the qualitative and quantitative evaluation shows a positive response to the blended learning approach and to the courses offered within the program.

Conclusions

A postgraduate, multi-professional Master's Program Palliative Care based on a blended learning approach is possible and much valued by the participants

eP207

DEVELOPMENT OF A GUIDELINE TO INFORM THE INFORMED CONSENT PROCESS REGARDING CANCER CLINICAL TRIALS

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Introduction

Informed consent in cancer clinical trials represents a major step in strengthening the respect for patient autonomy. However, patient misunderstanding of cancer clinical trial participation is identified as a critical issue. Lack of the communication guideline to drive the consent process may be the reason of limited effects.

Methods

The Delphi consensus method was used to identify essential information to support patient decision making regarding participation in cancer clinical trials. Experts directly or indirectly involved in informed consent process were invited to participate, including people with cancer, their family members, clinical research nurses, physicians and other health professionals.

Results

Two rounds of the Delphi surveys would be conducted. The results of each round would be reviewed by the reference group and provide their comments on the analytical decisions. The final results would form the basis of the content for the guideline document. Statements to be included with the guideline document would be written through a peer review process with the research team and advice from the reference group. The draft guideline would be applied from a recently completed trial to pilot the informed consent process using a scenario simulation. Further revision would be needed according to the participants' feedback from a scenario simulation.

Conclusions

The guideline document would guide health professionals to conduct informed consent and support patient understanding of cancer trial participation. Ongoing updates of the guideline document, and further testing of the guideline in clinical practice is recommended.

eP208

CULTURAL BARRIERS TO THE EFFECTIVE COMMUNICATION OF BREAST CANCER IN SUBSAHARAN AFRICA

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Introduction

The reduction of health mortality being a target of SDG 3, statistics show that the rate of maternal mortality death in Subsaharan African countries is still high. Kayum (2012) found out that health MDGs were not achieved in this region because the target population are not reached in a language they master. This research therefore aims at verifying the effectiveness of reaching target populations in their local language while paying attention to their cultural background when communicating on innovations in a multicultural world. Our case study is an experiment on the communication of knowledge on breast cancer in three sub-Saharan countries (Ghana, Tchad and Cameroon health).

Methods

A questionnaire was submitted to local populations in 5 localities in these countries to determine the cultural barriers hindering the effective communication of knowledge on breast cancer. Sensitization documents on breast cancer were translated into Ewe, Mbaye, Ghomala', Ewondo and Fufulde in Cameroon. In Bandjoun, a health programme using TfD was organised for different target groups. For one of the groups, cultural barriers were taken into consideration whereas in the other groups, they were not. Another questionnaire was disseminated nine months later to verify the level of appropriation of those who attended the campaign.

Results

The group in which cultural barriers was taken into consideration had a higher level of appropriation of knowledge.

Conclusions

This paper discusses cultural barriers to the effective communication of issues on breast cancer hence contributing in breast cancer prevention and education in the research target localities

eP209

NOVEL APPROACH FOR CANCER-RELATED FATIGUE: A DOUBLE-BLIND RANDOMIZED CLINICAL TRIAL

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Introduction

Paullinia cupana, a medicinal plant, has shown promising results for treatment of chemotherapy-induced fatigue, the most prevalent symptom for survivors.

Methods
Phase II randomized double-blind clinical trial comparing a standardized dry purified *Paullinia cupana* extract (PC-18) - in doses of 7.5 mg and 12.5 mg given orally twice a day - to placebo in women with early breast cancer scheduled to receive their first cycle of adjuvant systemic chemotherapy. Only patients that experienced increase in either BFI, HAD or Chalder fatigue scales following the first cycle of chemotherapy were included. For associations between qualitative variables, Chi-square test was used. Poisson regression was used to test for the relationship between the drug used and the outcome regarding the difference assessed in scores aforementioned. The significance level was 5%.
Results
PC-18 on 7.5 mg has not been statistically significant with any improvements on assessed scores when compared to placebo (IRR 0.99 [CI] 0.81 – 1.23, p = 0.958 for BFI; IRR 1.04 [CI] 0.56–1.95, p = 0,898 for HAD; IRR 0.95 [CI] 0.75–1.19, p = 0.645 for Chalder), while greater dosage (12.5mg) has shown the following outcomes regarding the scores (IRR 0.49 [CI] 0.30–0.81, p = 0.005 for BFI; IRR 0.89 [CI] 0.45–1.76, p = 0,735 for HAD; IRR 0.99 [CI] 0.79–1.22, p = 0.914 for Chalder) in the same comparison.
Conclusions
PC-18 has not shown to be better than placebo, being associated with worst outcomes when given 12.5 mg twice a day for women with breast cancer.

eP210
DIFFERENCES IN MUSCLE STRENGTH, BALANCE FUNCTION, QUALITY OF LIFE, AND FATIGUE LEVELS BETWEEN CANCER SURVIVORS AND HEALTHY SUBJECTS

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Introduction
We investigated the differences in muscle strength, balance function, quality of life (QOL), and fatigue between cancer survivors and healthy subjects. Furthermore, we aimed to investigate the relationship between balance function, QOL, and fatigue among cancer survivors and healthy subjects
Methods
Forty-one cancer survivors and 33 healthy subjects were included. Muscle strength was evaluated via handgrip and knee extensor strength. Balance function was evaluated using the Timed Up and Go (TUG) test, and body sway was tested using a force platform. QOL was assessed using the Medical Outcome Study 36-item Short-Form Health Survey. Fatigue was measured using the brief fatigue inventory.
Results
Cancer survivors exhibited significantly decreased muscle strength, higher TUG, lower QOL, and higher fatigue than healthy subjects ($P < 0.05$). There were no significant differences between the two groups for any parameters of the body sway tests. There was a relationship between body sway test and QOL ($P < 0.05$) for cancer survivors, but these relationships were weaker than those among healthy subjects. Additionally, there was a relationship between some subscales for fatigue and QOL ($P < 0.05$) among cancer survivors; these were stronger than those observed among healthy subjects.
Conclusions
Cancer survivors have the same balance function as healthy subjects despite their decrease in muscle strength. Cancer survivors initially tend to have decreased muscle strength, and thereafter worse balance function. The findings from this study will be relevant for the planning of rehabilitation programs for cancer survivors.

eP211
BRINGING CANCER-RELATED FATIGUE OUT OF THE CLOSET - IDENTIFYING BARRIERS AND FACILITATORS TO IMPLEMENTING GUIDELINES

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Introduction
Cancer-related fatigue (CRF) can significantly impact patient and family lives. Guidelines for CRF management are available but not widely used. This research aims to identify contemporary patient and health provider facilitators and barriers to talking about, and managing fatigue that can be used to inform local strategies for implementing a CRF guideline.
Methods
This health services research used a qualitative exploratory design. Five cancer survivors and 31 nursing, medical and allied health professionals participated in semi-structured interviews and / or focus groups at a major cancer centre. Interviews and focus groups explored different aspects of CRF guideline recommendations. A rapid method of deductive content analysis accelerated this implementation research.
Results
Key health professional barriers to fatigue management included: insufficient knowledge about fatigue and its management, and lack of time, accessible resources and services for fatigue. Consumer barriers included health professional language and attitudes towards fatigue, relative priority of fatigue in health consultations and limited stamina for extended or extra visits. Facilitators to optimal management for health professionals were alignment with existing systems, increased knowledge of CRF guidelines and tools, with improved referral pathways. Consumers emphasised the importance of their health professionals addressing fatigue as part of treatment, discussing a personal plan for preventing or managing fatigue, self-directed monitoring, management outside clinic appointments and use of telehealth consultations.
Conclusions
The findings can inform care delivery systems. Specifically, time pressures for hospital staff coupled with low consumer stamina indicates that fatigue screening, assessment and management should be time effective.

eP212
CANCER-RELATED FATIGUE IN AMBULATORY SPECIALIST CLINICS - SCREENING IMPLICATIONS

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Introduction
Cancer-related fatigue guidelines recommend routine fatigue screening. There is currently neither a gold-standard, nor a broadly accepted screening method and the impact of screening on care processes is poorly understood. The aim of this study was to estimate the extent of fatigue in outpatients at a specialist cancer hospital.

Methods
Hospital outpatients attending cancer clinics completed a paper-based survey with three fatigue screening items: one 0-10 numeric rating scale for current tiredness and two five-point pictorial scales rating tiredness last week and the impact of fatigue (Fatigue Pictogram). Demographics and documentation of fatigue for the clinic encounter on the day of survey completion and the following week were extracted via medical record audit. If people reported severe fatigue according to Canadian Association of Psychosocial Oncology cancer fatigue guideline definitions, researchers notified a clinical team member and recorded fatigue in the medical record.
Results
Of 1709 outpatients attending all clinics during one week, 529 (31%) completed the survey. Records were audited for 452 (85%) participants who made their surveys identifiable. Severe fatigue was reported for at least one question by 192 people (36%). Tiredness was reported as moderate or severe 'now' by 57% and 'last week' by 55% of participants. Fatigue had a major impact on daily activities for 23% of participants, yet was seldom recorded in clinical notes. Patient characteristics will be presented.
Conclusions
Over half of cancer outpatients may be experiencing moderate to severe fatigue. Clinical recording of fatigue was poor. Increased documentation may assist fatigue management.

eP213
CAN WE USE SALT WARM FOOT BATH FOR CHEMOTHERAPY RELATED FATIGUE?

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Introduction
Salt warm foot-bath is a traditionally way to relax and relieve fatigue after a long day, in our country. However, there is no knowledge about its effect on fatigue. This experimental study was planned to assess the effect of salt warm foot-bath on chemotherapy-related fatigue.
Methods
This research was carried out between November 2017 and May 2018, in Istanbul University Institute of Oncology. 75 chemo-patients who rated fatigue severity on a 0-5 ONS Fatigue Scale equal to or above 3 were randomized into control (n=37) and intervention (n=38) group. All patients received the standard information and a booklet about chemotherapy-related fatigue. Daily 20 minutes' salt warm foot-bath was recommended to the intervention group, for a week. Subjective fatigue perception of patients was assessed at the 1st and 7th day of treatment by using Piper Fatigue Scale. Daily fatigue severity was assessed by using 0-5 ONS Fatigue Scale, for a week.
Results
Most of the patients were married (80%), housewives (52%), had a primary school education(61.3%), and had low level of income (36%). The weekly course of fatigue was similar in both groups. However, decrease in the physical, affective, emotional and cognitive fatigue scores after a week was statistically significant for the intervention group, but not for control group.
Conclusions
This study showed that the salt warm foot-bath could be effective in reducing the negative effects of fatigue on physical, affective, emotional and cognitive functions. However, well-designed randomized controlled trials are needed to confirm its effectiveness in management of chemotherapy-related fatigue.

eP214
FACTORS OF PHYSICAL ACTIVITY LEVEL AMONG PATIENTS WITH COLORECTAL CANCER DURING CHEMOTHERAPY

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Introduction
Physical activity (PA) is a modifiable behavior and has been proposed as an important non-pharmacologic mean to improve fatigue among colorectal cancer (CRC) patients during chemotherapy. Therefore, identifying factors of high PA (HPA) is important to improve PA. This study aimed to explore factors of HPA among Japanese CRC patients in chemotherapy.
Methods
A cross-sectional, self-report survey was conducted with 113 CRC patients who underwent chemotherapy. Data were collected while they visited an outpatient clinic of a teaching hospital and the National Cancer Center in Japan. The Japanese version of International Physical Activity Questionnaire was used to assess PA. HPA was defined as exceeding 18 MET hours per week (MET). Logistic regression model was applied to assess the relationships between HPA and other factors including individual factors, disease related factors and communication regarding self-care during chemotherapy.
Results
Of 113 CRC patients, 61.1% were low PA (LPA). The mean PA was 23.1MET. Related factors of HPA included younger age (adjusted odds ratio (AOR) = 0.96, 95% confidential interval (CI) = 0.92-0.99), HPA in pre-diagnosis (AOR = 5.06, 95% CI = 1.71-14.96), without depression symptoms (AOR = 5.14, 95% CI = 1.33-19.85), communicating "Necessity of spending a daily life actively via housekeeping or hobby even during treatment" (AOR = 2.92, 95% CI = 1.15-7.40).
Conclusions
The relevant factors would be useful when considering support to promote PA among CRC patients during chemotherapy. Nurses should also attempt to communicate with the patients regarding reasonable measures to have PA in their daily life.

eP215
FACTORS RELATED WITH FATIGUE IN PATIENTS UNDERGOING RADIOTHERAPY

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Introduction
Fatigue is a common and debilitating symptom during cancer-related radiotherapy.
The purpose of this study was to investigate fatigue in patients undergoing radiotherapy for cancer and to investigate factors in relation to fatigue, for example physical activity and quality of life (QoL).
Methods
Of 507 available patients, 458 patients (52% women, mean age 65 years, breast (38%), prostate (32%), or other cancer types) answered a questionnaire once, after receiving mean 33 (+/-17) Gy fractioned radiotherapy.
Results
Of the patients, 321 (72%) reported presence of fatigue (median 4, interquartile range 4, rated 0; never to 10; all the time). Factors related to greater likelihood to experience fatigue were <45 years age ($p<0.01$), living alone ($p<0.01$), radiotherapy to thorax/mediastinum/lung ($p=0.02$), accumulated radiotherapy dose of >44 Gy ($p<0.01$), concomitant chemotherapy ($p=0.04$), any other disease beside cancer ($p<0.01$), and ≥ six symptoms, other than fatigue (Memorial Symptom Assessment Scale, $p<0.01$). Patients experiencing fatigue compared to non-fatigue patients experienced worse QoL (Functional Assessment of Cancer Therapy-General score,

p<0.01), were less likely to adhere to physical activity recommendations (39% versus 67%, p<0.01), and more seldom perceived a healthy balance between rest and activity (33% versus 75%, p<0.01).

Conclusions

Three quarters of patients during radiotherapy experienced fatigue and subgroups of patients were more likely to experience fatigue. Patients experiencing fatigue practiced less physical activity and experienced worse QoL than other patients. Cancer care professionals may considering paying attention to the subgroups of patients presenting greater likelihood to experience fatigue, to reduce symptom distress, and improve physical activity level and QoL.

eP216

EFFECTS OF EXERCISE ON CANCER-RELATED FATIGUE IN PEDIATRIC ONCOLOGY: A COMPARISON OF AN INPATIENT PROGRAM AT THE BEGINNING AND IN THE MIDDLE OF CANCER THERAPY

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Introduction

One of the most common side effects of cancer therapy in pediatric oncology is Cancer-related Fatigue [CrF]. CrF is multidimensional, with the most distressing symptoms affecting quality of life. The purpose of our study was to evaluate the effects of a computer-based exercise program at the beginning versus in the middle of cancer therapy on CrF.

Methods

Exercise program at the beginning of therapy [bt] had a duration of two month and includes twelve subjects (mixed cancer, age 13.3±2.5 years, 2 females) and started 14.8±9.8 days after beginning of therapy. Exercise program in the middle of therapy [mt] had a duration of three month and includes nine subjects (mixed cancer, age 11.3±2.2 years, 6 females) and started 58.2 ±62.0 days after beginning of therapy. PedsQL Multidimensional Fatigue Scale questionnaire was completed before and after intervention.

Results

Patients in bt show an overall CrF score of 67.94±10.85 pre and 62.71 ±18.96 post intervention (p=0.288), higher scores indicate lower CrF. CrF related to sleep/rest was 57.29±16.30 pre and 53.47±25.18 post intervention (p=0.607). Patients in mt show an overall CrF score of 65.96±17.41 pre and 75.62±18.8 post invention (p=0.127). CrF related to sleep/rest was 59.26±22.22 pre and 75.93±21.11 post intervention (p=0.022).

Conclusions

Exercise intervention in the middle of cancer therapy seems to be more effective on CrF than at the beginning of therapy. Results underline the importance of physical activity for quality of survival in pediatric oncology.

eP217

SOCIAL SUPPORT IN BREAST CANCER PATIENTS WITH FATIGUE

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Introduction

A large number of women with breast cancer suffer from fatigue, and social support is described as having a positive effect on health in stressful life situations. The aim of this study is to assess social support in a sample of breast cancer outpatients with fatigue during treatment. In addition to explore the association between cancer related fatigue and social support and, further, between social support and demographic and treatment characteristics.

Methods

Breast cancer outpatients with fatigue (n=160) were recruited from a Norwegian hospital. The research instruments included Social Provisions Scale (SPS), which measures «attachment», «social integration», «reassurance of worth», and «nurturance», and Fatigue Questionnaire (FQ), which measures total, physical and mental fatigue. Data were analysed using descriptive statistics, and linear regression analysis.

Results

Median total score for SPS was 59 (min/max = 39/64). A significant association were found between mental fatigue and the provisions «reassurance of worth» and «nurturance». In addition, association were found between social support and living with someone.

Conclusions

To a large extent, the breast cancer patients with fatigue in this study experienced social support from their surroundings. The fact that significant associations were found between mental fatigue and two of the provisions of SPS suggest that social support is more related to mental fatigue than physical fatigue. Findings from this study suggest that living with someone is significant for the experience of social support during treatment for breast cancer. Clinicians need to evaluate breast cancer patients with fatigue's social support.

eP218

THE CIROCO STUDY: EVALUATING THE CORRELATION BETWEEN FATIGUE AND QUALITY OF LIFE (QOL) IN CANCER PATIENTS TREATED WITH BIOSIMILAR EPOETIN ALFA FOR CHEMOTHERAPY-INDUCED ANEMIA (CIA)

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Introduction

Anemia frequently occurs in patients undergoing chemotherapy; fatigue is a common symptom, and substantially impacts QoL. We evaluated the correlation between QoL and fatigue in cancer patients treated with biosimilar epoetin alfa (Sandoz) for CIA.

Methods

CIROCO was a non-interventional, prospective study conducted in France. Patients had solid tumours or haematological malignancies, ≥2 cycles of chemotherapy after inclusion and received biosimilar epoetin alfa for CIA. Data were collected on day of inclusion (T0) and after 2–3 (follow-up; T1) and 4–6 (end of follow-up; T2) chemotherapy cycles. Fatigue was assessed using a visual analogue scale (VAS, range 0–10), and QoL with the EORTC QLQ-C30 questionnaire.

Results

854 patients were included in the Full Analysis Set: solid tumors, n=678; hematological malignancies, n=176. Mean (SD) hemoglobin was 9.6 (±0.8) g/dL at baseline, 10.9 (±1.5) g/dL at T1 and 11.3 (±1.5) g/dL at T2. From T0–T2, mean (SD) change in patient-reported and physician-reported fatigue VAS score was –4.4% (±85.9%) and –6.8% (±81.9%), respectively, and mean (SD) improvement in patient-reported QoL was 31.3% (±88.7%). The Pearson correlation coefficient for fatigue and QoL was: T0 –0.39 (p=0.0152), T1 –0.54 (p<0.0001), T2 –0.64 (p<0.0001). In the safety population (n=921), 33.9% had ≥1 adverse event (AE), 16.5% ≥1 serious AE and 2.5% ≥1 treatment-related AE.

Conclusions
Treatment of CIA with biosimilar epoetin alfa resulted in improved hemoglobin, fatigue and QoL. Reduced fatigue correlated with improved QoL. This may be useful in clinical practice, as fatigue VAS is easier to administer than EORTC QLQ-C30.

eP219
SLEEP DISTURBANCES IN METASTATIC BREAST CANCER PATIENTS

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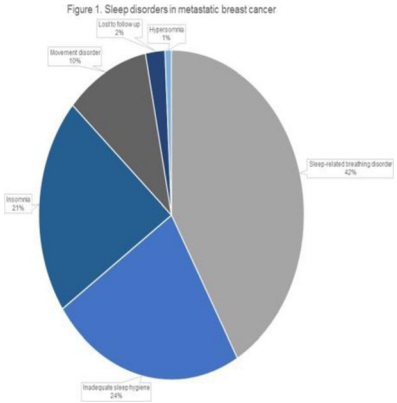
Introduction
Metastatic breast cancer patients may experience daytime fatigue, sleep disturbance, and altered sleep-wake cycles. Identification and treatment of underlying sleep disorders may alleviate symptom burden.
Methods
All metastatic breast cancer patients who underwent formal sleep consultation at MD Anderson Cancer Center between 4/1/2009 and 6/30/2014 were identified. Cancer characteristics, sleep-related history, laboratory and polysomnographic data, were collected.
Results
Patient characteristics are listed in Table 1. The most common sleep symptoms included snoring (85%), daytime fatigue (72%), daytime sleepiness (71%), sleep onset insomnia (43%) and sleep-maintenance insomnia (21%). Many used sleep aides (35%) and pain medications (38%). Pittsburgh Sleep Quality Index revealed poor sleep in 83%, and Epworth Sleepiness Scale confirmed daytime sleepiness in 59%. Sleep disorders are described in Figure 1, and polysomnography was performed in 71%. Obstructive sleep apnea was diagnosed in 42 patients of which severity was mild (45%), moderate (21%) and severe (33%). Positive airway pressure therapy was prescribed in 76% (40) patients with 65% compliant with therapy. Other sleep disorders included insomnia (36%) and inadequate sleep hygiene (40%). Most patients (67%) followed up in one year.

Table 1. Patient characteristics

Characteristic	N=75	%
Median age (years)	54 (30 to 84)	
Female gender	73	97
Median body mass index (kg/m^2)	34.9 (19.0 to 72.3)	
Post-menopausal status	40	53
Receptor + (ER, PR, HER2-neu)	59	79
Triple negative	16	21
Active therapy 3 months prior to sleep evaluation	69	92
Surgery	3	4
Radiation	14	20
Chemotherapy	49	75
Hormonal	25	36
ECOG performance status		
0-1	70	93
2	5	7
Alive 1 year after sleep consult	50	67

ER, estrogen receptor; PR, progesterone receptor; HER2-neu, human epidermal growth factor receptor; ECOG, Eastern Cooperative Oncology Group



Conclusions
Patients with metastatic breast cancer may have significant sleep complaints. Sleep surveys can help screen for underlying sleep disorders, and signs and symptoms of sleep-disordered breathing should prompt referral for formal sleep evaluation. Diagnosis and treatment of underlying sleep disorders such as obstructive sleep apnea, insomnia and suboptimal sleep hygiene, may alleviate symptom burden and improve fatigue.

eP220
PATIENT-REPORTED FATIGUE IN BREAST CANCER PATIENT RECEIVING RADIOTHERAPY

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Introduction
Fatigue, or tiredness, is one of the most commonly reported symptoms in breast cancer patients treated with radiotherapy (RT). This study aimed to identify characteristics associated with fatigue in breast cancer patients receiving adjuvant RT.
Methods
Patients with non-metastatic breast cancer receiving RT at the Odette Cancer Centre from 2011-2017 were included in our study if they completed at least one ESAS pre- and post-RT. Existing databases were queried for information regarding patient, disease, and treatment characteristics, supplemented by data from chart review. To identify variables associated with fatigue scores pre-RT, post-RT and changes in fatigue scores, a univariate and multivariable general linear regression analysis was conducted; $p<0.05$ was considered statistically significant.
Results
Our study included 1223 female patients (mean age 59 years old) who completed ESAS on average 28 days before, and 142 days after RT. In multivariable analysis, higher baseline fatigue scores were found in women with higher disease stages ($p=0.001$), and those to receive locoregional radiation ($p<0.001$). No variables were significantly associated with post-RT fatigue scores. While adjuvant chemotherapy and locoregional RT were associated with higher baseline scores in univariable analysis, in multivariable analysis, they were associated with significant reduction in fatigue post-RT ($p=0.011$, $p=0.007$ respectively).
Conclusions
Fatigue is associated with higher disease stage and receipt of locoregional radiation. While the relationship between anxiety or depressive symptoms and fatigue is well-established, a major gap exists in our understanding of its etiology and treatment; further investigation to address this can better improve patient quality of life.

eP221
MINDFULNESS MEDITATION AND PROGRESSIVE MUSCLE RELAXATION FOR BREAST CANCER PATIENTS RECEIVING ADJUVANT PACLITAXEL REGIMEN: A RANDOMIZED CONTROLLED TRIAL

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Introduction
The aim of this three-arm randomised controlled study was to examine the effects of mindfulness-based stress reduction (MBSR) and progressive muscle relaxation (PMR) on fatigue, coping with and quality of life in breast cancer patients receiving adjuvant paclitaxel regimen.
Methods
The study sample was randomly assigned to either a MBSR (n=20), (PMR) (n=19) or control group (CG) (n=15). Participants were instructed on MBSR and PMR. The steps of interventions were recorded a voice recorder, and participants were asked to listen the audio files during exercises. The intervention groups continued MBSR or PMR 20 min. each day, totally 12 weeks at their home. The CG received only an attention placebo. Data were collected by Brief Fatigue Inventory (BFI), Brief COPE, and Functional Living Index-Cancer (FLIC). Fatigue, cope with, and QOL scores were measured at baseline, week 12, and week 14 for follow-up assessment.
Results
BFI scores were significantly decreased in the MBSR, PMR groups compared with the CG at week 12 and at week 14 ($p<.05$). The sub-dimension scores of Brief COPE including denial, behavioral disengagement, acceptance, humor, using emotional support, using instrumental support, substance use, planning, and positive reframing were significantly higher in the MBSR, and PMR groups than the CG at week 12 and at week 14 ($p<0.05$). Regarding FLIC scores, there were no significant differences between the groups at week 12 and at week 14 ($p>0.05$).
Conclusions
MBSR and PMR are effective supportive interventions that can be used to manage fatigue and coping with in breast cancer patients.

eP222
NUTRITIONAL STATUS AND PSYCHIATRIC DISORDERS AMONG ELDERLY LUNG CANCER PATIENTS: SPECIAL ATTENTION FOR BETTER DISEASE MANAGEMENT

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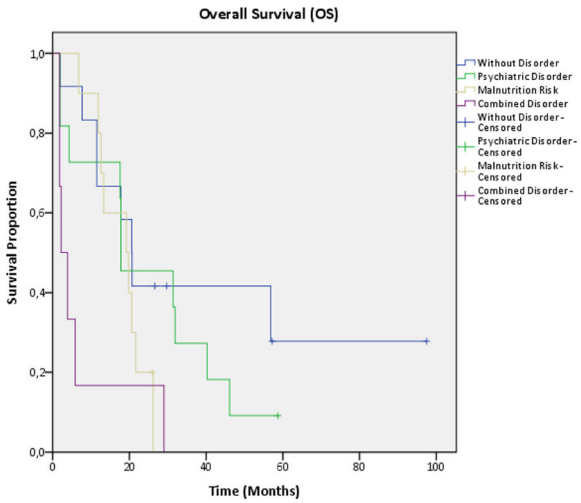
Introduction
Prevalence of weight loss and depression and/or anxiety among lung cancer (LC) patients is high. Aim of this study was to examine malnutrition risk and presence of psychiatric disorders among geriatric LC patients as well as its influence on overall survival (OS).
Methods
This study was conducted at the Institute for Pulmonary Diseases of Vojvodina, Serbia. Assessment of malnutrition risk was done by the Malnutrition Universal Screening Tool (MUST) and for assessment of psychiatric disorders Hospital Anxiety Depression Scale (HADS) was used. Survival follow-up was 5 years.
Results
Out of total 119 observed patients with diagnosed LC 39 (32.8%) were aged over 65 and included in further analysis. Majority of this patients were male (71.8%) in ECOG PS 1 (79.5%). We observed psychiatric disorders in 43.6% of patients and 23.1% of patients had combined anxiety with depression. Malnutrition risk was observed in 41.0% of patients, out of those high risks in 30.8%. Combined psychiatric disorder and malnutrition risk was observed in 25.6% of patients. Median OS was 17.8 months. Significantly lower OS was observed in patients with combined malnutrition risk and psychiatric disorders (p=0.010). One-year survival was 64.1% (25/39), 3-years 15.4% and 5-years 2.6%.



Conclusions
Using easy-to-use questionnaires should be of great importance in everyday practice with the aim of early recognition of psychiatric disorders and prevention of cachexia. Considering decreased physiological reserve and other health conditions in the elderly special attention and personalized treatment approach should be made for each of those patients in order to improve their QoL.

eP223
OLDER ONCOLOGY PATIENTS USE FEWER COPING STRATEGIES DURING CHEMOTHERAPY

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Introduction
The number of older adults diagnosed with cancer is expected to increase by 67% between 2010 and 2030. However, little is known about age differences in the use of coping strategies to deal with the effects of cancer and its treatment. The purpose of this study was to evaluate for differences in the use of coping strategies between younger (<65 years) and older (>65 years) during cancer chemotherapy.
Methods
Patients were dichotomized into younger (n=933) and older (n=352) age groups. Patients completed a demographic questionnaire and medical records were reviewed for disease and treatment information. Coping strategies were assessed using the 28 item Brief Cope Inventory (Carver, 1997) and scored into fourteen subscales. Between group differences were assessed using Independent sample t-tests and Chi Square analyses.

Results
Compared to younger patients, older patients were more likely to be male and living alone, and have a lower annual income, a higher level of comorbidity, and a poorer functional status. No age differences were found the following coping strategies: acceptance, denial, substance use, and behavioral disengagement. Older individuals were less likely to use the following coping strategies: active coping, planning, positive coping, humor, religion, emotional support, instrumental support, distraction, venting, and self-blame.
Conclusions
Clinicians can use these findings to enhance positive coping strategies in older oncology patients receiving chemotherapy.

eP224
USE OF PATIENT REPORTED OUTCOMES (PROS) TO INFORM SUPPORTIVE CARE FOR GERIATRIC ONCOLOGY PATIENTS

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Introduction
We examined PROs (Edmonton Symptom Assessment System (ESAS) and psychosocial needs) to determine differences in young versus older patients' (OPs') symptom severity.
Methods
A population-based cohort in Alberta, Canada that completed PROs within +/- 60 days of diagnosis. Patients were divided into young (age <70) versus older (age >/=70) groups. Logistic and linear regression evaluated predictors of symptom severity.
Results
There were 1310 patients: 30.5 % were older and 53.8% were males. OPs were more likely to have metastatic disease (49.4% versus 42.6%) and more comorbidities. Mean ESAS physical and psychological sub-scores were similar between ages. Compared to young patients, OPs had different psychosocial needs and symptom profiles including worse fatigue ($p<0.001$) and breathlessness ($p=0.001$), but better nausea ($p=0.03$) and wellbeing ($p=0.05$). Almost 90% of OPs reported some fatigue, and >50% reported some breathlessness, appetite changes, anxiety, and wellbeing changes. Generally, OPs reported fewer psychosocial needs, except walking/mobility and nutritional problems. Predictors of moderate to severe fatigue among OPs included hematological cancer (OR 7.7) or anxiety (OR 1.2), while breast cancer (OR 0.2) or early stage disease (OR 0.2) were protective (all $p<0.05$). Predictors of high ESAS physical subscore in OPs included advanced stage ($\beta=0.3$), whereas breast ($\beta= -0.2$), colorectal ($\beta= -0.2$), or prostate ($\beta= -0.3$) cancers were protective (all $p<0.01$). Predictors of high ESAS psychological sub-score in OPs included colorectal ($\beta= 0.2$) or lung ($\beta= 0.2$) cancers (all $p<0.05$).
Conclusions
OPs experience different symptom profiles and psychosocial needs than young patients, underscoring the value of age-specific symptom interventions.

eP225
ASSOCIATION OF FRAILTY WITH EMOTIONAL HEALTH OF OLDER PATIENTS WITH ADVANCED CANCER: A UNIVERSITY OF ROCHESTER NCI COMMUNITY ONCOLOGY RESEARCH PROGRAM GERIATRIC ASSESSMENT TRIAL

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Introduction
Aging related deficits eventually manifests as frailty, which may identify older patients with advanced cancer who are at risk of deteriorating emotional health.
Methods
Secondary analysis of baseline data from a nationwide cluster randomized trial. Patients aged ≥70 years with stage III/IV solid tumor or lymphoma and ≥1 Geriatric Assessment (GA) domain impairment (e.g., function, cognition) were enrolled. Frailty was assessed using the deficit accumulation frailty index (DAFI; range 0-1) based on GA after excluding the psychological domain. Patients were stratified based on DAFI into robust (0-<0.2), pre-frail (0.2-<0.35), and frail (≥0.35) categories. Patients completed the Generalized Anxiety Disorder-7 (range 0-21), Distress Thermometer (range 0-10), and Geriatric Depression Scale (range 0-15). Multivariate linear regression models examined the association of frailty with psychological outcomes, controlling for relevant patient covariates. Beta(β) coefficients are reported.
Results
541 patients (mean age: 77 years; 70-96) were included. DAFI ranged from 0.04 to 0.94, with 27% patients classified as robust, 42% pre-frail, and 31% frail. Patients had mean depression score: 3.09 (SD 2.74), anxiety score: 2.88 (SD 4.01), and emotional distress score: 2.90 (SD 2.71). Compared to robust patients, frail patients had increased scores for depression ($\beta=3.35$), anxiety ($\beta=2.71$), and emotional distress($\beta=2.16$); all $p<0.01$; while pre-frail compared to robust patients reported higher scores for depression ($\beta=1.10$) and emotional distress ($\beta=0.83$) (both $p<0.01$), but not anxiety.
Conclusions
Our results demonstrate that in older patients with advanced cancer, frailty is associated with poorer emotional health. Interventions aimed at improving frailty might also improve emotional health.

eP226
ATTITUDES TOWARDS PHYSICAL ACTIVITY AND EXERCISE IN OLDER PATIENTS WITH ADVANCED CANCER DURING ONCOLOGICAL TREATMENT - A QUALITATIVE INTERVIEW STUDY

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Introduction
Older patients with cancer are underrepresented in clinical exercise-based trials. To engage older patients in physical activity (PA), it may be necessary to consider age-related decline in health, comorbidities and practicalities. The aim of the study was to explore attitudes towards PA and exercise among older patients with cancer to inform future exercise-based interventions.

Methods
Individual interviews (N = 23) were conducted in patients ≥ 65 years with advanced lung, biliary tract and pancreatic cancer who were treated with oncological systemic treatment. Patients were recruited with a purposive sampling strategy. A semi-structured interview guide focusing on attitudes towards PA and exercise, including perceived barriers, facilitators and motivators, was used.
Results
Identified themes were: 1) a general positive perception of PA 2) comorbidities and external circumstances prevent PA, 3) fatigue overshadows life, 4) social support is key to short and long-term motivation, 5) fixed conditions keep one focused, 6) familiarity raises confidence and motivation.
Conclusions
Even though perceptions of PA were positive among older patients with cancer, most struggled to stay physically active. Several factors related to cancer and aging were identified as barriers towards PA, most profoundly was the overwhelming feeling of fatigue. Improving physical and mental well-being, fixed conditions (e.g. group-based exercise and supervision) and social support were identified as motivators and facilitators for PA. Preferences for PA varied, but activities that were familiar increased motivation. Health care professionals should aim to develop holistic and multi-supportive exercise programs adjusted to each patient's limitations, needs and personal resources.

eP227
PERFORMANCE-ADJUSTED LIFE YEARS MAY SUBSTITUTE FOR QUALITY-ADJUSTED LIFE YEARS IN COST-EFFECTIVENESS ANALYSIS FOR ELDERLY PATIENTS WITH ADVANCED LUNG CANCER

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Introduction
Quality-adjusted life years (QALY) are usually estimated using the quality of life (QOL) scale. However, a long-term collection of questionnaire and complex utility analysis become a burden on both patients and researchers. The aim of this study is to explore whether performance status (PS) could be a substitute for QOL scale in cost-effectiveness analysis.
Methods
We prospectively recruited patients aged ≥70 years with newly-diagnosed advanced non-small-cell lung cancer scheduled to initiate chemotherapy (Trial registration number, UMIN000012845). All patients provided written informed consent. EuroQol 5 Dimension questionnaire and ECOG-PS, graded from 0 to 5, was obtained every 12 weeks. The utility value for PS was calculated as 0.2×(5-PS). The mean cumulative medical costs (¥, Japanese yen) for QALY and performance-adjusted life years (PALY) were calculated and compared.
Results
A total of 29 patients were enrolled. Median age was 74 (70-83) years. Median follow-up period was 15.1 months. Treatment included cytotoxic chemotherapy (52%), targeted therapy (24%), and others. PALY was highly correlated with QALY (Spearman rho=0.9847, $p<0.0001$, $R^2=0.9742$). Mean cumulative costs for QALY or PALY were ¥3.6 or ¥3.3 million/person at the first year, and ¥8.4 or ¥8.4 million/person at the second year. The difference between QALY- and PALY-related costs widened after the third year.
Conclusions
In elderly patients with advanced non-small-cell lung cancer, PALY could be used as a substitute for QALY until the second year after the diagnosis. This easy-to-use methodology for cost-effectiveness analysis may help socioeconomic research in the geriatric oncology.

eP228
PATIENT-REPORTED OUTCOME (PRO) COMPLETION IN OLDER ADULTS WITH ADVANCED CANCER; A UNIVERSITY OF ROCHESTER NATIONAL CANCER INSTITUTE COMMUNITY ONCOLOGY RESEARCH (UR-NCORP) PROGRAM TRIAL

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Introduction
National organizations advocate older adult enrollment in clinical trials and PRO inclusion, with the goal of improving quality of life for this growing, understudied population. Despite these recommendations, concerns persist regarding the ability of older adults with advanced cancer to complete PRO. The aim was to determine the percentage of older patients needing assistance in completing PRO, and identify associated factors.
Methods
This was a secondary analysis of a cluster randomized trial (URCC 13070; PI: Mohile) of patients aged 70+ with advanced solid tumors or lymphoma and at least one impaired geriatric domain. The dependent variable was whether the participant required assistance with PRO completion (Yes/No). Demographic, clinical, and geriatric assessment (GA) domain impairments were examined for association with needing PRO assistance using logistic regression.
Results
From 2014-2017, 541 individuals with advanced cancer were enrolled from 31 practices (mean age 77 years, range70-96, 49% female, 48% high school or less). At baseline, 72% completed PROs independently and 28% needed assistance; most received help from a caregiver (44%) or research assistant (37%). Help included reading the questions (69%) and writing responses (48%). Variables associated with needing assistance were increasing age ($p=.017$) and less education ($p<.001$). GA domain impairments significantly associated with needing assistance included cognition, polypharmacy, comorbidity, function, psychological status, and vision and hearing difficulties (all p's<.05). At 4-6 weeks, 52% needing assistance at baseline continued to require assistance.
Conclusions
While the majority of older adults with advanced cancer were able to independently complete PROs, assistance was required for almost 30% of patients.

eP229
A RAPIDLY GROWING GIGANTIC SQUAMOUS CELL CARCINOMA OF THE UPPER EYELID IN AN ELDERLY HOSPICE PATIENT

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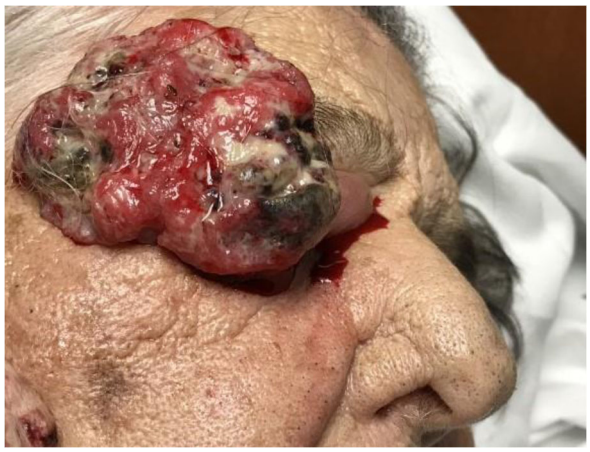
Introduction
Squamous cell carcinoma (SCC) is an uncommon malignant neoplasm of the eyelids comprising 5–10% of all eyelid malignancies.
Methods
We report an uncommon case of a rapidly growing gargantuan squamous cell carcinoma of the right upper eyelid and its management in an elderly hospice patient.
Results



An 84-years-old nonsmoker cognitively-impaired female, with poor functional status (ECOG 3), on hospice care, developed a rapidly growing, foul smelling, painful mass arising from the lateral right upper eyelid within the course of three months. It measured 9 centimeters by 8 centimeters in greatest dimensions, and it interfered with her quality of life, as it was causing complete ptosis impairing her daily activities. Cemiplimab, an anti-PD-1 agent, was initially recommended prior to surgery, but the risk of potential development of an immune-related adverse event in this frail elderly woman outweighed the potential benefits. After addressing goals of care with her family, the decision was made to proceed with radical wide excision of the tumor with repair with a cervicofacial flap. Excisional biopsy showed moderately differentiated squamous cell carcinoma invasive to subcutis without any lymphovascular invasion. The patient was discharged to home hospice three days later in stable conditions and asymptomatic.

Conclusions
Squamous cell carcinoma in the eyelid occurs much less common than basal cell carcinoma, but are more aggressive and invasive, and can metastasize and invade the orbital and intracranial structures. Addressing goals of care is of utmost importance when formulating a plan of care especially in elderly frail patients.

eP230
PSYCHOLOGICAL AND SPIRITUAL DISTRESS IN OLDER AND THE OLDEST-OLD ADVANCED CANCER PATIENTS (O-OOADCA) IN A COMPREHENSIVE CANCER CENTER

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Introduction
Older cancer patients may experience multiple physical, emotional and spiritual symptoms. Limited literature describing the intensity of psychological and spiritual distress in O-OOAdCa.
Methods
Retrospective chart review of patients seen by the Palliative Care team from January 2013 to December 2016. We randomly sampled 200 patients from the age ranges(<65, 65 - <85) and 41 patients ≥85). Using the ESAS-FS, determined the frequency, and correlates of self-reported Spiritual Pain(SP) (pain deep in your soul/being that is not physical) and Anxiety and Depression and other symptoms. Psycho-spiritual distress defined as SP ≥1/10, Anx≥2/10, and Dep ≥2/10.
Results
52% female, 61% white, and 48% ECOG of 2 in the group <65, 48% female, 61% white, and 43% ECOG of 2 from group 65 to 84, and 49 female, and 83% white, and 49% an ECOG of 3 from the group >85 years. SP was present in 101/200 (51%) in the group <65 vs. 61/187(36%) in group 65-84 vs. 15/54(29%) in ≥80, p=0.004. Anxiety 130/200(65%), vs. 120/187(65%), vs. 35/54(65%) per group respectively, p=NS. Depression was present in 109/200 (55%), vs. 100/187(54%), vs. 29/54(54%), respectively per group, p=NS. Psycho-spiritual distress was present in 65/200(33%), vs. 44/187(24%), vs. 11/54 (20%) per group respectively, P=NS. Logistic regression showed gender female correlated with higher psycho-spiritual distress (OR:2.08, p=0.012), fatigue OR:1.32, p=0.01, Well-Being OR:1.32, p=0.02, Financial-Distress OR:1.63, p=0.00, age group<65, OR:9.24, p=0.03.
Conclusions
High prevalence of Anxiety, Depression and Spiritual-Pain in O-OOAdCa. Less prevalence of Spiritual-Pain in the Oldest-Old compared with the rest of the population. An Integrative Psycho-spiritual care is needed.

eP231
CARDIOVASCULAR COMPLICATIONS OF TYROSINE KINASE INHIBITORS IN ELDELY PATIENTS WITH METASTATIC RENALCELL CANCER

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Introduction
Approval of multi-targeted tyrosine kinase inhibitors (TKIs),), sorafenib, sunitinib, and pazopanib significantly improved outcomes for patients with metastatic renal cell cancer(mRCC). Several studies demonstrated increased cardiotoxicity in patients treated with TKIs.
We studied the cardiovascular complications of TKI therapy in elderly mRCC patients.
Methods
This is a retrospective analysis of prospectively collected data of elderly patients(age 65 and above) with mRCC started on TKI from 2013-2017 referred for cardiac monitoring. We examined the incidence of

cardiovascular adverse events through December 2017 including cardiomyopathy, acute myocardial infarction (AMI), hypertension and arrhythmias

Results

Out of 138 patients who were referred for monitoring of TKI induced cardiotoxicity 27 were elderly. The median age was 68 years and males were predominant(92.6%). Among pre existing risk factors 22.2% had diabetes,59.3% hypertension(HT) and 14.8% had ischemic heart disease. The median follow up by echocardiography was 13 months (range 1- 50 months) .3(11.1%) were treated with only sunitinib, 8(29.6%) with sorafenib, 11 (40.7%) with pazopanib, and 5(18.5%) were treated with a combination . 6(22.2%) patients developed new onset HT, 2 (7.4%) patients developed dilated cardiomyopathy, one patient had supraventricular arrhythmias and one patient sustained myocardial infarction.

Conclusions

Alarge proportion of elderly patients with metastatic RCC have preexisting co morbidities and many develop new onset HT. Close monitoring for cardiovascular toxicity is very important in elderly patients of mRCC receiving TKIs. A dedicated cardio oncology clinic at cancer centres will help in integrating care and improving outcomes in high risk population.

eP232

IDENTIFYING ELDERLY CANCER PATIENT'S PHARMACEUTICAL NEEDS IN A OUTPATIENT CENTRE

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Introduction

Elderly oncology patients who are receiving chemotherapy may have increased risk of drug-related problems (DRPs) due to polypharmacy from cancer and non-cancer drugs. To identify and manage patient's DRPs, we provide Medication Therapy Management (MTM) service in National Cancer Centre Singapore (NCCS). This study aims to re-examine the pharmaceutical needs of these patients and explore new model of care provision.

Methods

We performed a retrospective chart review of DRPs incidences detected over a year. Semi-structured interviews were conducted with patients receiving treatment in NCCS and have 3 or more chronic medications. Interviews were audio-recorded with consent and transcribed verbatim. Thematic analysis, in the context of grounded theory, was done using Quirkos (version 1.5.2) to analyse patient responses.

Results

A total of 383 charts were reviewed. Common DRPs detected included indication without drug, adverse drug reaction, non-adherence and potential drug interaction. Fifteen in-depth interviews were conducted. Patients' main concerns were side effects of chemotherapy and pre-existing medications, confusing administration schedule and pill burden. Informational needs regarding similar topics were often met but the demeanor of the pharmacist was crucial in building pharmacist-patient relationship. Face-to-face communication was preferred, but some were open to telepharmacy. The majority of them were satisfied with the current mode and standard of service delivered, citing convenience over privacy as an important factor.

Conclusions

The type of DRPs commonly encountered generally coincides with patient's concern. Pharmacists remain a valuable resource to help address and manage these problems. Determining patient's archetype may help to improve MTM service to meet patient's expectations.

eP233

FEASIBILITY AND RELIABILITY OF A SELF-ADMINISTERED DIGITAL ELECTRONIC TABLET-BASED GERIATRIC ASSESSMENT (GA) FOR OLDER ADULTS WITH CANCER IN A DEVELOPING COUNTRY

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Introduction

Conducting a GA is recommended for all older adults with cancer, but this might be difficult in low-and-middle income countries (LMIC) with limited resources. We evaluated the feasibility and reliability of a fully self-administered GA obtained using an electronic tablet among Mexican older adults with cancer.

Methods

Spanish-speaking patients aged ≥65 with a cancer diagnosis were included. The GA included validated tools measuring various geriatric domains, chemotherapy toxicity risk, and life expectancy (Table 1). Patients were randomly assigned into three arms: a) tablet GA twice; b) paper-and-pencil GA twice; and c) tablet GA followed by paper-and-pencil GA. We evaluated the feasibility and reliability of both methods and compared them among each other.

Table 1. Components of the Self-Administered Geriatric Assessment

Geriatric Domain	Tool
Instrumental and Basic Activities of Daily Living	VES-13
Falls	Number of Falls
Comorbidities	Abbreviated Charlson Comorbidity Index
Cognition	Self-administered Clock-Drawing Scale
Depression	5-item Geriatric Depression Scale
Nutritional status	Mini-Nutritional-Assessment Short Form
Social Support	Gijón Scale (3 questions)
Sensory impairment	Self-reported hearing/visual impairment
Polypharmacy	Number of medications
Chemotherapy Toxicity	Cancer and Aging Research Group Chemotherapy Toxicity Calculator
Geriatric Screening Tools	G8 tool
Life Expectancy	Suemoto Index

Results

150 patients (median age 73, range 65-91, 41% female) answered the GA at least once. 38% had ≤elementary school education, and 52% had gastrointestinal tumors. Median time to answer was 18.3 minutes (range 3.5-67.1), with no differences between tablet and paper-and-pencil (18 vs 19

minutes, p = 0.39). 68% completed the GA without help (77% tablet vs 59% paper-and-pencil, p<0.01). 76% thought the GA's length was appropriate, and 65% considered it easy to complete. The test-retest reliability for the entire assessment and for each of the included scales was high for both methods (Table 2).

Table 2. Test-retest reliability Spearman rank correlation coefficient

Scale/Tool/Domain	All patients	Group 1: Tablet twice	Group 2: Paper-and-pencil twice	Group 3: Tablet/Paper-and-pencil
Complete GA	0.91	0.92	0.88	0.93
VES 13	0.72	0.74	0.64	0.79
Falls	0.99	0.98	0.99	0.99
Charlson Comorbidity Index	0.93	0.96	0.88	0.97
Geriatric Depression Scale	0.74	0.79	0.70	0.72
Mini Nutritional Assessment	0.93	0.93	0.91	0.83
Social Support	0.79	0.79	0.77	0.83
Polypharmacy	0.93	0.95	0.90	0.94
CARG Chemotherapy Toxicity Calculator	0.96	0.96	0.97	0.97
G8 screening tool	0.95	0.95	0.94	0.96
Suemoto Index	0.93	0.94	0.90	0.95

Conclusions

A self-administered digital GA was feasible and reliable among older adults with cancer living in a LMIC. This methodology could improve the care of older patients with cancer in the developing world through the prompt and reliable identification of deficits and supportive care needs.

eP234

GERIATRIC ASSESSMENT PERFORMANCE IN COMMUNITY CANCER CENTERS: TRENDS, BARRIERS, AND RECOMMENDATIONS

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Introduction

Addressing the needs of older adults with cancer is critical for the delivery of high-quality, patient-centered care. The Association of Community Cancer Centers (ACCC) has identified barriers and best practices for serving this growing patient population in order to help support the multidisciplinary team in understanding and performing this type of care.

Methods

A online survey was administered to 332 cancer professionals of differing size and region. Three multidisciplinary, in-depth focus groups were conducted.

Results

95% of survey respondents agreed that their older adult patients would benefit from a comprehensive geriatric assessment (CGA), yet only 17% are performing CGAs. Top barriers to this were time/personnel and familiarity with validated tools. Techniques for evaluating fitness, cognitive status, psychological status, comorbidities, and toxicity risk were often informal. To evaluate psychological status or depression 55% use the NCCN distress thermometer, 36% the patient interview, and 34% ask the patient directly if they're depressed. >25% of respondents don't evaluate cognitive status at all, and 54% (top answer) ask simple questions to assess orientation. When abnormalities from CGA were identified, 83% noted referral to supportive services as the most common step, followed by discussing the results with patient/family and coordinating with appropriate specialties. Challenges with palliative care referrals were prevalent, with 68% reporting that patients don't understand the benefit, 55% saying it's occurring late in the treatment experience, and 40% claiming physicians don't understand the benefit.

Conclusions

ACCC has compiled resources to address deficits in care, particularly in the community or lower-resourced settings at accc-cancer.org/geriatric.

eP235

MANAGEMENT OF ANTICOAGULATION IN PATIENTS WITH METASTATIC CASTRATION-RESISTANT PROSTATE CANCER RECEIVING ABIRATERONE + PREDNISONE

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Introduction

Abiraterone is an effective agent used in the management of metastatic castration-resistant prostate cancer, significantly improving overall and progression free survival. Due to the pharmacodynamic and pharmacokinetic properties of abiraterone, concurrent use with anticoagulation may pose a challenge for clinicians. Thrombosis within the cancer setting continues to increase patient mortality therefore appropriate anticoagulation management can reduce adverse events and increase quality of life. Clinician guidance is needed on the safe and effective use of anticoagulants with abiraterone and prednisone.

Methods

A systematic review of the literature was preformed to identify relevant randomized controlled trials, meta-analyses and retrospective studies. Studies including oncology patients and an active intervention were considered relevant. Major society guidelines were reviewed to further aid in developing algorithms for the use of anticoagulants with abiraterone.

Results

Our review identified abiraterone can pose a challenge for patients receiving concurrent anticoagulation due to PK and PD interference. We describe the potential interactions between abiraterone and various anticoagulants, and provide management strategies based on the most recent literature for atrial fibrillation, venous thromboembolism and mechanical heart valves (Figures 1.0-3.0).

Conclusions

Abiraterone therapy has become a mainstay of the management of advanced prostate cancer, and is often used over prolonged years. In this review we summarize a framework of how to use abiraterone in men with

prostate cancer on anticoagulants. Evidence available to date suggests that patients with an indication for anticoagulation such as atrial fibrillation, VTE and mechanical heart-valves can be treated safely with abiraterone with appropriate monitoring.

eP236
INCIDENCE OF THROMBOEMBOLIC DISEASE IN A COHORT OF PATIENTS WITH SARCOMA

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Introduction
Thromboembolic disease is a frequent complication in cancer patients. However, the real incidence in patients with sarcoma is unknown. The aim of this study is to analyze the incidence of cancer-associated thrombosis in a cohort of ambulatory patients with sarcomas.

Methods
We performed a retrospective review of patients with sarcoma attended in the Medical Oncology Department of 6 hospitals from the network of Cancer & Thrombosis Working Group of the Spanish Society of Medical Oncology (SEOM). Between January 2012 and December 2016, two hundred and nineteen patients were identified and included in the analysis.

Results
Patients characteristics (Table 1). Median follow-up was 36 months (range 0-338). Thirty-five patients (16%) experienced thromboembolic disease (20 lower extremity deep-vein thrombosis (DVT), 2 upper extremity DVT, 3 catheter-associated thrombosis, 7 pulmonary embolism, 1 visceral vein thrombosis, 2 other locations). One patient experienced arterial thromboembolism. According to histology, the incidence was 11.8% in GIST patients, 15% in osteosarcomas, 5% in Ewing sarcomas or PNET and 18.4% in soft tissue sarcomas. None of the patients diagnosed of chondrosarcoma suffered VTE. 45.5% of patients were deemed to have incidental thromboembolisms. 40% of the events occurred at the time of diagnosis or within the first 6 months. Khorana's predictive model (Table 2). More than 50% of patient with VTE were considered low-risk based on Khorana score.

Table 1.

	All patients (n=219)
Median age (range)	50 (15-93)
Sex	
- Male —no. (%)	112 (51.1%)
- Female —no. (%)	107 (48.9%)
Race	
- Caucasian —no. (%)	205 (93.6%)
- Hispanic —no. (%)	12 (5.5%)
- Black —no. (%)	1 (0.5%)
- Asian —no. (%)	1 (0.5%)
Histology	
- GIST —no. (%)	17 (7.8%)
- Osteosarcoma —no. (%)	20 (9.1%)
- Chondrosarcoma —no. (%)	4 (1.8%)
- Ewing sarcoma or PNET —no. (%)	20 (9.1%)
- Soft tissue sarcoma —no. (%)	158 (72.1%)
Location	
- Upper limbs —no. (%)	11 (5%)
- Lower limbs —no. (%)	63 (28.8%)
- Trunk —no. (%)	24 (11%)
- Small intestine —no. (%)	10 (4.6%)
- Stomach —no. (%)	6 (2.7%)
- Others —no. (%)	52 (23.7%)
- Unknown —no. (%)	53 (24.2%)
Stage at diagnosis	
- I —no. (%)	35 (16%)
- II —no. (%)	31 (14.2%)
- III —no. (%)	78 (35.6%)
- IV —no. (%)	61 (27.9%)
- Unknown —no. (%)	14 (6.4%)
ECOG	
- 0-1 —no. (%)	189 (86.3%)
- ≥ 2 —no. (%)	21 (9.6%)
- Unknown —no. (%)	9 (4.1%)
Central venous catheter	
- Port-A-Cath —no. (%)	93 (42.5%)
- PICC —no. (%)	35 (16%)

Table 2.

Risk category	All patients n=160	VTE patients n=27
Low (0)	88 (55%)	14 (51.9%)
Intermediate (1-2)	67 (41.9%)	11 (40.7%)
High (≥ 3)	5 (3.1%)	2 (7.4%)

Conclusions
In the present study, the incidence of VTE in patients with sarcomas has been higher than expected. It would be desirable to increase the sample size and confirm this figure.

eP237
REAL WORLD DATA REGARDING MANAGEMENT OF CANCER ASSOCIATED THROMBOSIS (CAT)

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Introduction
Thrombosis is the 2nd cause of death in cancer patients. CAT is common, could delay anti-cancer therapy and increase costs. Oncologists should be aware of CAT and its clinical significance.

Methods
Prospective observational study conducted by HeSMO to record CAT clinical management. Patients with active cancer received antithrombotic agents for treatment or thromboprophylaxis were enrolled.

Results
546 patients enrolled. Primary cancers were: lung 24%, pancreas 13.4%, breast 8.8%, colorectal 8.1%, stomach 8.1%, ovarian 6.6% and other 39.1%. 120 received Low Molecular Weight Heparin (LMWH) for Venus ThomboEmbolism (VTE) treatment (Group A), 426 for thromboprophylaxis (Group B). *Group A:* 35% of 120 VTEs were diagnosed incidentally and treated as symptomatic [mean duration 5.51 months (SD+/-3.42)]. Recurrences occurred in 3 (2.5%) patients. Four (3%) grade 1 bleedings. *Group B:* 213 (50%) received LMWH at prophylactic doses while the rest received therapeutic doses [mean duration 4.42 months (SD +/- 2.68)]. 126 (30%) patients had Khorana score ≥3. Even though, 300 (70%) patients had Khorana score ≤2, 68% were metastatic and 58% were receiving high thrombotic chemotherapy agents. 16 (3.8%) patients experienced VTE while 9 (56%) of them were incidental. Notably, lower VTE risk [OR: 0.32 (95% CI 0.10, 1.0) p=0.04] was observed in patients on therapeutic doses LMWH while higher VTE risk [OR: 3,14 (1.01, 9.9)] was observed in patients on prophylactic doses LMWH. Six (1.4%) grade 1 bleedings.
Conclusions
Oncologists use LMWH for the CAT management. Incidental VTE is a common and insidious clinical entity. Therapeutic doses of LMWH for thromboprophylaxis are effective and safe.

eP238
CANCER-ASSOCIATED THROMBOTIC MICROANGIOPATHY IN A PATIENT WITH METASTATIC ESOPHAGEAL ADENOCARCINOMA

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Introduction
Thrombotic microangiopathy (TMA) syndromes are a group of diverse disorders with potentially life-threatening evolution.
Methods
We are reporting on a patient with a fatal case of cancer-associated thrombotic microangiopathy (CA-TMA).
Results
A 65-year-old female with metastatic esophageal adenocarcinoma to lymph nodes and liver, status post several lines of therapy, began noticing scleral icterus two weeks after a second dose of an icos agonist with a PD-1 inhibitor. Three days later she became hypotensive and hypoxemic, requiring admission to the hospital where initial exam confirmed jaundice and hepatomegaly, and labs showed normocytic anemia (hemoglobin 5.8), thrombocytopenia (platelets 39), elevated LDH (> 7000), indirect hyperbilirubinemia. Blood smear showed anisopoikilocytosis, many spherocytes and schistocytes, teardrop forms, nucleated RBCs, burr cells, bands, metamyelocytes; no blasts and no hypo or hypersegmented neutrophils were seen. These findings were consistent with TMA. The patient was unresponsive to treatment including 4 transfused units of blood, corticosteroids (methylprednisolone 1 mg/kg IV every 12 hours) and best supportive care. Her hemolytic process was relentless, and she developed severe hypoxemic respiratory failure, unresponsive to mechanical ventilation, succumbing five days after admission.
Conclusions
TMA is a disorder characterized by microvascular occlusion due to platelet aggregation, thrombocytopenia and organ damage. Thrombocytopenia, schistocytosis, and elevated levels of LDH are enough to form a diagnosis in clinical practice. The majority of cases are idiopathic, but several etiologies have been recognized, including cytotoxic chemotherapies. TMA may also be caused by the underlying malignancy itself. Clinicians should be aware of TMA due to its potentially lethal progression.

eP239
ANTICOAGULATION TREATMENT OF PATIENTS WITH CANCER AND VENOUS THROMBOEMBOLISM: 12-MONTH OUTCOMES OF THE SELECT-D TRIAL: SELECT-D PHASE 2 ON BEHALF OF THE SELECT-D COLLABORATIVE GROUP

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Introduction
The SELECT-D trial demonstrated greater efficacy but increased bleeding with rivaroxaban compared to dalteparin for the treatment of venous thromboembolism (VTE) in cancer patients, at 6 months. Uncertainty remains around the optimal duration of anticoagulation in this population.
Methods
In Phase 2 of SELECT-D, after 6 months of trial treatment for VTE, patients with active cancer who had residual DVT (RDVT) or index pulmonary embolism (PE) were eligible for randomisation to a further 6 months of rivaroxaban or placebo. Patients with no RDVT stopped anticoagulation. The primary outcome was VTE recurrence at 12 months.
Results
406 patients were randomised into SELECT-D. The second randomisation closed due to futility to recruit after 92 patients had entered. Those patients tended to have a better performance and cancer status. VTE recurrence after 6 months from second randomisation was 14% (95% confidence interval [CI] 7-29%) with placeboand 4% (95% CI 1-16%) with (HR=0.32; 95% CI 0.06-1.58). The corresponding major and clinically-relevant non-major bleeding rates were 0% and 0% with placebo; and 5% (95% CI 1-18%) and 4% (95% CI 1-17%) with rivaroxaban, respectively. None of the patients with no RDVT at 6 months had a recurrent VTE. For all trial patients, disease stage, ECOG performance status and site of primary tumour (all p<0.0001) were significant predictors of overall survival within 12 months.
Conclusions
Clinicians, alongside patients, should consider 12 months of anticoagulation for people with active cancer and VTE, on an individual basis.

eP240
THERAPEUTIC EFFECT OF RAPAMYCIN ON RADIATIONAL ORAL MUCOSITIS

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Introduction
Radiation-induced oral mucositis occurs frequently in patients with nasopharyngeal carcinoma during radiotherapy. The effect of rapamycin on radiation-induced oral mucositis were evaluated.
Methods
61 patients with NPC were randomly divided into two groups. Pain incidence, radioactive oral mucositis incidence, xerostomia incidence and dysphagia incidence were recorded and compared. We test if rapamycin could decreases serum proinflammatory cytokines (interleukin-6) levels and lead to nasopharyngeal tumors and lymph nodes subsided. In addition, we also evaluate adverse events in two groups.
Results
Tumor stage, age and gender between two groups did not statistical significance (P>0.05). The overall pain degree in testing group was lighter than that in control group (P=0.046). The severe pain incidence in testing group was significantly lower than that in control

group (P=0.045). Meanwhile, the radiation dose of moderate pain and severe pain in testing group was higher than that in control group (0.045). The mucositis (grade III and IV) incidence in testing group was significant lower than that in control group (P=0.008). Meanwhile, the radiation dose of mucositis (grade III) in testing group was higher than that in control group. Dysphagia (grade I) incidence in testing group was lower than that in control group (P=0.01). However, we could not retrieve the significant differences in xerostomia incidence (and related radiation dose), IL-6 difference, T lymphocyte absolute counting, blood platelet, white blood cell, hemoglobin, the regression of nasopharyngeal oncology and enlargement lymph nodes between two groups.

Conclusions

Rapamycin could decrease oral mucositis (grade III and IV) and severe oral pain incidence during radiotherapy.

eP241

PROPHYLACTIC AND THERAPEUTIC EFFECTS OF HONEY ON RADIOCHEMOTHERAPY-INDUCED MUCOSITIS: A META-ANALYSIS OF RANDOMIZED CONTROLLED TRIALS

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Introduction

Oral mucositis is a common side effect caused by radiochemotherapy and may adversely affect the quality of life (QoL) of patients. Honey may reduce the grade of mucositis in patients. We conducted a meta-analysis of randomized controlled trials (RCTs) to evaluate the prophylactic and therapeutic effects of honey on radiochemotherapy-induced oral mucositis.

Methods

PubMed, Embase, CINAHL, and Cochrane Library databases were searched for RCTs. The primary outcome includes the grade of mucositis and pain score. Secondary outcomes included the recovery time and QoL. The study was registered with PROSPERO, number CRD42018108486.

Results

Nineteen RCTs including 1276 patients were reviewed. The use of honey for prophylaxis and treatment significantly reduced the severity of mucositis. In prophylaxis phase, the result significantly favored the honey-treated group with regard to preventing the development of intolerable mucositis (RR=0.18, 95% CI=0.09 to 0.41). Patients treated with honey had a significant reduction in pain scores at month 1 (WMD = −3.25, 95% CI −4.41 to −2.09) and at the end of treatment (WMD = −2.32, 95% CI = −4.47 to −0.18).

Conclusions

The use of honey could prevent and result in more effective healing of mucositis in patients who underwent radiochemotherapy. Treatment with honey significantly reduced the grade of mucositis and resulted in a more painless healing process with a shorter recovery duration. Moreover, honey is a relatively cheap and easily available product. Therefore, we recommend the use of honey during and after radiochemotherapy to prevent and treat mucositis.

eP242

THE EFFECT OF ORAL CRYOTHERAPY ON CHEMOTHERAPY- INDUCED ORAL MUCOSITIS IN PATIENTS UNDERGOING AUTOLOGOUS TRANSPLANTATION OF BLOOD STEM CELLS

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Introduction

Oral mucositis is one of the annoying side effects of chemotherapy in patients undergoing bone marrow transplantation. Up to now, the common methods of oral mucositis therapy have failed to show a significant effect.

Methods

In this single blinded randomized clinical trial, 29 patients undergoing stem cell transplantation in Iran were selected by convenience sampling and randomly allocated to control (n=13) and intervention group (n=16). In the intervention group, cryotherapy was applied while control group received the normal saline mouthwash. The severity of mucositis and neutrophils rate investigated in five periods based on the World Health Organization (WHO) scales. Data were analyzed by descriptive and inferential statistics, using the SPSS 13.

Results

In both groups, mucositis reached its peak intensity in 7th day and the least intensity obtained up to 21st day. The neutrophils rate reached the minimum value in 7th day, then increased to 21st day. The two groups showed no significant difference between mucositis severity in 14th and 12th days (p=0.164), while the severity of mucositis in cryotherapy group was significantly less than saline mouthwash (1.81<2.54 and 0.13<0.92, respectively) at 7th and 14th days (p<0.05). There was no significant difference in neutrophils rate between groups.

Conclusions

Cryotherapy is more effective than saline mouthwash in reducing the severity of mucositis. This method is recommended for prevention of mucositis in bone marrow transplantation.

eP243

OZONE THERAPY FOR THE TREATMENT OF HSCT-INDUCED ORAL MUCOSITIS: A PRELIMINARY CONTROLLED STUDY

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Introduction

Ozone therapy can be defined as a versatile bio-oxidative therapy with immunostimulant, analgesic and antimicrobial properties.

Methods

Patients from 20 to 65 years of age that underwent stem cell transplantation and presenting OM grade 3 or more during the hospitalization were eligible for this study.

Oral mucositis grade was scored according the Common Toxicity Criteria Scale of the WHO. Lesions were classified as Grade 0 = none; Grade 1=soreness and erythema; Grade 2=erythema and ulcers without difficulties in swallowing solid food; Grade 3= ulcers requiring only a liquid diet and Grade 4= introduction of parental nutrition.

Pain was evaluated at the same timing of OM scoring through the Visual Analogue Scale (VAS) where 0 indicates no pain and 10 indicates severe pain.

Patients were treated with ozone therapy (Ozone DTA- Sweden & Martina) for 5 consecutive days, from the onset of OM. Patients were monitored and evaluated 5 and 7 days after the first application of ozone therapy. The same clinician performed OM scoring and pain evaluation on day 1 (before the beginning ozone therapy-**T0**), on day 5 (after finishing ozone therapy-**T1**) and on day 7 (**T2**) as a follow up.

Results

8 patients were included in the study; all patients already demonstrated pain improvement from day 5 (T1) after the first application of ozone therapy; the OM grading significantly reduced both at T1 and T2 and erythema significantly improved in size and discomfort.

TIMINIG	T0 Day 1		T1 Day 5		T2 Day 7	
	GRADE*	VAS**	GRADE*	VAS**	GRADE*	VAS**
PT 1	4	9	1	1	0	0
PT 2	4	9	1	1	1	1
PT 3	3	8	1	1	0	0
PT 4	4	9	1	1	1	1
PT 5	3	8	0	0	0	0
PT 6	4	9	1	1	1	1
PT 7	4	8	1	1	0	0
PT 8	4	9	1	1	1	1

Conclusions

Ozone therapy can be effective in reducing pain and OM grading of HSCT- induced oral mucositis.

eP244

KAMPO MEDICINE (ORENGEDOKUTO) IMPROVES STOOL CONSISTENCY IN A MOUSE MODEL OF MUCOSITIS

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Introduction

Mucositis is a debilitating side-effect of chemotherapy administered for cancer treatment. Currently there is no truly effective mucositis treatment and patients often terminate chemotherapy to facilitate repair of the damaged mucosa, Anecdotal evidence suggests that the herbal medicine Orengedokuto reduces the incidence of chemotherapy-induced diarrhoea, highlighting a potential preventative effect. This study aimed to investigate the effect of Orengedokuto in a mouse model of mucositis.

Methods

Female BALB/c mice (8 weeks) were injected (intraperitoneal; day 0) with saline or 5-Fluorouracil (5-FU). Mice (n=10/group) were gavaged daily with water (160μL) or Orengedokuto (80μl at 0.5mg/kg; or 160μl at 1g/kg). Bodyweight and disease activity index (DAI) were measured daily. Behavioural analyses (facial grimace/burrowing) were conducted on days -1 and 3. Mice were euthanized on day 4 and intestinal samples collected for histological analysis. $p<0.05$ was considered statistically significant.

Results

5-FU significantly increased DAI (days 3-4), stool-consistency (days 3-4) and real-time facial grimace and reduced burrowing activity (day 3) compared to normal control ($p<0.05$). Additionally, thymus weight and jejunal-ileal length decreased, while colon weight and crypt depth increased, compared to normal control ($p<0.05$). Importantly, 1g/kg Orengedokuto improved stool consistency compared to 5-FU treated control (days 3-4; $p<0.05$) and 0.5g/kg Orengedokuto (day 3; $p<0.05$). Orengedokuto did not impact other indicators of mucositis.

Conclusions

1g/kg Orengedokuto improved stool consistency in mice with 5-FU-induced mucositis; however other indicators of mucositis severity were not significantly impacted. Future studies should consider higher Orengedokuto doses and modified administration protocols to fully explore its potential to alleviate mucositis symptoms.

eP245

EFFICACY OF A MUCOADHESIVE HYDROGEL (MUGARD ®) IN PATIENTS WITH HIGH RISK OF ORAL MUCOSITIS DURING CYTOTOXIC CHEMOTHERAPY: A MULTICENTER, DOUBLE-BLIND, RANDOMIZED PHASE III TRIAL

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Introduction

Oral mucositis is a common, painful side effect of chemotherapy. The objective of trial was to evaluate the preventive effect of mucoadhesive hydrogel (MuGard) on the development of oral mucositis in the patients who had oral mucositis during previous chemotherapy.

Methods

In conventional multi-institutional, double-blind, randomized, placebo-controlled group, phase III study, we enrolled patients who had a World Health Organization (WHO) grade 2 or higher oral mucositis in previous cycle chemotherapy were randomized to receive either MuGard or saline during chemotherapy. Subjects completed the validated Oral Mucositis Daily Questionnaire. Weight, opiate use, and WHO oral mucositis scores were recorded. Subjects who dosed at least once daily during the first 2 weeks of chemotherapy were included in the efficacy analysis.

Results

Of 49 patients enrolled. 38 patents (control, N = 18; Mugard, N= 20) were eligible for efficacy analysis. Recurrent rate of Mucositis grade ≥ 2 was 2 patients (11.1%) for control versus 5 patients (25.0%) for MuGard ($p=0.270$). Time to first occurrence of Mucositis grade > 2 was 4 days for control versus 7 days MuGard ($p = 0.291$). No significant adverse events were reported and the incidence of adverse events was not different between the MuGard group and the control saline group.

Conclusions

Although not statistically significant compared to saline, Mugard appears to have the effect of delaying the occurrence of severely graded (> 2) Mucositis when used in patients with a previous WHO grade 2 or higher mucositis.

eP246

A RANDOMISED-CONTROLLED TRIAL OF THE USE OF MANUAL AND POWERED TOOTH BRUSHING TECHNIQUES IN HAEMATOPOIETIC STEM CELL TRANSPLANTATION RECIPIENTS.

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Introduction
Basic oral care is the most common recommendation for managing oral mucositis (OM) in autologous hemaotopoietic stem cell transplantation (ASCT) patients. The MASCC guidelines suggest the use of a soft manual toothbrush. In a healthy population, powered toothbrushes have reported benefits in plaque removal and gingivitis reduction. It is unknown whether the use of an powered toothbrush has similar benefits in patients with OM.
Objectives To compare a manual and an powered toothbrush (MT and PT) when used by patients undergoing ASCT, regarding the removal of plaque, severity of OM and patients compliance.
Methods
A RCT with two groups (n=23 MT, n=23 PT) was conducted in ASCT patients. During the hospitalization period, OM, plaque and patient compliance were scored daily.
Results
No differences were seen in OM and plaque scores between both groups (OM p=0.430; 95% CI: [-1.09, 0.46] and plaque p=0.812; 95% CI: [-5.62, 4.40]). A significant positive correlation between plaque scores and OM was observed (R2=0.154, p=0.010 and 95% CI [0.04, 0.27]). There was no difference in patient compliance between both groups. Patients complied to the protocol to brush their teeth, but did not brush 4 times a day as recommended.
Conclusions
There was no significant differences in the removal of plaque, incidence and severity of OM between the MT and PT and compliance with both techniques was similar. Therefore, it is recommended to update the guidelines managing OM in respect to the brushing technique.

eP247
TARGETED ALLELIC SEQUENCING VALIDATION OF CONDITIONING THERAPY-INDUCED ORAL MUCOSITIS-ASSOCIATED SINGLE NUCLEOTIDE POLYMORPHISMS (SNPS) IDENTIFIED BY EXOME SEQUENCING

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Introduction
Oral mucositis (OM) is a common dose-limiting side effect of conditioning therapy for patients with hematologic cancer undergoing hematopoietic stem cell transplant (HSCT). Using exome sequencing in a pilot study, we have previously identified nine genes with SNPs associated with OM in HSCT patients. Our objective was to validate the candidate SNPs using targeted allelic sequencing.
Methods
Saliva DNA from HSCT patients (n=63), that was previously analyzed by whole genome exome sequencing, was subjected to targeted allelic sequencing for nine candidate genes. Sequencing was performed by llumina HiSeq TruSeq paired-end sequencing of PCR amplicons of the targeted regions. SNPs/INDELS were identified using basic variant detection model within CLC Genomics Server software v9.0.1.
Results
Of the nine genes, LAMC1, had 8 SNP locations which were either all heterozygous or homozygous for 56 out of the 63 patients. The full homozygote variant genotype was overrepresented in patients with OM WHO score 1-4. While targeted allelic sequencing confirmed the genotypes for the 56 patients, of the 16 ambiguous SNP locations for remaining seven patients, 11 were corrected per conserved pattern. Indeed, one patient (WHO score=1), who had 5 ambiguous SNP locations in LAMC1, was confirmed having the full homozygote variant genotype. While SNP correction was related to low DNA concentration, non-correction was associated with lower DNA quality. Overall accuracy for the 9 genes, including 13 corrections, was 99.3%.
Conclusions
Targeted allelic sequencing is an effective approach for confirming select SNPs prior to engaging into large sample size investigation of SNPs associated with OM in HSCT patients.

eP248
RECOMMENDATION FOR AN ORAL MUCOSA CONTOURING METHOD IN NASOPHARYNGEAL CARCINOMA PATIENTS RECEIVING TOMOTHERAPY

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Introduction
Tomotherapy (TOMO) has shown promising dosimetric advantages in treatment of nasopharyngeal carcinoma (NPC), however, radiation-induced oral mucositis (ROM) is common seen during treatment period. This study is aim to evaluate two oral mucosa contouring methods (oral cavity contour, OCC and mucosa surface contour, MSC) in NPC patients receiving TOMO and find a reasonable method for oral mucosa by using TOMO technique.
Methods
A total of 125 AJCC 7th stage II-IVB NPCs receiving TOMO from our center were included. OCC and MSC were applied to radiation treatment plans. ROM were prospectively assessed weekly. Absolute DVH data was exported from RayStation V3.0 system. T-test, logistic regression and ROC curve were used to analyses.
Results
Morbidity of ≥3 grade acute ROM was 34.4%. A significant relationship between oral mucosa related dosimetric parameters and ≥3 grade ROM were found by using both methods in univariate analysis: V10, V15, V45, V55, V60, V65, V70 of OCC and V55, V60, V65, mean dose of MSC were relevant factors for≥3 grade ROM (Vx, percentage volume of organ received more than x Gy, all P 0.05). In multivariate analyses, gender was found related to ≥3 grade ROM (P=0.037 and 0.027 for OCC and MSC). Only V60 of MSC were independent dosimetric parameter related to ≥3 grade ROM (P =0.006), cut-off value was 4.23%, AUC was 0.637 (P =0.012) with sensitivity and specificity of 0.442 and 0.793.
Conclusions
We recommend MSC as a more reasonable method for oral mucosa in tomotherapy treatment plan for nasopharyngeal carcinoma patients.

eP249
FEASIBILITY STUDY OF ORAL COOLING SYSTEM(COORAL®) FOR ORAL MUCOSITIS IN PATIENTS RECEIVING CHEMOTHERAPY

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Introduction
Oral mucositis (OM) as adverse event of chemotherapy often interfere with food intake and result in weight loss and worsen quality of life. Oral cooling system (Cooral® BrainCool AB) is a new device that is to reduce the temperature of the mouth. We aimed to evaluate the feasibility of oral cooling system for oral mucositis in patients receiving chemotherapy.
Methods
Eligible patients had solid tumor and received alkylating agents, platinum, anthracycline, antimetabolite, or taxanes for out patients. All patients provided written informed consent before enrollment. Cooling begins 30 minutes before the start of chemotherapy. Cooling continues until 30 minutes after the termination of the cytostatic infusion. During treatment the patient may if necessary take out the component and replace it again, for a maximum of 10 minutes. Following each cooling session a questionnaire, specifically developed for the study to assess feasibility, was completed. Primary endpoint is feasibility.
Results
A total of 4 patients were enrolled. Median age is 55.5 (range 52-71). Three of those completed the full cooling time. One patient extended time of taking out for failure of the machine. Two patients felt unfit of mouthpiece and slobber. One patient felt senseless, although no patient was cool. One patient made OM of grade1 on day2 due to mouthpiece. It healed next day. Two patients did not develop in a taste disorder and gingivitis that developed before.
Conclusions
Oral cooling system is well tolerated. The next step will be to evaluate oral cooling system in a randomized clinical to establish its efficacy of preventing OM.

eP250
CHARACTERIZATION OF THE ORAL SHEDDING OF HERPESVIRIDAE FAMILY IN ADULT PATIENTS SUBMITTED TO ALLOGENEIC HEMATOPOIETIC STEM CELLS TRANSPLANTATION AND ITS RELATION WITH ORAL MUCOSITIS

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Introduction
The role of virus in the pathogenesis of oral mucositis (OM), either in its severity or as a triggering factor, in patient submitted to allogeneic hematopoietic stem cell transplantation (alloHSCT), has been timidly investigated in the last decades.
Methods
The present study evaluated through the PCR and enzymatic digestion the oral excretion of *Herpesviridae* family in 32 adult patients submitted to alloHSCT (12 patients who developed OM and 20 patients who did not develop OM) pre, during and post-transplant. The samples were collected from the oral mucosa, supragingival and subgingival area at five moments of clinical follow-up, adding two more samples in patients who developed ulcerative OM, at beginning and at resolution of the lesion.
Results
By the moment that the samples were collected the detection of HSV-1, HHV-6A, HHV-6B, CMV, EBV and HHV-7 was observed in 4,34%, 4,34%, 5,53%, 6,32%, 19,36% and 43,08% in the group without OM and 3,84%, 0%, 1,7%, 2,13%, 18,8% and 71,79% in the group with OM, respectively. A qualitative analysis showed a lower presence in the subgingival site. The oral shedding of HHV-7 was significantly higher in group with OM. In most cases, the positive samples for EBV and CMV in the oral shedding were detected earlier than in the serologic samples. Six patients had positive samples for HHV-6B and 5 of them died because of the relapse of the disease or due to complications inherent to alloHSCT.
Conclusions
These findings suggest that the presence of HHV-6B is a negative prognostic factor for patients submitted to alloHSCT.

eP251
ORAL MUCOSITIS IN HEMATOPOIETIC STEM CELL TRANSPLANTATION: INCIDENCE AND PATIENT COMPLIANCE WITH THE PREVENTION

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Introduction
Oral mucositis (OM) is a common side effect of hematopoietic stem cell transplantation (HSCT). This study aimed to determine the incidence and severity of OM in patients who underwent different types of HSCT in a single Australian center.
Methods
Patients who underwent HSCT were consecutively included. Daily OM grade was recorded by the nurses using WHO scale. Patients were asked to retrospectively grade their OM severity on their hospital discharges (nil, mild, moderate or severe). They were also asked whether they had used cryotherapy and mouthwashes. Prior to HSCT, all patients received OM education and encouraged to use mouthwashes. They were routinely offered cryotherapy if they received melphalan.
Results
In total 57 patients were included (allogeneic N=47, autologous N=10). 89% developed OM according to WHO score. Grade 3-4 OM was seen in 35% (40% with allogeneic vs 10% with autologous). Self-reported OM incidence was 56% (39% moderate to severe). When comparing commonly used different conditioning regimens, OM incidence and severity were 100% (80 % grade 3-4) with cyclophosphamide/TBI myeloabrative regimen, 96% (38% grade 3-4) with fludarabine/melphalan reduced intensity regimen, and 88% (0% grade 3-4) with high dose melphalan autologous regimen. All except one patient used cryotherapy with melphalan. Mouthwashes were used by all patients except one.
Conclusions
Despite a good compliance with oral care and cryotherapy, OM is a significant complication of HSCT. The incidence and severity were higher in allogeneic HSCT vs autologous, and myeloablative Cyclophosphamide/ TBI vs reduced intensity fludarabine/ melphalan.

eP252
PHOTOBIOMODULATION MODULATES OXIDATIVE STRESS IN VITRO AND IN VIVO IN CANCER PATIENTS SUFFERING FROM ORAL MUCOSITIS

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Introduction
Photobiomodulation (PBM) is emerging as an effective strategy for the management of oral mucositis (OM) in cancer patients, a condition where reactive oxygen species (ROS) play a relevant role. Here we report the results of a clinical and experimental study, aimed at evaluating the effect of PBM at different wavelengths on oxidative stress.

Methods
The study was approved by the local ethical committee. A diode laser device was employed. 10 patients affected by OM meeting inclusion/exclusion criteria were enrolled and underwent 4 daily PBM sessions (970nm) when clinical parameters were recorded and saliva samples were obtained for total oxidant status (TOS) measurement. In parallel, oxidative stress following 5-fluorouracil or H_2O_2 and different PBM protocols applied individually or in combination (660, 800 and/or 970nm) was evaluated in vitro in neutrophils and keratinocytes. In addition, we used a roGFP2-Orp1 genetically-encoded sensor to monitor in real-time oxidative status changes in living keratinocytes in response to oxidative stress and different PBM protocols.
Results
While 970nm PBM was effective in treating OM, salivary TOS levels significantly decreased after each PBM session ($p<0,01$) but increased again after 24h (Figure1). This transient antioxidant effect was confirmed in vitro in both cell types. In contrast, 660nm increased ROS production. The most marked reduction in ROS levels, particularly evident in real-time imaging, was detected in cells exposed to the 800nm laser light individually or to the combination of the three wavelengths.
Conclusions
Our study showed how various wavelengths differentially modulate ROS production and prompts the validation of a multi-wavelength protocol in clinical settings.

eP253
USE OF OPIOIDS AND ITS IMPACT ON QUALITY OF LIFE IN CHEMOTHERAPY INDUCED ORAL MUCOSITIS: A PROSPECTIVE OBSERVATIONAL STUDY

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Introduction
Oral mucositis, a progressive, inflammatory, and ulcerative condition of the mucous membranes and it is one of the common side effects of cancer treatment. Primary objective of this study to was to evaluate requirement of opioids for chemotherapy induced oral mucositis
Methods
It was a prospective, non-interventional single -centre observational study. The cancer patients who had developed chemotherapy induced mucositis requiring intravenous opioid requirement for symptom control were included in the study. Oral mucositis with the WHO oral mucositis grading, pain, the performance status, opioid requirement and quality of life using EORTC QOL- C30 questionnaires were assessed. Chemotherapy received were also noted. Patients were followed up for 7 days after initiation of intravenous opioid administration
Results
Total 100 patients were included in the study. 61% patients were male. Mean performance status of the patients with KPS scale was 57%.. Average gap of development of mucositis and last dose of chemotherapy was 6.7 days. 84% of the patients were managed with IV morphine administration initially. As the time passes eventually total 93% patients required morphine administration for symptom control. Mean intravenous morphine consumption was 26 mg in 1stday of presentation. Median WHO grading of mucositis was 3.Global health status, physical functioning, role functioning, emotional functioning, cognitive functioning and social functioning were improved on day 7 in comparison to day 1.
Conclusions
Chemotherapy induced mucositis often require strong opioids like morphine administration for symptom control. Initial intravenous morphine consumption can be as high as 26 mg per day.

eP254
A STUDY ON CASES OF ORAL MUCOSITIS DUE TO THE ADMINISTRATION OF IMMUNE CHECKPOINT INHIBITORS

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Introduction
Immune checkpoint inhibitors, such as nivolumab, are drugs that inhibit immunosuppressive activities of tumor cells, thereby enhancing immunity to tumors. The indications have been rapidly expanded in recent years, increasing the number of cases treated with these drugs. Currently, there are only a few reports of oral adverse events associated with the use of immune checkpoint inhibitors. We herein present our experiences with 6 cases of oral mucositis, which appeared to be an irAE induced by the anti-PD-1 antibody nivolumab.
Methods
Among cases treated with drugs including immune checkpoint inhibitors between 2016 and 2018, 6 cases were retrospectively reviewed; these cases were referred to a dentist who subsequently confirmed them to be oral mucositis.
Results
The 6 patients with oral mucositis included 1 man and 5 women aged between 41 and 68 years. Their primary diseases were pancreatic, colorectal, lung (2 patients), tongue, and uterine cancers. The time interval between the start of treatment and the onset of mucositis ranged from 4 months to 22 months. The majority of the cases were characterized by lacy or granular white patches, suggesting that the lesion of mucositis often appears similar to that of lichen planus, which is an autoimmune disease.
Conclusions
Although infrequent, oral mucositis resulting from the use of immune checkpoint inhibitors is difficult to diagnose and may cause negative effects such as interfering with oral intake. With immune checkpoint inhibitors, oral mucositis may develop as an adverse event, warranting close monitoring of the oral condition during the treatment period.

eP255
HIGH POTENCY POLYMERIZED CROSS-LINKED SUCRALFATE (HPPCLS, PROTHELIAL) FOR NCCN CATEGORY 2A EVALUATION TO PREVENT AND RAPIDLY ELIMINATE CHEMORADIATION TOXIC MUCOSITIS

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Introduction
Background: The Agency for Healthcare Research and Quality (AHRQ) has established a national program operating need for an effective antidote and/or preventative for chemoradiation toxic mucositis (CRTM).
Aim: Ascertain quality of clinical evidence justifying academic consideration of HPPCLS as a NCCN Category 2A recommendation for CRTM.
Methods
Review and assess the quality of HPPCLS clinical data using (a) the Risk of Bias In Non-randomized Studies of Interventions (ROBINS-I) tool for assessing bias, (b) the rating criteria of the Grading Recommendation, Assessment, Development and Evaluation (GRADE) Working Group, and (c) the NCCN Evidence Block value index of HPPCLS for impact on CRTM quality of life (QOL) and existing CRTM actuarial costs.

Results
(1) HPPCLS Mucositis Registry Study had a low risk of bias in all three domains of the ROBINS-I tool. (2) Based on statistical assessment of HPPCLS data using GRADE criteria, HPPCLS should be classified as a Grade 1A/1B intervention for prevention and rapid sustained elimination of CRTM. (3) Positive impact on both QOL and CRTM's actuarial costs suggests a favorable NCCN evidence block index value for HPPCLS.
Conclusions
These findings support health economic clinical research initiatives to explore the suitability of HPPCLS as a NCCN Category 2A recommended antidote for treating CRTM resulting from treatment of head and neck cancer (HNC) and for managing gastrointestinal mucositis. By integrating outcome-specific, minimally disruptive HPPCLS protocols into daily oncology practice, sufficient data could be generated to form a multi-institutional consensus on the clinical utility of HPPCLS.

eP256
DEVELOPMENT OF A SOFT ORAL MUCOSAL LINING DEVICE TO ENHANCE THE RETENTION OF TOPICAL TREATMENTS FOR ORAL MUCOSITIS

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Introduction
Oral mucositis (OM) is a serious complication of systemic chemotherapy. Few treatments for OM are currently recommended. Viscous lidocaine is commonly combined with other ingredients (Magic Mouthwash), but has a short duration of action and lacks validated studies. Oral topical therapies for OM are diluted by saliva and removed from the oral cavity by swallowing. This limits their resonance within the oral cavity, lowering effectiveness.
Methods
Our group has developed a soft device (BocaLiner™) constructed of silicone rubber that is held in the mouth together with topical gels, mouthwashes and rinse treatments for OM. The device has a fitting portion corresponding to the dental arch, "wings" that cover portions of the buccal mucosa, alveolar arches and ostia of the parotid and submandibular glands, and soft bite flanges. Two designs were optimized for comfortable fitting in regular and petite mouths. Preliminary tests of the effect of the standard size device and the small size device for retention of oral topical alginate using the ETOH Retention Test were performed. Duration of oral numbing from 2% viscous lidocaine was also measured.
Results
Mean retention of topical alginate increased from 12 to 23.5 minutes and mean measurable area under the curve increased from 0.931 to 1.78 units/minute using the devices (Figures 1 and 2). Increased duration of oral numbness from topical lidocaine was also noted.

Figure 1
Quantitation of Topical Alginate Gel in the Oral Cavity Using the ETOH Retention Test
Normal Subject with Standard Size Device

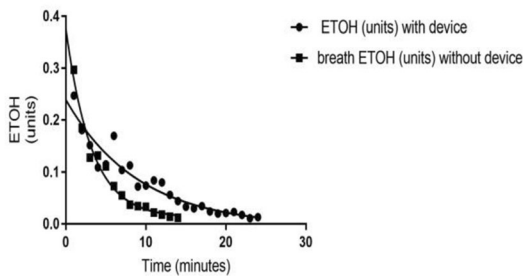
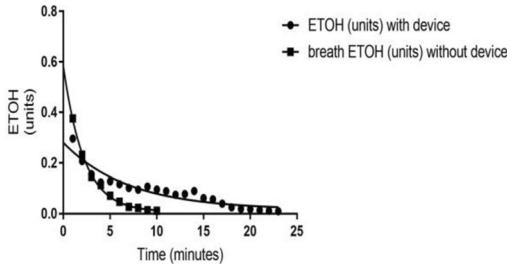


Figure 2
Quantitation of Topical Alginate Gel in the Oral Cavity Using the ETOH Retention Test
Petite Subject with Small Size Device



Conclusions
A novel device has been developed to enhance the retention of topical agents for OM. This represents a simple, low cost addition to therapies for OM.

eP257
EVALUATION OF LOW LEVEL LASER / PHOTOBIOMODULATION FOR CANCER THERAPY-INDUCED MUCOSITIS AS A POTENTIAL STIMULATION OF TUMOR GROWTH IN HEAD/NECK CANCER PATIENTS: A RETROSPECTIVE ANALYSIS

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Introduction
Photobiomodulation (PBM) is efficacious for the management of cancer therapy-induced mucositis and it is part of practice guidelines. However, the safety of PBM, regarding a detrimental role on tumor growth, has been raised.
Methods
We reviewed the charts of 361 patients who had been treated at the IJB between 2005 and 2009 and evaluated their overall survival (OS), time to local recurrence (TLR) and progression-free survival (PFS). Patients who received PBM (62%) were treated with an energy density of 2-3 J/cm^2, applied 3 times daily in accordance with recent recommendations. Radiation therapy consisted of IMRT in all patients; 39% received concomitant chemotherapy.
Results
The staging of the tumor (TNM) and clinical characteristics were roughly comparable between the 2 study groups. There was no statistical evidence for a difference in OS (p=0.86); the 5-year OS being 48% and 50% in those with or without PBM. TLR was not different in the 2 groups (p=0.52) neither the PFS (p=0.49); the 5-year PFS was 41% and 35%, with or without PBM. Adjusting the comparisons in multivariate analysis for 10 clinical and therapeutic characteristics, there was no statistical evidence that PBM was related to decreased OS, TLR or PFS.
Conclusions
We did not detect any statistically significant impact for PBM for cancer therapy-induced oral mucositis on OS, LTR or PFS in patients with head/neck cancer. From this however retrospective study, we do not document any argument against the use of PBM for the management or oral mucositis in such patients.

eP258
VITAMIN C BUT NOT VITAMIN B2 AMELIORATES MUCOSITIS SYMPTOMS ON THE METHOTREXATE-INDUCED MUCOSITIS RAT MODEL

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Introduction
Mucositis, a side-effect of chemotherapy treatment, induces alterations in the composition of the gut microbiota. The redox active compounds vitamins B2 and C have been shown to reduce inflammation and to enhance the growth of anaerobes in the gut. We therefore aimed to 1) validate the ability of these vitamins to promote bacterial cell growth *in vitro*, and 2) determine their prophylactic efficacy in a rat model of mucositis.
Methods
Bacterial growth curves were performed to assess the growth kinetics of bacteria exposed to vitamins C/B2 (0.5mM). Male wistar rats (150-200g) were received vitamins B2 (2,6 or 12mg/day) and C (50mg/day) via daily oral gavage (from day -1 to day 10). MTX (45mg/Kg) was administrated via I.V. injection (n=4-8/group) on day 0. Body weight, water/food consumption and diarrhea were assessed daily. Blood and faecal samples were collected longitudinally to assess citrulline levels and gut microbiota composition.
Results
Vitamins C/B2 enhanced the growth of anaerobic bacteria *Blautia coccoides* and *Roseburia intestinalis* ($p<0.001$). *In vivo* administration of vitamin C significantly attenuated clinical symptoms of mucositis, decreasing MTX-induced weight loss and promoting food consumption ($p<0.05$). Vitamin B2 was surprisingly detrimental to MTX-treated animals. Neither vitamin was able to attenuate the decreasing in plasma citrulline and the changes in the composition of the gut microbiota.
Conclusions
Vitamins B2 and C enhanced anaerobic bacterial growth *in vitro*, however their ability to mitigate MTX-induced mucositis was limited. Further *in vitro* studies should be performed to understand the effect of vitamins on the mechanisms of mucosal injury.

eP259
ORAL MUCOSITIS–RELATED NEUROPATHIC PAIN IN HEAD AND NECK CANCER PATIENTS RECEIVING RADIOTHERAPY OR CHEMORADIOTHERAPY

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Introduction
Painful oral mucositis (OM) is a debilitating complication in Head and Neck Cancer (HNC) patients receiving RadioTherapy(RT)/ChemoRadioTherapy(CRT). Therapy-induced pain can be nociceptive and/or neuropathic. Neuropathic pain (NP) in HNC patients often remains underdiagnosed and undertreated. The Douleur Neuropathique 4 questionnaire (DN4q) is validated for NP diagnosis. This study's purpose was to identify the OM-induced NP.
Methods
Forty HNC patients were evaluated during RT/CRT. Patients completed a DN4q as soon as they reported moderate or severe pain on a 0-10 Numeric Rating Scale (NRS>4). Mucositis and xerostomia were assessed. Pain medication was also recorted.
Results
Twenty-six patients (mean age 63.54±13.96 years) with moderate/severe pain completed a DN4q (mean NRS score 7.46±1.42). Five patients (19.23%) had a positive for NP, DN4q score ≥4. The most common NP descriptor was "burning" (34.62%) followed by "electric shocks" (30.77%) and "pins-and-needles" (30.77%). Statistically significant ($p<0.05$) differences between positive and negative DN4q scores were observed for the "electric shocks", "tingling", "pins-and-needles" and "numbness" NP descriptors. Nine (34.62%) patients didn't report any NP descriptors. A direct correlation was observed between DN4q score and intensity of pain, mucositis and xerostomia ($p<0.02$). Pain medication was administered to fifteen (15/26, 57.69%) patients. Adjuvant medication for NP was administered to 1 (1/5, 20%) patient with positive DN4q score.
Conclusions
Oral mucositis induced NP was assessed for the first time during RT/CRT for HNC. Neuropathic pain was recorded in 5 patients with 1 of them receiving adjuvant NP medication. This study highlights the lack of adequate recognition and management of OM related NP.

eP260
DEVELOPING A RAT MODEL OF MELPHALAN-INDUCED MUCOSITIS FOR FUNDAMENTAL AND TRANSLATIONAL RESEARCH

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Introduction
Conditioning chemotherapy for the treatment of haematological malignancies is highly mucotoxic, resulting in severe diarrhea and associated complications. A major challenge in developing effective interventions is our incomplete understanding of the pathobiology of mucositis caused by these agents. This is particularly the case for melphalan-induced mucositis, for which there are no validated animal models. We therefore aimed to develop a rat model of melphalan-induced mucositis for fundamental and translational research efforts.

Methods
Male Wistar rats (8 weeks; 180-220 g) were administered 4, 5, 6 and 8 mg/kg melphalan (5 mg/ml) via i.v. injection (n=3-6/group). Body weight, diarrhea, food/water intake were assessed daily before all rats were euthanised on day 10. Blood was collected every second day for assessment of plasma citrulline (marker of small intestinal enterocyte mass).
Results
Melphalan caused mucositis at doses ≥5 mg/kg, indicated by clinical parameters of weight loss, diarrhea and reduced food/water intake. These effects were dose-dependent, with rats treated with 6 mg/kg and 8 mg/kg euthanised due to excessive toxicity. Clinical parameters occurred in a biphasic manner, with an initial episode of mucositis observed at day 4, followed by a second, less severe episode at day 7. In contrast, plasma citrulline decreased most significantly on day 2 and returned to baseline by day 6 and did not differ between doses.
Conclusions
5 mg/kg melphalan causes moderate, self-limiting mucositis. Disparities in the onset of clinical symptoms and dynamics of plasma citrulline suggest mechanisms unrelated to small intestinal atrophy contribute to melphalan-induced mucositis. Investigation of these mechanisms is therefore warranted.

eP261
ORAL DEXAMETHASONE IS ASSOCIATED WITH ORAL MUCOSITIS DURING ANTHRACYCLINE THERAPY: A RETROSPECTIVE COHORT STUDY

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Introduction
Oral mucositis is a common adverse effect of anthracyclines and can be a dose-limiting toxicity. Ulceration due to inflammatory cytokines is exacerbated by infection. Oral dexamethasone is frequently used as an antiemetic but may increase the risk of infection. We evaluated whether the use of oral dexamethasone is associated with the incidence of oral mucositis.
Methods
We conducted a retrospective cohort study using medical records of Kyoto University Hospital. In total, 170 breast cancer patients were treated with anthracycline combination chemotherapy (TAC [docetaxel + doxorubicin + cyclophosphamide], FEC [5-fluorouracil + epirubicin + cyclophosphamide], or AC [doxorubicin + cyclophosphamide]) from 2012 to 2017. We excluded patients who received oral cryotherapy from the first course. The primary endpoint was incidence of oral mucositis during anthracycline therapy (up to 3 weeks after last anthracycline administration). Dexamethasone users were defined as patients who took oral dexamethasone on the 2nd and 3rd day of each cycle. We assumed regimen and preceding chemotherapy as confounders and performed multivariate logistic regression analysis.
Results
Among 166 patients, oral mucositis developed in 33 of 99 dexamethasone users (33.3%) compared with10 of 67 non-users (17.2%). In univariate analysis, oral dexamethasone was significantly correlated with onset of oral mucositis (odds ratio [OR]: 2.85, 95% confidence intervals [CI]: 1.29 to 6.29). Multivariate analysis also showed significant correlation between oral dexamethasone and oral mucositis. (OR: 3.28, 95% CI: 1.32 to 8.19).
Conclusions
Oral dexamethasone during anthracycline combination therapy was associated with the development of oral mucositis.

eP262
FIRST STEP TO TREAT ORAL MUCOSITIS IN CANCER PATIENTS: THE PREVENTION. EFFECTIVENESS OF A SOLUTION CONTAINING VERBASCOSIDE, POLYVINYLPYRROLIDONE (PVP) AND SODIUM HYALURONATE

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Introduction
Oral mucositis (OM) is a common toxicity of cancer treatments. It results in the development of diffuse ulcerative lesions of the movable mucosa of the mouth and oropharynx, with consequent pain of such severity as to require opioid-level analgesics. A medical device containing Verbascoside, Polyvinylpyrrolidone, and Hyaluronic Acid (Mucosyte®) resulted effective for the treatment of OM. Thus, the aim of this study was to assess the efficacy of the device for the prevention.
Methods
Patients before undergoing chemotherapy, target therapies or immunotherapies for solid tumors were retrospectively enrolled in this study. We enrolled both patients treated with Mucosyte®(2 rinses/day) in prevention, and patients who where given only instructions of oral hygiene. Therefore, we compared the incidence of mucositis in patients treated with Mucosyte®, and in those not treated, with similar basal characteristics. Ulcerative lesions were clinically evaluated at every cycle (for a total of maximum 3 months), according to WHO, RTOG, NCI-CTC, and OMAS scales.
Results
Fourty two patients were enrolled: "Mucosyte® Group" (n=21), and "Control Group" (n=21). Median age was 66 years. There were no clinical and demographic differences between two groups. Mucosyte® Group experienced OM in 3 cases (Grade 1); Control Group experienced OM in 9 cases (4 patients with Grade 2, 5 patients with Grade 1), with a significant statistical difference ($p<0.001$).
Conclusions
Our previous study showed the efficacy of Mucosyte®in the treatment of OM in cancer patients. Present study could demonstrate the effectiveness of the device also in prevention. A prospective study is underway.

eP263
PILOT STUDY ON DYSPHAGIA IN CHILDREN UNDERGOING CHEMOTHERAPY: THE COMEDY PATTERN

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Introduction
The aim of this study was to evaluate the association between non-erosive reflux disease (NERD) and a specific oral mucosal traumatic alteration in children with dysphagia undergoing chemotherapy.
Methods
Children manifesting both dysphagia and chemotherapy-related oral mucositis (OM) within the last year were considered for this study. Oral lesions characterized by a traumatic appearance i.e. milky opalescent mucosa, edema and teeth imprints were selected. Every patient received an otolaryngology consultation to evaluate NERD related changes. Since as defensive reaction to swallowing the children clench, patients were instructed on how to avoid it and, in case of indirect signs of reflux, were treated with sodium alginates and proton pump inhibitors. A hyaluronic acid topical therapy was also recommended. Oral mucosal pain was evaluated through the Visual Analogue Scale (VAS) at T0 and after a week (T1).

Results
Out of 54 patients with OM,8 patients (14.8%) were included in the study. All children presented indirect signs of NERD and were consequently treated, besides receiving anti-clenching instructions. They all physically manifested closed-off expression (closed eyes and shoulder, limited interaction) due to dysphagia discomfort. After therapy, at T1 they demonstrated a significant improvement in pain and the resolution of oral lesions.
Conclusions
All these elements configure a whole nosological entity, which includes Clenching, OM, closed-off Expression, and Dysphagia, summarized in the acronym "COMEDY." Recognizing the COMEDY pattern in children undergoing chemotherapy could help to direct treatment toward a combination of conventional NERD therapy and a behavioral approach, besides topical treatment, to resolve oral mucosal lesions.

eP264
EFFICACY OF HIGHER TEMPERATURE CRYOTHERAPY

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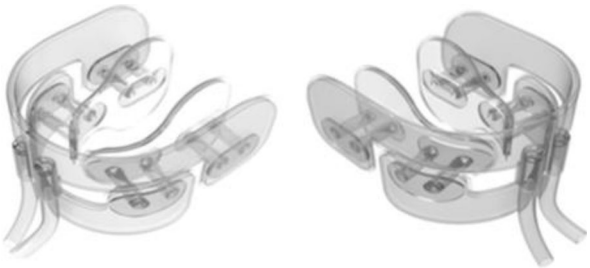
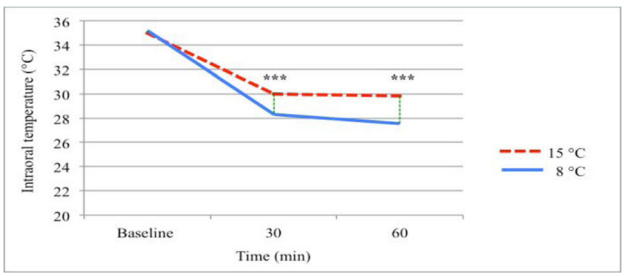
Introduction
During the past decades, ice chips have effectively been used to alleviate the onset and duration of chemotherapy-induced oral mucositis (OM). However, although effective, this preventive measure entails discomfort as shooting pain in the teeth. This study aimed to investigate the efficacy and tolerability profile of a novel intraoral cooling device (ICD) (Fig. 1), employing higher cooling temperatures than those provided by ice (+ 0.5 °C).



Methods
xIn total, 20 healthy volunteers were enrolled in this randomized crossover study. Intraoral temperatures were registered, using an IR-camera, at baseline and following 30 and 60 minutes of cooling with the ICD, set to 8 °C or 15 °C respectively. Following each cooling session, tolerability was assessed using a questionnaire.
Results
The statistical analyses showed a significantly higher temperature reduction using 8 °C compared to 15 °C, following both 30- and 60 minutes (1.9 °C, $p < .001$) and (2.5 °C, $p < .001$) (Fig. 2). In contrast, cooling with 15 °C was better tolerated and preferred over 8 °C by 15 out of 20 participants ($p < .001$).



Conclusions
Intraoral cooling using a temperature of 15 °C is better tolerated than 8 °C but displays inferior capacity in temperature reduction of the oral mucosa. However, to elucidate whether this discrepancy of approximately 2 °C is of clinical importance, the optimal temperature for prevention of OM needs to be identified.

eP265
PROTOCOL AND PRELIMINARY RESULTS OF SYMPTOMS AND CONTROL OF MUCOSITIS IN PATIENTS SUBMITTED TO AUTOLOGOUS STEM CELL TRANSPLANTATION

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Introduction
Incidence of mucositis in conditioning for hematopoietic stem cell transplant is between 75 and 99%. Objective this study is to present the protocol and preliminary results of symptoms and control of mucositis in patients submitted to autologous stem cell transplantation (ASCT).
Methods
From September 2016 to January 2019, the protocol for the prevention of mucositis in patients submitted to ASCT in Clinical Hospital of São Paulo State University, Brazil, was: children toothpaste, nistatine, daily mouthwash with ice cold chamomile tea, cryotherapy, low level laser therapy, 2J, 20s, per point in oral cavity and oropharynx, diary starting with mobilization until engraftment of the bone marrow, 660 nm, 100 mW. Sulcralfate was administrated in the first symptoms of dysphagia, clenil 250cmg spray three times a day at the beginning of mucositis GII. Mobilization for Multiple Myeloma (MM) was used Melphalan, for lymphoma cyclophosphamide, cytarabine, etoposide, carmustine.
Results
Thirty four patients were divided in 2 groups: GI 16 MM, GII 16 lymphoma. GI 44.44% presented mucositis (22,22%, 16.67% oral (OM) and gastrointestinal (GM) respectively, 5.56% OM+GM). GII 18.75% OM. Leukoedema was observed in 33.33% in the GI and 31.25% GII, dysphagia and dry mouth in 33.33% of GI and GII 25% and 31.25% respectively.
Conclusions
Low incidence of mucositis in ASCT suggest that the protocol seems to be effective in the control of mucositis Higher incidence of mucositis, leukoedema, dry mouth and dysphagia in MM patients comparing with lymphoma, suggesting that the drugs used in MM are more cytotoxic for the mucosa.

eP266
INHIBITION OF VITAMIN D CATABOLISM PROTECTS THE INTESTINE FROM 5-FLUOROURACIL INDUCED GASTROINTESTINAL MUCOSITIS

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At the request of the author, this abstract has not been published. For more information, please contact Dr. Andrea Stringer.

eP267

ROMAN: REDUCTION IN ORAL MUCOSITIS WITH AVASOPASEM MANGANESE (GC4419) – IN-PROGRESS PHASE 3 TRIAL IN PATIENTS RECEIVING CHEMORADIOTHERAPY FOR LOCALLY-ADVANCED, NON-METASTATIC HEAD AND NECK CANCER

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Introduction
Approximately 70% of patients receiving intensity-modulated radiotherapy (IMRT) plus cisplatin for locally advanced head and neck cancer (HNC) develop SOM, (WHO Grade 3-4). An RT-induced burst of superoxide initiates oral mucositis (OM) development.
GC4419, a superoxide dismutase mimetic, interrupts this process by converting superoxide to H_2O_2. It showed promising reduction of SOM in a Phase 1b/2a trial (IJROBP 1 Feb 2018) and a subsequent randomized, double-blind placebo-controlled trial. In the latter, GC4419 demonstrated statistically significant reduction in SOM duration (p=0.024, median 1.5 days @ 90 mg vs 19 days placebo) and meaningful reductions @ 90 mg in SOM incidence (43% vs 65%) and Gr 4 incidence, 16% vs 30%). The safety profile was acceptable and consistent with the known toxicities of IMRT/cisplatin.
Methods
335 patients at multiple U.S. and Canadian centers, with locally-advanced, nonmetastatic head and neck cancer (oral cavity/oropharyngeal) receiving 70 Gy IMRT (>50 Gy to > 2 oral sites) plus cisplatin (40 mg/m^2 qwk x 6-7, or 100 mg/m^2 q3wk x 3). Randomization (double-blinded) 3:2 to 90 mg GC4419: placebo, M-F before RT. Stratification: cisplatin schedule, treatment setting (definitive/post-op). WHO-OM assessment: BIW during RT, qwk x2 post-RT. Primary efficacy endpoint: incidence of SOM through IMRT. Secondary: severity (Grade 4 OM incidence through IMRT), & days of SOM (first to last SOM) for all patients. Days of SOM for the subset developing SOM will be described. Follow up: one year post IMRT for tumor progression/recurrence, two years for survival.
Results
Enrolling, trial in progress.
Conclusions
Pending; in progress.

eP268

SALIVARY CYTOKINES EXPRESSION DURING HEMATOPOIETIC CELL TRANSPLANTATION: IS THERE ASSOCIATION WITH ORAL TOXICITY?

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Introduction
The aim of this study is to determine the expression of salivary pro-inflammatory cytokines during the hematopoietic cell transplantation (HCT), and to verify whether there is an association between these cytokines with oral toxicity.
Methods
We collected stimulated saliva from autologous and allogeneic HCT patients (n=72) at baseline (T0, before the HCT conditioning), during the neutropenia (T1), and after the marrow engraftment (T2). Salivary levels of IL-6, IL1β, and TNFα were quantified by ELISA assay. Data about conditioning regimen, time duration of neutropenia, oral mucositis, xerostomia, and body weight loss was collected.
Results
The levels of salivary IL-6, IL-1β, and TNF-α increased significantly at T1 compared to T0, with significant differences for IL-6 (p=0.039) and TNF-α (p<0.001). In an adjusted regression model analyzing the three cytokines, only high levels of IL-1β were significantly associated with a long duration of oral mucositis (OR=0.44, p=0.017) and xerostomia (OR=0.49, p=0.038). The highest levels of IL-1β at T1 were found in autologous HCT (OR=0.35, p=0.002), mainly after melphalan conditioning (OR=2.00, p=0.040). In addition, a significant association was found between body weight loss during the transplantation and high levels of salivary TNF-α at T0 (OR=2.35, p=0.010).
Conclusions
There is an increase in salivary pro-inflammatory cytokines at neutropenia. Among the analyzed cytokines, only salivary IL-1β exhibited a discrete association with oral mucositis and xerostomia. Salivary TNF-α at baseline was a predictive factor for body weight loss, suggesting that the saliva could signalize the systemic metabolic alterations caused by TNF-α during the HCT.

eP269

CHANGES OF SALIVARY ANTIOXIDANT ENZYMES DURING HEMATOPOIETIC CELL TRANSPLANTATION: IMPLICATIONS TO ORAL MUCOSITIS AND XEROSTOMIA

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Introduction
The aim of this study was to investigate the levels of salivary antioxidant enzymes during hematopoietic cell transplantation (HCT), and their association with oral toxicity.
Methods
Stimulated saliva of patients who underwent autologous and allogeneic HCT (n=72) was collected at baseline (T0, before the HCT), neutropenia (T1), and after marrow engraftment (T2). Activity of superoxide dismutase (SOD) and levels of catalase (CAT) and glutathione reductase (GR) in the saliva were also determined. Association tests of these enzymes with oral mucositis and xerostomia were performed.
Results
From T0 to T2, the SOD activity increased, with significant differences between T0 and T1 (p<0.001), and T0 and T2 (p<0.001). CAT and GR showed reduced levels in T1 compared to T0, with recovery to basal levels at T2. The GR levels were significantly reduced at T1 in relation to T2 (p<0.001). In a regression model including the three enzymes, long duration of oral mucositis was statistically associated with high SOD activity at T1 (OR= 0.451, p=0.031). Xerostomia was also associate to high SOD activity (OR=2.550, p=0.017) and to high levels of GR (OR=2.300, p=0.042) at T1. High SOD activity at T0 was a predictive factor for xerostomia (OR=2.71, p=0.006).
Conclusions
Expression patterns of salivary SOD, CAT, and GR during HCT periods are different, with a trend to SOD activity increase and CAT and GR reduction. SOD activity increase is related to a long duration of oral mucositis and xerostomia, suggesting that some protective antioxidant activity persists even in conditions of intense oral toxicity.

eP270

RELATIONSHIPS OF XEROSTOMIA AND ORAL MUCOSITIS TO QUALITY OF LIFE IN PATIENTS WITH HEAD AND NECK CANCER IN TAIWAN

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Introduction
This study was conducted at a medical center in Taiwan. The main purpose of this study is (1) analysis of related factors of head and neck cancer effect of oral mucositis. (2) analyze the correlation between dry mouth and oral mucositis.
Methods
This a longitudinal study, from March 2015 to August 2017, total of 38 people. In patients before radiotherapy, after treatment and treatment were completed "dry mouth questionnaire" and to NCI CTCAE questionnaire. And the former to radiation therapy, after treatment and treatment. Fill EORTC QLQ-H&N35 questionnaire. After data collection with descriptive statistics, generalized linear model and Pearson correlation statistical analysis.
Results
The results is: (1) after the first three weeks of treatment smoking habits significant difference ($p = 0.011$), there are smokers more serious case of oral mucositis, 2 to 5 accounted for 95.65%. (2) smoking habits and the quality of life there is significant correlation ($p = 0.03$), quality of life than smokers who do not smoke difference ($p < 0.1$). (3) Drink and oral mucositis have significant differences ($p < 0.1$), there are those who drink more severe oral mucositis, 2 to 5 accounted for 95.45%.(4) and betel nut chewing habits and the quality of life there is significant correlation ($p < 0.001$).
Conclusions
In this study, we found that patients with head and neck cancer undergoing surgery or chemoradiotherapy will have different levels of dry mouth. Those who have bad habits of smoking, drinking and chewing betel nut will produce more serious mucositis due to dry mouth.

eP271

PROSPECTIVE STUDY TO VALIDATE THE CLINICAL UTILITY OF THE EXISTING TOOL IN PREDICTING MUCOSITIS IN PATIENTS RECEIVING EITHER HIGH DOSE CHEMOTHERAPY OR ON CHEMORADIOTHERAPY

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Introduction
Mucositis disrupts QOL significantly in subjects relieving high dose chemotherapy/concurrent chemoradiotherapy. Attempts to look for tools predicting the probability yielded encouraging results (JCRT :2010 6(4):448-51) There is no prospective validation of the scoring system done for predicting development of mucositis. we validated the risk-scoring system developed by Attili et al to predict probable incidence and severity of mucositis.
Methods
This is a prospective analysis conducted at a tertiary care cancer center with approximately 6,000 new cases annually. The considered risk factors as per the literature were the following cutoff values were selected: age > 40 years, ECOG PS > 2, WBC < 3000/μL, elevated ESR, albumin < 3 gm/dL and more than or equal to stage III disease presence of more than one co-morbid conditions. A score of 1 was assigned for the above risk factors.
Results
508 patients from 2017-2019 were prospectively classified into Low risk (score < 3%), Intermediate risk (score of 4-6) & high risk (score > 6). All patients received either chemoradiation (cisplatin 40mg/m2 /week+local radiation 60-70 Gy depending on primary site)/high dose chemotherapy. For low risk subjects there is 8%(95% CI- 5-12%) probability of developing grade 3/4 mucositis, while patients having intermediate risk have 26%(95% CI- 18-22%)&high risk [patients have 58%(95% CI- 45-72%) of severe mucositis. The positive(86%)& negative(89%) predictive values favor the use of the same in clinical practice
Conclusions
we could successfully validate clinical utility of existing tool in predicting mucositis in patients receiving either high dose chemotherapy/ chemoradiotherapy. This will further help clinicians to adopt preventive strategies as well as better counseling.

eP272

DEVELOPMENT OF A 3D-ORGANOID MODEL OF METHOTREXATE-INDUCED MUCOSITIS

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Introduction
Gastrointestinal mucositis is a side-effect of chemotherapy that causes significant gut toxicity. This results in clinical manifestations that affect the course of chemotherapy. Currently, there is a limited number of *in vitro* systems suitable to study the mucosal damage. Therefore, we aimed to validate a chemotherapeutics-induced model of mucositis using organoids grown in a 3D fashion.
Methods
Intestinal organoids derived from mouse ileum were grown for 7 days and incubated with different concentrations of methotrexate (MTX), ranging from 0-1000 ng/ml. Metabolic activity, citrulline levels and cytokine/chemokine production were measured to determine the optimal dosage and incubation time. To link the model to clinical practices, folinic acid (0.0005-50 μg/mL) was added in combination with MTX. To evaluate the effects of short-chain fatty acids in the organoid model, different concentrations of butyrate (0.25-2mM) were added for 96 hours.
Results
MTX (100-1000 ng/ml) treatment resulted in reduced cell metabolic activity and citrulline levels ($p<0.001$). However, recovery after 96 hours was only observed with a MTX dose of 100 ng/ml, showing that 100 ng/ml is the optimal concentration in this model. Folinic acid treatment was able to restore organoid function when applied simultaneously or/up to 24 hours after treatment. Simultaneous addition of 0.25-1mM butyrate showed a protective effect on MTX toxicity
Conclusions
MTX causes significant organoid damage, which can be reverted upon removal of MTX. The protective effects of folinic acid suggest that the model is clinically relevant. Treatment with butyrate might be a valuable strategy for mucositis treatment.

eP273

ORAL MICROBIAL INFLUENCES ON THE PATHOGENESIS OF ORAL MUCOSITIS DURING RADIOTHERAPY TREATMENT OF HEAD AND NECK CANCER

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Introduction
Oral mucositis (OM) remains a significant complication developed by many patients undergoing radiotherapy (RT) to the head and neck region. Emerging data suggest oral bacteria contribute to the onset and severity of this acute side effect.
Methods
Swabs were collected from the buccal mucosa and lateral tongue of head and neck cancer patients during RT. Molecular microbiological techniques were employed to study the bacterial communities present on these oral surfaces and how they change with increasing radiation dose and mucositis severity. The potential to use the bacteria present on the buccal mucosa prior to RT as a predictor of OM was investigated.
Results
The abundance of obligate and facultative anaerobic Gram-negative bacilli (GNB) *Bacteroidales* G2, *Capnocytophaga*, *Eikenella*, *Mycoplasma* and *Sneathia*, as well as anaerobic GNB in the periopathogenic genera *Porphyromonas* and *Tannerella*, were all positively correlated with ≥ grade 2 OM and negatively with ≤ grade 1 OM sites. Significant increases in the relative abundances of *Bacteroidales* G2, *Fusobacterium* and *Sneathia* were identified in buccal swabs at sites of ≥ grade 2 OM ($p < 0.05$). The abundance of several GNB (*Haemophilus*, *Fusobacterium*, *Tannerella*, *Porphyromonas* and *Eikenella*) on the buccal mucosa prior to RT may increase patient susceptibility to developing OM.
Conclusions
Our findings support previously hypothesised associations between oral health, oral bacteria and the pathogenesis of OM and highlights the importance of oral health interventions for head and neck cancer patients.

eP274
IMPORTANCE OF TYING THE SCIATIC NERVE IN ABOVE KNEE AMPUTATION TO PREVENT NEUROMA FORMATION

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Introduction
Sciatic nerve is the thickest nerve in human body. Neural sheath of sciatic nerve is rich in microvasculature. We compared neuroma formation after tying the sciatic nerve with leaving its cut end open in patients who undergo above knee amputation.
Methods
We followed a total of 90 patients who underwent above knee amputation. In half of these patients, cut end of sciatic nerve was left open and in other half, the nerve was tied. Patients in both the groups were age, sex and BMI matched. Neuroma formation in the stump was assessed one year after surgery. This assessment was done by measuring the diameter of sciatic nerve ending using sonogram. Sciatic nerve diameter was measured bilaterally at the same level, and the value of the normal limb was taken as control.
Results
Of 45 patients who underwent tying of sciatic nerve, only 10 patients developed thickening of the cut end of sciatic nerve in comparison to opposite limb. On the other hand, 45 patients in whom the cut end was left open, 33 patients developed neuroma formation. This result was statistically significant
Conclusions
Rich microvascularity of sciatic nerve results in the formation of haematoma beneath the cut end, if it is left open. This haematoma eventually results in growth of neural fibres. As a result of this, neuroma formation occurs at cut end of sciatic nerve in above knee amputation. We thus conclude, it is always wise to tie the cut end of sciatic nerve in above knee amputation to prevent neuroma formation.

eP275
OXALIPLATIN-INDUCED NEUROTOXIC SIDE EFFECTS AND THEIR IMPACT ON DAILY ACTIVITIES

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Introduction
Oxaliplatin (OXA) is frequently used in the treatment of patients with colorectal cancer, and OXA-induced neurotoxic side effects are common. Reports on real-time patient-reported neurotoxic side effects and impact on the patient's daily activities are sparse in existing studies.
The aim of this study was to identify and assess patient-reported OXA-induced neurotoxic side effects and their impact on the patient's daily activities, during and after chemotherapy.
Methods
In a multicenter prospective longitudinal study, 46 chemo-naïve patients with colorectal cancer treated with postoperative adjuvant OXA-based chemotherapy were monitored during treatment and at 3-, 6-, 9-, and 12-month follow-ups. Patients were recruited from September 2013 to June 2016. In total, 370 Oxaliplatin-Associated Neurotoxicity Questionnaire responses were available for analysis. A mobile phone-based system was used to receive real-time assessments.
Results
All patients reported neurotoxic side effects and impact on daily activities during treatment. The side effects changed in character and body location over time and had an impact on the daily activities.
Conclusions
The high prevalence of OXA-induced neurotoxic side effects significantly interfered with the patients' daily activities. We found significant differences between baseline data and follow-up time points for neurotoxicity. The real-time assessment using mobile phone technology seems to be a valuable tool for monitoring patient-reported neurotoxicity and interventions for tailored care. Effectively identifying neurotoxicity and its impact on the patient's daily activities is important in supportive cancer care.

eP276
SURVIVAL DIFFERENCE ASSOCIATED WITH CONTROLLED-RELEASE OXYCODONE ANALGESIC THERAPY FOR OXALIPLATIN-INDUCED PERIPHERAL NEUROPATHY IN ADVANCED COLORECTAL CANCER PATIENTS

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Introduction
Oxaliplatin is used as part of FOLFOX to treat colorectal cancer (CRC). Oxaliplatin produces chemotherapy-induced peripheral neuropathy (OIPN). We report that controlled-release oxycodone (CR oxycodone) attenuates the pain of OIPN and extendes FOLFOX. We investigate the efficacy of CR oxycodone for OIPN and its association with patients' survival time.

Methods
Stage III or IV CRC were included in this study. All patients underwent surgery to extirpate the primary CRC and received FOLFOX. Patients administered CR oxycodone were defined as OXY group, and those who did not receive CR oxycodone were defined as non-OXY group. Incidence and severity of OIPN and the number of FOLFOX cycles were measured. Neurological toxicities were assessed according to the CTCAE version 3.0. Survival time was calculated using the Kaplan-Meier method.
Results
All patients had OIPN. Grade 3 sensory neuropathy was observed in 2 patients in the non-OXY group. FOLFOX therapy was discontinued in 10 patients of the non-OXY group due to severe OIPN. The median number of FOLFOX cycles in the OXY and non-OXY groups was 13 and 7 respectively (P <0.05). The median value of cumulative oxaliplatin dose was 1072.3 mg/m2 in the OXY group and 483.0 mg/m2 in the non-OXY group (P <0.05). Patients in the OXY group had relatively longer survival than those in the non-OXY group (median survival, 58 months vs. 36 months; P=0.06).
Conclusions
CR oxycodone may attenuate the severity of OIPN and extend FOLFOX therapy. CR oxycodone for OIPN might be relatively effective for better patient compliance with FOLFOX, and longer survival.

eP277
PERTURBATIONS IN NEUROIMFLAMMATION-RELATED PATHWAYS IN CHRONIC PACLITAXEL-INDUCED PERIPHERAL NEUROPATHY (PIPN) IN BREAST CANCER SURVIVORS

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Introduction
The prevalence of chemotherapy-induced peripheral neuropathy (CIPN) in cancer survivors is as high as 60%. CIPN is the most common and severe adverse drug reaction associated with neurotoxic chemotherapy. No pharmacologic interventions are available to prevent CIPN. A critical barrier to the development of efficacious interventions is the lack of understanding of the mechanisms underlying CIPN. Neuroinflammation (NI) is associated with development and maintenance of CIPN. In this pilot study, we evaluated for differences in perturbations in NI-related pathways between breast cancer survivors with and without PIPN.
Methods
GE in peripheral blood was assayed using RNA-seq. We evaluated for perturbations in NI-related pathways between survivors who received paclitaxel and did (n=25) and did not (n=25) develop PIPN.
Results
Breast cancer survivors with PIPN were significantly older; more likely to be unemployed; reported lower alcohol use; had a higher body mass index and a poorer functional status; and had a higher number of lower extremity sites with loss of light touch, cold, and pain sensations, and higher vibration thresholds. No between group differences were found in the total dose of paclitaxel received. Five significantly perturbed NI-related pathways (i.e., cytokine-cytokine receptor interaction, NF-kappa B signaling, GABAergic synapse, Adipcytokine signaling, and IL-17 signaling) were identified.
Conclusions
Chronic PIPN is associated with perturbed NI-related pathways derived from peripheral blood. Our findings support the hypothesis that NI is a mechanism that contributes to PIPN and suggest additional genes for validation and potential therapeutic targets.

eP278
DULOXETINE IN CHEMOTHERAPY-INDUCED PERIPHERAL NEUROPATHY: SINGLE-CENTER EXPERIENCE BEYOND THE CLINICAL TRIAL.

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Introduction
Introduction: Duloxetine is the only agent demonstrated effective in treating pain related with chemotherapy-induced peripheral neuropathy (CIPN). The aim was to evaluate the duloxetine's efficacy and adverse effects profile in an observational study including first one-hundred patients with symptomatic-CIPN consecutively treated in a single-institution.
Methods
CIPN was graded employing the TNS© and NCI-CTC. Response to duloxetine was assessed with Patient Global Impression of Change (PGIC) scale (1:no benefit; 7:excellent response) and considered at PGIC >4.
Results
Results: Median age was 62 (29-81). Severity of neuropathy was grade 1 (20%), grade 2 (66%), and grade 3 (14%). Median time from finishing chemotherapy to duloxetine initiation was 6 [1-63] months. Fifty-seven (57%) patients discontinued duloxetine, due to intolerable side effects (37%) or lack of efficacy (20%). Most frequently reported adverse events were cognitive (26%), gastrointestinal (14%) and genitourinary (9%). Men more frequently discontinued duloxetine due to perception of lack of efficacy (35.7% vs 8.6% p=0.001). PGIC scores were higher in women (4[1-7] vs 1[1-7], p=0.001), patients receiving taxane (4[1-7] vs 1[1-7], p=0.042) and patients with short-lasting CIPN (≤ 6 months) (4[1-7] vs 1[1-6], p=0.008). Patients with chronic CIPN had a higher rate of suspension due to adverse events (47% vs 27%, p=0.038) and less rate of continuation of duloxetine (26% vs 48%, p=0.023). Female gender (OR:9.7; CI 95%:0.021-0.506, p=0.005) and short-term (≤ 6 months) CIPN (OR:7.29; CI 95%:1.641-32.430;p=0.009) were identified being associated with a favorable response to duloxetine.
Conclusions
Conclusion: Low tolerability, male gender and long-lasting CIPN may limit duloxetine usefulness in treatment of CIPN.

eP279
TAKING SIDES: IMPORTANCE OF TUMOR LATERALITY IN UNDERSTANDING COGNITIVE TESTING IN PRIMARY BRAIN TUMOR PATIENTS

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Introduction
Cognitive impairment is often present throughout the disease course for patients with central nervous system malignancies. Cognitive testing (CogT) is routinely used to assess impairment and can be a clinical trial endpoint. Understanding the factors that influence CogT metrics is critical in the interpretation of clinical outcomes and endpoints in clinical trials. We sought to understand the contribution of tumor laterality on CogT in patients with primary brain tumors.
Methods
We queried CogT performance from 2 clinical trials: study 1 (NCT01303835) and study 2 (NCT01740258) in newly diagnosed high grade glioma patients (WHO grade III/IV). CogT included a

computerized battery (CNS Vital Signs®); domains were verbal memory, visual memory, processing speed, psychomotor speed, reaction time, cognitive flexibility, complex attention, and executive function. We obtained descriptive statistics for both studies and compared post-chemoradiation performance based on tumor laterality with lower scores identifying poorer performance.

Results

Study 1 had 105 patients: 48.6% (n=51) having R tumor and 51.4% (n=54) having L tumor. Study 2 had 61 patients: 44.3% (n=27) having R tumor and 55.7% (n=34) having L tumor. Verbal and visual memory did not differ based on tumor laterality. More complex domains such as cognitive flexibility and executive function differed noticeably with R tumor patients performing better than L tumor patients (Study 1 executive function R: mean=91.4 (sd=20.3) and L: mean=75.4 (sd=30.5)).

Conclusions

Lesion laterality is important in the interpretation of cognitive testing performed in primary brain tumor patients for complex cognitive domains but not for simpler memory domains.

eP280
OUTCOMES AFTER RADIOTHERAPY FOR PATIENTS WITH MALIGNANT CAUDA EQUINA COMPRESSION

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Introduction

Malignant cauda equina compression (MCEC) can cause significant neurological impairment affecting patients' quality of life. Currently there are limited studies on radiotherapy for MCEC and its impact on outcomes. The primary aim of this study was to evaluate mobility outcomes after radiotherapy for MCEC. Secondary aims were to review the response to pain, bowel and bladder dysfunction and measure survival following MCEC.

Methods

This was a retrospective review of 103 patients treated with radiotherapy for MCEC in South Western Sydney from Jan 2008 to Dec 2017. Patients were identified by retrieving data on all patients who had radiotherapy to lumbosacral spine sacrum within 72 hours from their 'ready-for-care' date. It excluded patients with multi-level compression and paraplegic patients from previous injury.

Results

46 of 103 (45%) patients were ambulant at presentation, 56 of 88 (64%) were ambulant at week 1 and 39 of 59 (66%) were ambulant at 1 month after radiotherapy. 10 of 79 (13%) patients had reduction in opioid dose at 1 week post-radiotherapy. 14 of 38 (37%) patients had improvement in bladder symptoms and 9 of 19 (47%) patients had resolution of faecal incontinence at one week following radiotherapy. 2 of 44 (5%) later developed bladder dysfunction and 8 of 62 (13%) later developed faecal incontinence. Median survival from diagnosis of MCEC was 2 months.

Conclusions

The use of palliative radiotherapy was associated with improved mobility outcomes and sphincter dysfunction in patients with MCEC. However, there was minimal improvement in pain. The diagnosis of MCEC was associated with poor survival.

eP281
ABOUT COGNITIVE IMPAIRMENT IN PATIENTS WITH FAR-ADVANCED CANCER

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Introduction

Cancer-related cognitive changes are under-recognized by both GPs and oncologists, such situation burdens patients' state. The aim of this study was to assess prevalence of cognitive decline in palliative care settings

Methods

Observational survey was undertaken. Patients were consulted at home They were classified as having cognitive impairment based on clinical judgment with additional MMSE if necessary

Results

4131 patients (men 1514, women 2617, average age 74.7 ± 5.6 years) were examined for variety of malignancies. Cognitive disorders were detected in 880 (21.3%), much higher than in age-matched non-cancer people (4%). Usually such decline remained quite mild (MCI), memory loss becoming highlight. Less common presentations of MCI included lack of attention and concentration difficulties. More severe cases were identified with dysfluency, visuospatial skills disorder; as a rule they were associated with preceding chemotherapy. Such symptom cluster could indicate thiamine deficiency which was confirmed in preliminary study. This value was measured in small patient group In our group relationship between cognition and adherence was noted, as earlier had been observed, particularly in aged patients. By final phase of life this decline precipitated, contributing general deterioration.

Conclusions

Our findings provide additional evidence supporting the need to recognize and take care of cognitive dysfunction. Its management would improve quality of life in patients with far-advanced cancer.

eP282
COGNITIVE TRAINING IN BREAST CANCER SURVIVORS: PRELIMINARY RESULTS

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Introduction

Background: For millions of cancer survivors, cognitive dysfunction is a prevalent, severe, and persistent problem that is associated with poorer quality of life. Unfortunately, the scientific basis for managing these cognitive changes in cancer survivors is extremely limited. The purpose of this 2-group, double-blind, randomized controlled trial is to test the feasibility, satisfaction, and preliminary efficacy of a computerized home-based cognitive training program compared to attention control in breast cancer survivors (BCS).

Methods

Methods: A total of 68 eligible BCS will be randomized to computerized cognitive training or attention control. A blinded and trained tester will perform data collection and neuropsychological testing at two time points: baseline prior to intervention (T1) and immediately after the 10-week cognitive training -program (+/- 7 days) (T2). Feasibility and satisfaction will be assessed through objective indicators (study adherence, completion rate) and self-report (facilitators, barriers, and perceived satisfaction) and cognitive performance will be assessed through objective neuropsychological tests. Data will be analyzed using descriptive statistics and a general linear mixed model (GLMM). Simple main effects analyses will be used to follow up statistically significant interactions.

Results

Results and Conclusions: Preliminary results of this trial will be presented, including an assessment of treatment fidelity measures used in this intervention trial.

Conclusions

This work will represent the first rigorous trial of computerized cognitive training delivered in the home to BCS. Positive or negative study findings will provide empirical evidence for clinicians'

recommendations and survivors' treatment selections for managing cognitive impairment in BCS.

eP283

PRE-CHEMOTHERAPY PLASMA DEHYDROEPIANDROSTERONE LEVELS AND ITS SULFATED FORM-DHEA(S) AS A PREDICTOR FOR CANCER-RELATED COGNITIVE IMPAIRMENT IN BREAST CANCER PATIENTS RECEIVING CHEMOTHERAPY

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Introduction
Dehydroepiandrosterone and its sulfated form, jointly referred to as DHEA(S), are neurosteroids known to regulate brain development and function. We hypothesized that higher pre-chemotherapy plasma DHEA(S) levels protect breast cancer patients from onset of cancer-related cognitive impairment (CRCI). The study's objective is to evaluate association between pre-chemotherapy plasma DHEA(S) levels and CRCI in breast cancer patients receiving chemotherapy.
Methods
In a prospective cohort study, self-perceived and objective cognitive function of patients were assessed before, during and after chemotherapy. Plasma samples were assayed with ultra-high-performance liquid chromatography-tandem mass spectrometry for quantitative determination of DHEA(S) levels. Multivariable logistic regression was used to evaluate the association between pre-chemotherapy plasma DHEA(S) levels and CRCI, incorporating clinically important factors.
Results
Eighty-one patients (mean age ± SD = 48.9 ± 9.3 years) were analysed, with 27.8% of patients reporting CRCI based on global FACT-Cog scores. The mean ± SD pre-chemotherapy plasma DHEAS and DHEA levels were 1.61 ± 0.91 μmol/L and 19.21 ± 13.13 nmol/L respectively. Associations were found between DHEAS levels and impairment in self-perceived cognitive domains of verbal fluency (adjusted OR = 0.27, 95% CI= 0.08-0.96) and mental acuity (adjusted OR = 0.25, 95% CI = 0.08-0.74). Conversely, DHEA was not associated with any cognitive sub-domains.
Conclusions
Our findings suggest that patients with higher pre-chemotherapy DHEAS levels are at lower odds of developing self-perceived cognitive impairment in verbal fluency and mental acuity. Future studies are required to validate our findings in independent cohorts and should evaluate whether DHEAS supplementation can serve as pre-emptive intervention.

eP284

EFFECT OF PRIOR RADIOTHERAPY ON OVERALL SURVIVAL OF CANCER PATIENTS WITH ACUTE INTRACRANIAL HEMORRHAGE

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Introduction
While radiotherapy (RT) is an established treatment for primary and secondary brain tumors, it is also considered a risk factor for intracranial hemorrhage. This study aims to assess how prior cranial irradiation affects the short term survival of patients with acute spontaneous intracranial hemorrhage (ICH).
Methods
This is a retrospective cohort study of all patients presenting with spontaneous ICH to the Emergency Department (ED) of The University of Texas MD Anderson Cancer Center from 9/1/2006 to 2/16/2016. Patients were identified using all ICH related ICD-9 codes in a billing database. Then data regarding the patient's cancer type, RT status and outcomes was collected from the electronic medical record. Associations between prior brain irradiation and short mortality were investigated with logistic regression models.
Results
There were 678 unique patient visits for spontaneous ICH during this 10 year period. This is a preliminary analysis of the 398 patients with complete data, 92 (23%) of whom had prior brain irradiation. For all ICH patients mortality was 12.6% at 7 days and 26.1% at 30 days post-ICH. Mortality at 7 days was less for ICH patients with prior brain irradiation, odds ratio=0.33 (95%^ CI; 0.11-0.790), P=0.023. By 30 days this benefit no longer observed, odds ratio=0.73 (95% CI: 0:41-1.25), P=0.262.
Conclusions
Although prior cranial irradiation is an established risk factor for ICH in cancer patients, and nearly a quarter of our cohort had prior RT, their short term survival after spontaneous ICH was higher suggesting a protective effect.

eP285

ANTIBIOTIC PRESCRIBING PRACTICES IN SUPPORTIVE/PALLIATIVE MEDICINE – AN OBSERVATIONAL PILOT STUDY

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Introduction
Infection is an important treatable cause of mortality in advanced cancer.
Methods
An observational study was conducted in the integrated supportive medicine setting (outpatient department and ward) of a tertiary cancer hospital.
Results
28 patients were analysed during one month. The youngest was 2 and the eldest patient was 73 years old. Mean values for the haematological and biochemistry variables were as follows - Hb level 9.21 gm/dl, TLC 8997/ul, Platelet count was 169741/ul, ANC was 8818/ul. Mean creatinine was 0.83 mg/dl and albumin levels were 2.9 gm/dl respectively. The most frequent indication for antibiotic prescription was malodour from malignant fungating wound (39.3%), followed by febrile episode, discharge per rectum and surgical site infection (7.1% each). The indications also included cotrimoxazole prophylaxis against URTI in patients with involvement of lung parenchyma and doxycycline for geftinib induced skin rash. The most common antibiotic prescribed was Metronidazole (53.6%) followed by Amoxycillin clavulanate (10.7%) and Levofloxacin (7.1%). 9 (32.1%) patients were prescribed combination of antibiotics. The mean duration of treatment was 8.5 days. However, Metronidazole in a low dose of 400 mg per day (fungating wounds) and cotrimoxazole (400/80) in a dose of two tablets twice daily three times a week (to prevent recurrent LRTI) were continued as long term prophylaxis.
Conclusions
The importance of a restrictive antibiotic stewardship programme in palliative medicine needs to be recognized. The role, indications and effectiveness of long term antibiotics (lesser than usual dose) in the prophylaxis and treatment of infection in advanced cancer need to be studied further.

eP286

CHANGES IN INCIDENCE OF FEBRILE NEUTROPENIA HOSPITALIZATION (FNH) FOLLOWING MYELOSUPPRESSIVE CHEMOTHERAPY (MC) IN MEDICARE, 2010-2017

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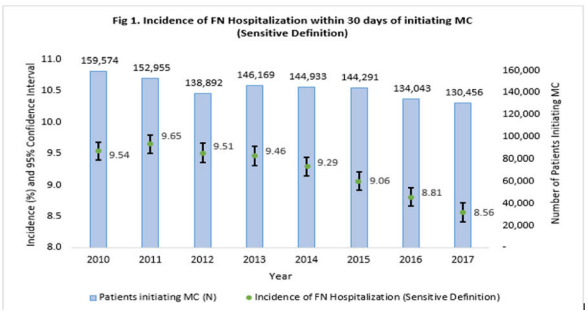
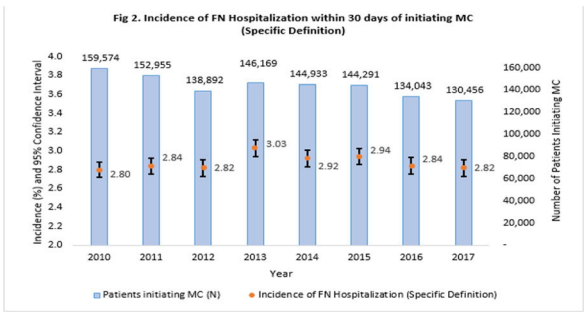
Introduction
FNH is a potentially life-threatening side effect of MC often leading to treatment disruption. Although use of MC is evolving there is no data describing the changes in incidence of FNH following initiation of MC.
Methods
Using the 100% Medicare database, we created annual cohorts of patients initiating MC between 01/01/2010 and 11/30/2017, overall and for patients with breast, lung, colon cancer and non-Hodgkin's lymphoma (NHL). Patients were required to have 12 months continuous enrollment prior to, and 30 days following, MC. FNH was defined as first five positions of the inpatient claim having: i) diagnosis of fever, infection, or neutropenia (sensitive definition); and ii) diagnosis of neutropenia (specific definition). Incidence (%) and 95% confidence interval of FNH within 30 days of initiating MC were calculated for annual cohorts.
Results
A total of 1,151,313 patients met study inclusion criteria. There was a decline in incidence of FNH (sensitive definition) from 2010 to 2017 for the overall cohort (9.5 to 8.6%; Fig 1): breast (8.1 to 7.8%), lung (12.6 to 10.8%), colon cancer (6.6 to 6.3%), and NHL (18.0 to 15.3%). In contrast, the incidence of FNH using specific definition was stable from 2010 to 2017 for the overall cohort (2.8 to 2.8%; Fig 2): breast (3.7 to 4.0%), lung (2.7 to 2.7%), colon cancer (1.4 to 1.7%), and NHL (7.9 to 7.6%).





Conclusions
Despite the guidelines for using myeloid growth factors and changes in MC, hospitalization for febrile neutropenia continues to be a burden for patients receiving MC.

eP287
STUDY ON THE EFFICACY OF PEG-RHG-CSF AS PRIMARY PROPHYLAXIS AND DIFFERENCES OF CYTOKINES EXPRESSION BETWEEN PEG-RHG-CSF AND SHORT-TERM RHG-CSF USE IN SENILE LYMPHOMA PATIENTS

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Introduction
Pegylated recombinant human granulocyte colony-stimulating factor (PEG-rhG-CSF) is widely used in senile lymphoma patients, while previous study found that serum level of cytokines will increase to some extent after the application of G-CSF.
Methods
132 elder lymphoma patients treated with chemotherapy were included. Among them, 60 patients receiving PEG-rhG-CSF and 72 patients without PEG-rhG-CSF injection were recruited as the prevention group and control group, respectively. The incidence of grade 3-4 neutropenia and febrile neutropenia (FN) and the side effects induced by PEG-rhG-CSF were analyzed. From the first cycle of treatment, serum level of cytokine interleukin- (IL-) 1β, IL-2 receptor (IL-2R), IL-6, IL-8, IL-10 and tumor necrosis factor- (TNF-) α were detected before each cycle and were compared.
Results
Significant lower incidence of grade 3-4 neutropenia and FN were seen in the prevention group (Table 1). As for adverse effects, 18.3% patients experienced slight bone pain. After cycle 1, IL-6 elevated in patients using short-term G-CSF in the control group, while decreased in the prevention group, with statistical significance (median values of the changes of IL-6 before and after cycle 1: 0.6850 vs -0.4200, $P = 0.035$), but there was no significant difference in the changes of other cytokines between the two groups, as well as changes of the cytokines in cycle 2-6 ($P > 0.05$).

Table 1 Incidence of grade 3-4 neutropenia and FN of prevention group and control group

	Prevention group	Control group	P value
Incidence of 3-4 neutropenia	73.3%	88.9%	0.021
Incidence of FN	35.0%	52.8%	0.041
Subgroup at the age of 60-69			
Incidence of 3-4 neutropenia	73.9%	89.3%	0.043
Incidence of FN	30.4%	50.0%	0.046
Subgroup at the age of 70 and above			
Incidence of 3-4 neutropenia	71.4%	87.5%	0.272
Incidence of FN	50.0%	62.5%	0.491

Conclusions
In senile lymphoma patients, PEG-rhG-CSF demonstrated significant prophylaxis for grade 3-4 neutropenia and neutropenia-related events. Furthermore, compared with traditional G-CSF, PEG-rhG-CSF do not result in a increased expression of cytokines.

eP288
MODIFIED BEP CHEMOTHERAPY REGIMEN IN TESTICULAR GERM CELL TUMOR- OUTCOME AND TOXICITY

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Introduction
Bleomycin, cisplatin and etoposide (BEP) based combination chemotherapy is established as standard treatment for testicular germ cell tumors. As these tumors are highly curable, so management is crucial in terms of long term toxicity particularly lung toxicity. With standard BEP there is increased toxicity which leads to poor compliance. So we at a tertiary care centre assessed modified BEP regimen in such patients and evaluated its effectiveness in terms of response and toxicity as compared to standard BEP.

Methods
Forty-eight patients of testicular germ cell tumors were enrolled in this study from January 2012 to December 2016. The modified BEP regimen consisted of bleomycin 30 IU Day 1, cisplatin 20 mg/m2 Day 1-5 and etoposide 100mg/m2 Day 1 to 5, given every three weeks. The planned drug intensities were 33.3 mg/m2/week for cisplatin, 166.7 mg/m2/week for etoposide and 10 IU/body/week for bleomycin. The schedule for chemotherapy was as follows: four courses of modified BEP for stage I patients and six courses of modified BEP for stage I S, II and III patients.
Results
Overall Response rate in our study was seen to be 81.2% which was comparable with the available evidence. Five (10.4%) patients had febrile neutropenia. Two (4.1%) patients showed clinically evident bleomycin induced pulmonary toxicity. Lower toxicity seen in these patients led to better overall compliance.
Conclusions
Modified BEP protocol is a good alternative to standard BEP with comparable efficacy and reduced toxicity.

eP289
IMPORTANCE OF THE MASCC SCORE IN THE APPROACH OF FEBRILE NEUTROPENIA

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Introduction
Febrile neutropenia (FN) is a common complication in oncologic patients. Risk-stratification scores, like MASCC score, should be performed as part of initial approach at the General Emergency Department (GED) to identify low-risk FN patients (MASCC score ≥21).
Methods
Retrospective study of patients with solid neoplasm diagnosed with FN in a Portuguese GED between 2014 and 2017.
Results
Of the 118 patients admitted in the GED with neutropenia, 66 were excluded because they didn't have solid neoplasia or had neutropenia without fever.
52 patients included in the study. 57.7% were female, with a median age of 66 years (30-84). The most frequent cancers were breast (36.5%), lung (17.3%) and colorectal (17.3%). 44.2% had metastatic disease.
MASCC score was calculated in 9 patients (17.3%). Of the 7 patients with low-risk, 5 were admitted to the hospital with intravenous antibiotic therapy (AT). We calculated, *a posteriori*, the MASCC score of the remaining 43 patients and 51.3% presented a low-risk, in which 1 patient was treated at home with oral AT.
All hospitalized patients received intravenous AT. The regimen most widely used was Piperacilin/Tazobactam plus an aminoglycoside (76.6%). Blood cultures were positive in 17% of patients and the most common agent was a multisensitive E. coli.
85.7% of hospitalized patients were treated with G-CSF, with half presenting at low-risk.
Conclusions
This study aims to demonstrate that the MASCC score is rarely performed at the GED, in which practically all patients are hospitalized for broad-spectrum intravenous AT and for G-CSF, including low-risk, despite the recommendations from leading oncology societies stating the opposite.

eP290
COMPARISON OF BIOSIMILAR WITH ORIGINATOR FILGRASTIM FOR THE PRIMARY PROPHYLAXIS OF FEBRILE NEUTROPENIA: EXPERIENCE AT THE SUNNYBROOK ODETTE CANCER CENTRE (SOCC) IN CANADA

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Introduction
Grastofil® (filgrastim) is a biosimilar to the reference biologic drug Neupogen® (filgrastim) and is used for the primary prophylaxis (PPx) of febrile neutropenia (FN). The aim of this study was to compare the incidence of FN in breast and lymphoma cancer patients who received PPx with Grastofil® versus Neupogen® at our centre.
Methods
Beginning January 2017, breast and lymphoma cancer patients receiving chemotherapy with neoadjuvant/adjuvant intent (breast cancer) or curative intent (lymphoma) received PPx with Grastofil®. A retrospective chart review of all eligible breast and lymphoma cancer patients receiving PPx with Grastofil® during January 2017 to September 2018 and Neupogen® during 2013-2017 was conducted. Patient, disease, and treatment characteristics were collected along with Grastofil® and Neupogen® usage. The primary endpoint was the occurrence of FN. Secondary endpoints included dose-delays and dose-reductions.
Results
120 Grastofil® and 202 Neupogen® patients were included in the present study. Overall, 10 (8.3%) Grastofil® patients experienced FN during treatment, 21 (17.5%) experienced a dose-delay and 65 (54.2%) received a dose-reduction. In comparison, 17 (8.4%) Neupogen® patients experienced FN, 44 (21.8%) experienced a dose-delay and 112 (55.4%) received a dose-reduction.
Conclusions
The incidence of FN in patients who received PPx with Grastofil® was comparable to patients who received PPx with Neupogen®. Moving forward, Grastofil® and Neupogen® patients will be case-matched for chemotherapy regimen, planned dose intensity, age at treatment, hemoglobin, sex and bone marrow involvement (for lymphoma patients only), in a 1:1 ratio to compare the rates of FN with an equivalence statistical design.

eP291
POSSIBLE VIRAL INVOLVEMENT IN DNA MODIFYING OF PATIENTS WITH ACUTE LEUKEMIA

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Introduction
I have noticed over the years as acute leukemia appear and the relapse of the disease occurs mainly in spring and autumn, so I want to study „possible viral involvement in DNA modifying of patients with acute leukemia". For that, I want to research the possibility of involving certain viruses. Most leukemias are discovered by an infectious process. I believe that a screening test would be useful regarding common infection (for exemple: Influenza virus, coronavirus, parainfluenza, respiratory syncytial virus, rhinovirus, adenovirus, herpes simplex virus, HTLV). We make serological screening for usual infections, but we don't make screening for the viruses described above. A molecular analysis it would help us more. The number of samples available is 25 and the number anticipated in one year is 50.
Methods
We make serological screening for usual infections, but we don't make screening for the viruses described above. A molecular analysis it would help us more.
Results
Most leukemias are discovered by an infectious process. I believe that a screening test would be useful regarding common infection (for exemple: Influenza virus, coronavirus, parainfluenza, respiratory syncytial virus, rhinovirus, adenovirus, herpes simplex virus, HTLV).

Conclusions

I have noticed over the years as acute leukemia appear and the relapse of the disease occurs mainly in spring and autumn, so I want to study „possible viral involvement in DNA modifying of patients with acute leukemia"

eP292

MYELOSUPPRESSION AND MONITORING OF ABSOLUTE NEUTROPHIL COUNTS IN EPIRUBICIN/CYCLOPHOSPHAMIDE-TREATED BREAST CANCER PATIENTS: RESULTS FROM A PHASE-2A COLLABORATIVE TRIAL OF THE AGO-B AND CESAR STUDY GROUPS

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Introduction

Severe neutropenia and infections are frequent adverse events associated with standard chemotherapy regimens. We tightly monitored absolute neutrophil counts (ANCs) in a patient population undergoing anthracycline and cyclophosphamide treatment. Results prompt us to recommend apposite time points to monitor ANCs.

Methods

MyeloConcept is a randomized, double-blind, placebo-controlled, multicentre phase 2a trial, in which patients received adjuvant or neoadjuvant chemotherapy for the treatment of breast cancer. This abstract reports on the placebo group of 65 patients who received chemotherapeutic treatment with epirubicin (E) 90 mg/m^2 BSA + cyclophosphamide (C) 600 mg/m^2 BSA q21d. Patients' ANCs were measured at least 9 times (on average every three days), throughout the first chemotherapy (CTX) cycle.

Results

The mean time after CTX start to the ANC nadir was 13.8 days (SD 1.31; median 14.0). ANC CTCAE severity grades 3 and 4 were reached in 65 (100%) and 53 (81.5%) subjects, respectively, and mean duration of grade 3 and 4 neutropenia was 7.81 days (SD 2.46; median 7.77) and 5.57 days (SD 2.48; median 5.44), respectively, in the first CTX cycle. The onset of grade 4 neutropenia occurred between day 10 and day 15 (Table 1,2).

Figure 1. ANC trajectory (mean time course ± SD in days, N=65). CTX EC (cycle 1) was applied on day 1. On day 22 after blood sampling, the CTX EC (cycle 2) was commonly initiated.

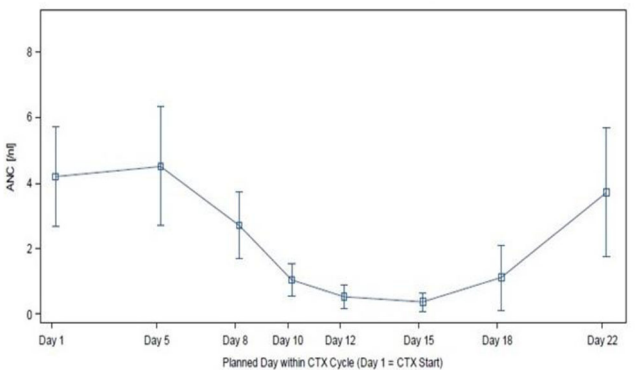

Table 1. First occurrence and presence of grade 4 neutropenia by day, in subjects who developed grade 4 neutropenia during the first CTX cycle.

	Day 9	Day 10	Day 11	Day 12	Day 13	Day 14	Day 15	Day 16	Day 17	Day 18	Day 19	Day 20	Day 21	Day 22
First Occurrence of Grade 4 Neutropenia		9%	32%	25%	15%	8%	11%							
Presence of Grade 4 Neutropenia		9%	42%	66%	79%	85%	89%	75%	51%	34%	17%	8%	6%	6%

Empty fields and days not shown of CTX cycle 1 indicate 0%. Three subjects (6%) did not provide suitable ANC measurements after Day 16, which is why their last available value was carried forward.

Table 2. Cross table of first occurrence/presence of Grade 4 Neutropenia (X%/Y%) by day in cycle 1 when neutrophil counts are assessed at two time points per cycle.

	Day 10	Day 11	Day 12	Day 13	Day 14	Day 15	Day 16	Day 17	Day 18	Day 19	Day 20	Day 21	Day 22
Day 10	9% / 9%	42% / 42%	34% / 66%	25% / 79%	17% / 85%	21% / 91%	9% / 81%	9% / 57%	9% / 40%	9% / 25%	9% / 15%	9% / 13%	9% / 13%
Day 11		32% / 42%	57% / 66%	47% / 79%	40% / 89%	43% / 96%	32% / 92%	32% / 75%	32% / 66%	32% / 51%	32% / 45%	32% / 43%	32% / 43%
Day 12			25% / 66%	40% / 81%	32% / 89%	36% / 96%	25% / 92%	25% / 85%	25% / 77%	25% / 70%	25% / 66%	25% / 66%	25% / 66%
Day 13				15% / 79%	23% / 89%	26% / 100%	15% / 94%	15% / 91%	15% / 87%	15% / 79%	15% / 79%	15% / 79%	15% / 79%
Day 14					8% / 85%	19% / 96%	8% / 91%	8% / 89%	8% / 89%	8% / 85%	8% / 85%	8% / 85%	8% / 85%
Day 15						11% / 89%	11% / 91%	11% / 89%	11% / 89%	11% / 89%	11% / 89%	11% / 89%	11% / 89%
Day 16							0% / 75%	0% / 75%	0% / 75%	0% / 75%	0% / 75%	0% / 75%	0% / 75%
Day 17								0% / 51%	0% / 53%	0% / 51%	0% / 51%	0% / 51%	0% / 51%
Day 18									0% / 34%	0% / 34%	0% / 34%	0% / 34%	0% / 34%
Day 19										0% / 17%	0% / 17%	0% / 17%	0% / 17%
Day 20											0% / 8%	0% / 8%	0% / 8%
Day 21												0% / 6%	0% / 6%
Day 22													0% / 6%

Conclusions

ANC monitoring may be most informative if measured on day 11 or day 12 to assess the first occurrence (incidence) and on days 13 to 15 for the presence of grade 4 neutropenia (prevalence). A reliable and early detection system for grade 4 neutropenia offers an opportunity for the instigation of preventative measures to mitigate the infection risk for patients.

eP293

CLINICAL IMPACT OF NEUTROPENIA AND FEBRILE NEUTROPENIA IN METASTATIC COLORECTAL CANCER PATIENTS TREATED WITH FOLFOXIRI/BEVACIZUMAB: POOLED ANALYSIS OF TRIBE AND TRIBE2 STUDIES

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Introduction
FOLFOXIRI/bevacizumab (bev) is a valid option as first-line therapy for unresectable metastatic colorectal cancer (mCRC), as reported in TRIBE and TRIBE2 trials. Here we aim at describing neutropenia (N) and febrile neutropenia (FN) associated with its use in order to estimate their clinical relevance.
Methods
Safety data of 1175 patients enrolled in the TRIBE and TRIBE2 studies were reviewed. The incidence and severity of N and FN, and the use of G-CSF in the triplet/bev and in the doublets/bev arms were compared using the Chi-square or the Fisher exact test as appropriate.
Results
Table 1 summarizes the incidence of N and FN in both arms.

	Doublet/bev	FOLFOXIRI/bev	p
Patients	589	586	
G-CSF primary prophylaxis (per clinician's decision)	5 (0.8%)	29 (4.9%)	
N ≥ G3	118 (20.2%)	276 (49.9%)	< 0.0001
Patients with FN	25 (4.28%)	41 (7.36%)	0.0405
Episodes of FN	30	48	
FN episodes with poor MASCC score (<21)	4 (13.3%)	13 (27.1%)	0.1730

G-CSF was used in 1069 (10.8%) cycles, 270 (5.3%) in doublets/bev and 799 (16.6%) in triplet/bev arms. In both arms, the majority of N and FN episodes were observed in the first two months (318/675 N≥G3 (47.11%), and 54/78 FN (69.23%)).
Conclusions
In FOLFOXIRI/bev the risk of FN was lower than 10%, thus not requiring a systematic use of primary G-CSF prophylaxis. Most FN episodes were associated with a good MASCC score. N and FN mainly occurred in the first two months of treatment, suggesting the need of a closer monitoring during the first courses of therapy.

eP294
THE EMERGENCY TREATMENT OF NEUTROPENIC SEPSIS IN THE UK - ARE WE GETTING ANY BETTER?

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Introduction
Following concerns regarding the management of neutropenic sepsis (NS), the National Institute for Health and Care Excellence (NICE) published the UK's first consensus clinical guideline in 2012. It provides clear recommendations for the emergency treatment and assessment of patients with suspected NS.
Methods
53 local adult NS policies from across the UK were reviewed for adoption of key NICE recommendations, along with 217 responses from an electronic survey of clinicians' standard clinical practice.
Results
94% of policies highlight NS as a medical emergency, with 98% defining a target 'door to needle' time for first dose antibiotics or stating antibiotics must be given immediately. 98% of clinicians also aim for 60 minutes or less to first dose antibiotics, with 47% reporting this is easy to achieve. Diagnostic criteria used in policies and by clinicians continue to vary; although 76% of clinicians report making a diagnosis is easy. Most policies encourage peripheral and central blood cultures (92%) and that several routine blood tests are checked (79%). 100% highlight that central lines do not need removed routinely and 64% that chest x-rays are not required unless clinically indicated. 85% of policies promote initial beta lactam antibiotic monotherapy (compared with 36% prior to NICE guidance), with significant reductions in empirical aminoglycosides and glycopeptides.
Conclusions
Although definitions and diagnostic criteria vary this work demonstrates a consistent approach to emergency NS management across the UK. Local policies and clinicians reported practice confirms the prioritising of NS as a medical emergency and reflects natonally recommended initial investigations and antibiotic regimens.

eP295
ROUTINE RISK STRATIFICATION OF PATIENTS PRESENTING WITH NEUTROPENIC SEPSIS - AN ASSESSMENT OF STANDARD CLINICAL PRACTICE IN THE UK

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Introduction
For patients presenting with neutropenic sepsis (NS) clinicians are encouraged to assess their risk of septic complications using a validated tool. This approach is promoted by national UK NS guidelines (NICE), and international organisations such as MASCC, ASCO and ESMO.
Methods
53 local adult NS policies from across the UK were reviewed for approaches to risk stratification, along with 217 responses from an electronic survey of clinicians' standard clinical practice.

Results
53% of policies encourage identification of 'low risk' patients within 24 hours of presentation and consider discharge on oral antibiotics prior to 48 hours in hospital (45% calculate a MASCC score, 8% their own criteria). This compares with approximately a third of policies when practice was reviewed in 2012. 40% of clinicians routinely risk stratify patients within 24 hours (70% MASCC tool, 30% institution's own risk scoring system, Modified Early Warning Score or Clinical Index of Stable Febrile Neutropenia). A wide range of approaches to early oral antibiotics, discharge and ambulatory care are described in policies and by clinicians. There is limited evidence of empirical oral antibiotics for low risk patients (9% policies, 5% clinicians) but a preference for initial intravenous antibiotics for all patients.
Conclusions
There has been some enhanced uptake of routine risk assessment and consideration of early outpatient oral antibiotics for low risk patients. However this does not appear to be widespread standard practice. Further efforts are therefore required to improve the usability and performance of currently validated tools and optimise and promote low risk management care pathways.

eP296
BACTEREMIA IN ONCOLOGIC PATIENTS AND MULTI-DRUG RESISTANT MICROORGANISMS: A GROWING ISSUE

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Introduction
Bacteremia or bloodstream infection is a cause of morbi-mortality in cancer patients, due to its severity, longer hospital stay, chemotherapy withdraw and increased costs. Its prevalence ranges 11%-38% and the mortality rate is around 40%. These numbers tend to increase with the emergence of multidrug-resistant bacteria (MDR). The authors aim alert the community to this emerging problem.
Methods
The authors collected every cancer patient hospitalized in our cancer center, who developed bacteremia during their stay in hospital or at admission, in the last 8 years. Data was treated with SPSS.
Results
A total of 184 bloodstream infections were reported, with positive cultural isolations. Almost half of the patients had gastrointestinal cancer (47,8%), followed by breast cancer (15,8%). Males were predominant (56,5%) and the median age was 65 years-old. The catheter totally implanted (CTI) was the responsible in 37,5% of the cases, and 30,4% had no identified focus. The infection contributed or was the cause of death in 38,6% of the patients. The responsible microorganism was the Escherichia coli in 24,5%, followed by the staphylococcus aureus in 14,7% of the infections. From all bacteria, 17,4% were MDR and 24% were resistant to at least one antibiotic. The staphylococcus aureus was meticilin-resistent in 37%.
Conclusions
Bacteremia is a major cause of mortality and morbidity in cancer patients and currently there are no guidelines regarding prescription of antimicrobial therapy in cancer patients or in palliative care. More than a third of the patients die and the CTI is the main source of infection.

eP297
PREVALENCE OF ANEMIA AND IRON DEFICIENCY IN PATIENTS WITH PANCREATIC DUCTAL ADENOCARCINOMA INITIATING SYSTEMIC CHEMOTHERAPY

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Introduction
Anemia and iron deficiency (ID) are common findings and complications of therapy in cancer patients. Limited data are available regarding the incidence and causes of anemia in patients with pancreatic ductal adenocarcinoma (PDAC). The aim of this study was to evaluate the incidence of anemia and the deficiency of micronutrients necessary for proper hematopoiesis.
Methods
Retrospective analysis included 82 patients with PDAC subjected to chemotherapy. Complete blood count, iron status, vitamin B12 and folate concentrations were assessed prior to the onset of systemic treatment.
Results
62 patients (75.6%) were qualified for palliative and 20 (24.4%) for adjuvant chemotherapy. Anemia (hemoglobin <12 g/dl) was noted in 33 (40.1%) patients, 27 (43.5%) in palliative and 6 (30%) in the adjuvant group. Iron deficiency (transferrin saturation <20%) was noted in 38 (46%) patients, 32 (51,5%) in palliative and 6 (30%) in the adjuvant group. Functional iron deficiency (FID) occurred twice more often than actual iron deficiency (AID) in every group (Table 1). Vitamin B12 and folate deficiency were rare findings, were noted respectively in 4 (4.9%) and 6 (7.2%) individuals. Interestingly, in 20 (32,3%) patients from palliative group elevated level of vitamin B12 was noted, whereas in the adjuvant group it was not observed.
Conclusions
Anemia and ID were frequently noted in patients with PDAC before systemic therapy. Iron status assessment is crucial in the management of PDAC patients qualified to the chemotherapy.

eP298
PHARMACOKINETIC/PHARMACODYNAMIC ASSESSMENT OF A PROPOSED PEGFILGRASTIM BIOSIMILAR MSB11455 VERSUS THE CURRENTLY LICENSED PEGFILGRASTIM: A RANDOMIZED, DOUBLE-BLIND TRIAL

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Introduction
MSB11455 is a proposed biosimilar to the currently licensed pegfilgrastim (Neulasta®). This phase I study (NCT03251248) assessed the pharmacokinetic (PK)/pharmacodynamic (PD) bioequivalence of MSB11455 to Neulasta®.
Methods
Healthy volunteers were randomized to one of two crossover sequences, MSB11455/Neulasta® or Neulasta®/MSB11455. Subjects received a single subcutaneous dose of either MSB11455 or Neulasta® (both 6 mg/0.6 mL) on Day 1 of each study period. Samples for PK/PD analysis were taken predose and up to Day 16 postdose. Immunogenicity samples were taken predose and up to Day 84 postdose. Safety was assessed throughout the study.
Results
244 subjects were randomized and received both treatments. For all primary PK/PD parameters 90% repeated confidence intervals of geometric mean ratio of MSB11455 versus Neulasta® were within the pre-defined equivalence range (80.00%–125.00%): AUC0–∞ (96.59, 112.82), AUC0–last (97.29, 113.96), Cmax (97.13, 114.99), Emax (98.74, 102.39) and AUE0–t (97.30, 100.23). Safety and tolerability as well as immunogenicity were comparable between treatment sequences. No

filgrastim-specific neutralizing antibodies were detected in either treatment sequence.

Conclusions

PK/PD equivalence of MSB11455 and pegfilgrastim was demonstrated with comparable immunogenicity, safety, and tolerability. This study supports the biosimilarity of MSB11455 to Neulasta®.

eP299

FEVER OF UNKNOWN ORIGIN (FUO) IN CANCER PATIENTS

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Introduction

Fluorodeoxyglucose 18 PET CT scan has been proposed as a routine exam for the follow-up of FUO but not yet as an initial diagnostic tool.

Methods

Prospective, non-interventional study, in cancer patients who met the criteria of FUO and underwent a standard work-up in order to reach an etiological diagnosis.

Primary objective was to study the contribution of the PET-CT scan to the diagnostic approach of FUO in adult cancer patients as an initial exam.

Results

13 cancer patients with FUO were included from 30/09/2016 -14/11/2018. Mean age: 54 years (23-88 years); 7 women - 6 men, T°max: 38.7 - 39.9°C, for at least 5 days (median 11 days).

The PET identified the origin of the FUO in 10 patients (77%): 6 cancer progression/ relapse, 2 infections, 2 others causes((1 kikutchi disease, 1 drug-induced).

One patient remained undiagnosed and two others had a specific diagnosis without the contribution of PET(1 drug induced and 1 poly-arthritis). Treatment modification after the PET was made in 8 patients (61%). Specific treatment was successful with fever resolution in 5 cases [2 chemotherapy, 2 immunosuppressive therapy, 1 surgical drainage]; 3 had discontinuation of previous treatments.

Conclusions

In the initial approach of FUO in cancer patients the FDG-PET scan can be useful to identify the origin of fever and to exclude other treatable causes of fever.

eP300

ASSESSMENT OF CANCER RELATED ANOREXIA CACHEXIA IN AN INTEGRATED PALLIATIVE/ SUPPORTIVE MEDICINE SETTING- AN OBSERVATIONAL PILOT STUDY

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Introduction

Anorexia cachexia syndrome has been recognized as an important modifiable factor in cancer prognostication.

Methods

A questionnaire based assessment comprising of demographic characteristics, symptoms of CACS, secondary nutrition impact symptoms, haematological and biochemical parameters was performed among 61 patients who presented to the out patient setting.

Results

The average age of participants was 47.4 years. 63.9 percent had an ECOG performance score of 1. The most common site of involvement was Breast followed by Head and Neck squamous cell carcinoma. 21 (32.8 %) patients were receiving ongoing chemotherapy. The mode of feeding was oral in a majority of patients (90.2%). Loss of subcutaneous fat was documented in 52.5 percent whereas ascites, edema and muscle wasting were present in 1.6, 14.8 and 59 percent. Loss of apetite, early satiety and generalized weakness were present in 93.4, 91.8 and 93.4 percent. Mean number of symptoms of CACS in each patient were 2.78. Mean number of SNIS were 4.54. The most common SNIS were Fatigue (67.2%), dysgeusia (59%) and xerostomia (49.2%). Major effects of cancer anorexia cachexia included Anxiety/ depression (50.8%) and eating related distress (42.6%). Average MEDD was 44.21 mg. No correlation was observed between the number of SNIS and MEDD. Mean Hb was 10.38 gm/dl, TLC was 9452/ul, Platelet count was 285680/ul, ANC was 7852/ul. Mean creatinine and albumin levels were 0.81 mg/dl and 3.78 gm/dl respectively.

Conclusions

A nomogram combining haematological, biochemical parameters and number of SNIS is essential for identifying patients at risk for progression from pre cachexia to cachexia.

eP301

EFFECT OF ENTERAL NUTRITION AND MEGESTROL ACETATE IN MALNOURISHED CANCER PATIENTS: A REAL-WORLD STUDY

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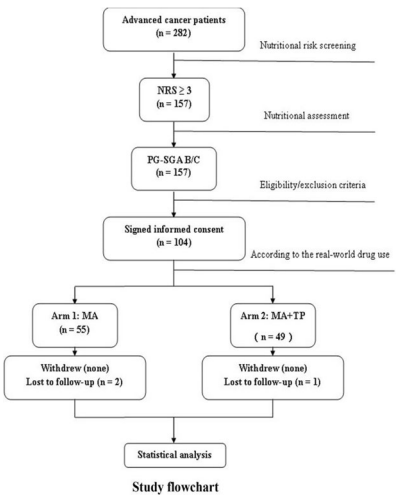
Introduction

The optimal treatment of cancer-related malnutrition remains unknown. A real-world study was performed to compare the effectiveness of enteral nutrition (EN) and megestrol acetate (MA) with MA alone in the treatment of cancer-related malnutrition.

Methods

101 patients were observed during June 2016 to August 2017, including Arm 1 (n = 53, 52.5%) using MA (160 mg/d), and Arm 2 (n = 48, 47.5%) using MA (160 mg/d) combined with EN (Enteral nutrition powder, 55.8 g/t.i.d). Treatment duration was 12 weeks. All patients could receive anticancer therapy. The primary endpoints were improvements in body mass index (BMI) and Eastern Cooperative Oncology Group (ECOG) score. Secondary endpoints were assessed by appetite, mid-upper arm circumference (MAC), serum pre-albumin levels, and serum albumin levels.



Study flowchart

Results
Baseline levels were comparable between Arm 1 and Arm 2 patients. Primary (ECOG, P = 0.001) and secondary (appetite, P = 0.005; serum pre-albumin, P = 0.011; and serum albumin, P = 0.003) endpoints improved significantly after treatment in Arm 2. Toxicity was negligible and comparable between Arm 1 and Arm 2.
Conclusions
MA combined with EN may be a safe, convenient, and effective treatment option for cancer-related malnutrition.

eP302
ROLE OF NUTRITIONAL SUPPLEMENT ENSURE PROTEIN MAX ON CALORIE AND PROTEIN INTAKE, APPETITE AND BODY WEIGHT IN PATIENTS WITH ADVANCED CANCER RECEIVING CHEMOTHERAPY

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Introduction
Anorexia-cachexia occurs in up to 80% of patients with advanced cancer. Early satiety, taste change and decreased appetite leads to weight loss. The objective of this study is to analyze if nutritional supplementation with Ensure Protein Max contributes to increased appetite, improved body weight and well-being in patients with cancer.
Methods
All patients received the oral nutritional supplement Ensure Protein Max 235 ml twice daily for 90 days. Patient data was collected, Body composition analyses and Timed up and Go (TUG) were performed, Edmonton Symptom Assessment Scale (ESAS) and Patient-generated Subjective Global Assessment (PG-SGA) were administered before and after the completion of the 90 day intervention period.
Results
Seventeen patients (Male-10; Female-7) were enrolled; median age 67 years (47 to 82 years). 6 patients had Lung cancer, three had Breast cancer, 3 had colorectal cancer, two with prostate cancer and 3 patients had gastric cancer, multiple myeloma and lymphoma respectively. In all 17 patients, Karnofsky performance score median was 60%; Weight median 62.6 kg, BMI median 23.0 kg/m2. TUG median was 15.3 seconds and the Total PGSGA median score was 10. Three patients completed the 90 days program, all were males; significant improvement in ESAS were noted in Pain (p=0.05), Tiredness (p=0.05) and Anxiety (p=0.05). Six patients are presently active while 8 patients discontinued the study; 5 did not like the taste or could not tolerate while 3 died because of disease progression.
Conclusions
Nutritional supplements in patients with Anorexia Cachexia may lead to less symptoms, possible improved physical functions and body weight.

eP303
ASSOCIATION BETWEEN IL-6 AND NUTRITIONAL STATUS IN METASTATIC CANCER PATIENTS

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Introduction
Cancer cachexia, is a syndrome characterized by weight loss, anorexia and malnutrition, which has been shown in about 50%-80% of cancer patients and accounts for 20% of the causes cancer-related mortality. IL-6 is an inflammatory factor shown frequently in cancer cachexia patients. The aim of our study was to investigate the association between IL-6 and nutritional status in metastatic cancer patients
Methods
We measured serum IL-6 level in blood samples were collected from a total of 31 metastatic cancer patients. We divided into two group high and normal IL-6 level, and analyzed the correlation with nutritional status through blood test.
Results
Of 31 patients, 15 showed normal level of IL-6. The other 16 patients with high IL-6 level showed decrease of hemoglobin, protein, albumin, vitamin D, zinc, selenium, and increase of CRP.($p<0.05$)
Conclusions
Patients with high IL-6 strongly necessary appropriate nutritional management before going into cachexia due to the fact that they show malnutrition not regardless of their body weight.

eP304
HIGH DOSE VS. LOW DOSE VITAMIN D SUPPLEMENTATION ON PHASE ANGLE VALUES IN OLDER PATIENTS WITH PROSTATE CANCER ON ANDROGEN DEPRIVATION THERAPY

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Introduction
Introduction: Androgen deprivation therapy leads to muscle loss and frailty in men with prostate cancer. Some studies suggest vitamin D has a dose-dependent impact on muscle mass and frailty. Phase angle is an indicator of muscle loss and frailty and is calculated from bioelectrical impendence analysis (BIA). Here we investigated if high-dose vitamin D supplementation impacts phase angle.
Methods
Methods: This was a secondary analysis where patients with prostate cancer (N=59, age 67.6 ± 5.4) and vitamin D insufficiency (<32 ng/ml) were randomized to high-dose vitamin D (n=29, 600 IU/daily plus 50,000 IU/weekly) or low-dose: RDA for vitamin D (n=30,600 IU/daily plus placebo weekly) for 24 weeks. BIA was conducted at baseline, 12 and 24 weeks. Phase angle was calculated from BIA outputs using **atan**(-reactance/resistance)x(180°/π). Multivariate regression evaluated differences in phase angle values. A phase angle value <5.7° is a validated cutoff for frailty in older men.
Results
Results: The high-dose vitamin D group had wider phase angle values at 12 weeks (5.81° vs. 5.32°; p=0.017) and 24 weeks (5.89° vs. 5.40°; p=0.007) than the low-dose group. One average, the low-dose group had phase angle values <5.7° over the course of the study, whereas the high-dose vitamin D group maintained values >5.8°.
Conclusions
Conclusion: The high-dose vitamin D group maintained wider phase angle values over the course of 24 weeks, suggesting less frailty, while phase angle values for the low-dose group declined from baseline. BIA is a low-cost, portable method for assessing phase angle and frailty in cancer patients.

eP305
ASSOCIATION OF NUTRITIONAL STATUS WITH POSTOPERATIVE OUTCOME IN PANTREATIC SURGICAL PATIENTS

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Introduction
Nutritional status plays an important role in the postoperative outcome and the prognosis of various cancers. This study evaluated preoperative nutritional status-related indices associated with clinical outcome of malignant patients who underwent pancreatectomy.
Methods
Data were prospectively collected from 76 patients who underwent pancreatectomy from August to September 2017 and retrospectively analyzed. Nutritional status assessment included a diagnosis of malnutrition (ASPEN), body weight, body mass index, serum albumin, prognostic nutrition index(PNI) and intake at discharge.
Results
In multivariable analysis preoperative low PNI (≤44) was an independent prognostic factor for long hospital stay after surgery in patients underwent pancreaticoduodenectomy and total pancreatectomy [odds ratio (OR): 7.50, 95% confidence interval (CI) : 1.48-37.91; $P < 0.05$]. For overall survival, cancer stage ($p = 0.003$), age ($p = 0.026$), chemotherapy treatment ($p = 0.014$), diagnosis of malnutrition ($p = 0.031$), low PNI (≤44) ($p = 0.006$) by univariate analysis, and cancer stage ($p = 0.014$) and low PNI (≤44) ($p = 0.039$) by multiivariate analysis, were independent and significant predictors of poor patient outcome.
Conclusions
PNI may be an independent indices of malignant patients who underwent pancreatectomy.

eP306
AUSTRALIAN CANCER CLINICIANS' AWARENESS, PERCEPTIONS AND PRACTICES REGARDING CANCER-RELATED MALNUTRITION AND SARCOPENIA

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Introduction
Cancer-related malnutrition and sarcopenia are independently associated with reduced survival, increased treatment toxicities and poorer function. International evidence-based guidelines exist to guide nutrition screening and interventions. However, despite the severe consequences, little is known about Australian cancer clinicians' awareness of these conditions and practices relating to their identification and management. This study aimed to determine clinician awareness, understanding and perceptions of malnutrition and sarcopenia in people with cancer.
Methods
A cross-sectional survey of Australian cancer clinicians was undertaken between November 2018 and January 2019. The 30-item online survey was circulated through professional organisations and health services.
Results
The 111 participants represented dietetic (38%), nursing (34%), medical (14%) and allied health (14%) clinicians. Overall, 95% and 93% clinicians were aware of accepted definitions of malnutrition and sarcopenia, respectively, with 93% agreeing these were extremely or very important conditions in the overall management of people with cancer. However, perception of responsibility for identification of these conditions varied considerably. Further, 21% and 43% of clinicians had limited or no confidence in their ability to identify malnutrition and sarcopenia, respectively. Greatest barriers to identification of malnutrition were a lack of time and services to manage malnourished patients. Greatest barriers to identification of sarcopenia were lack of evidence to support this practice and not being an organisational priority.
Conclusions
Awareness of cancer-related malnutrition and sarcopenia are high among Australian cancer clinicians. Although, the identification of these conditions is limited by variation in perceived responsibility and lack of confidence. A national position statement is required to improve care.

eP307
INVESTIGATING MALNUTRITION AMONG CANCER PATIENTS RECEIVING CHEMOTHERAPY IN A TERTIARY CARE HOSPITAL OF PAKISTAN.

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Introduction
Cancer patients often suffer from Malnutrition which raises the risk of infections. Being immunocompromised, there is a marked reduction on quality of life (QoL) and health outcome. Malnutrition also enhances the incidence of postoperative complications such as delayed wound healing, wound dehiscence, morbidities and mortalities. To investigate malnutrition among cancer patients and to assess the nutritional status of patients receiving chemotherapy.
Methods
The study was conducted in Sir Ganga Ram Hospital, Lahore. Simple screening tool (Short screening sheet) for malnutrition was used. Nutritional assessment of 80 patients receiving chemotherapy was done by assessing BMI, mid upper arm circumference MUAC, triceps skinfold thickness TST, serum albumin, Total lymphocytes count. Nitrogen Balance and intake of macronutrients were also analysed.
Results
According to full nutritional assessment, 42 patients (52.5%) out of 80 were found malnourished. Short screening sheet identified 51 patients as malnourished who were receiving chemotherapy. The SSM had a specificity of 0.88 and sensitivity of 0.72. 62% of the patients exhibited negative nitrogen balance.
Conclusions
Nutrition is the most neglected area of clinical care. Early nutritional support and counselling is essential in order to improve patients Quality of Life (QoL). Mass media should be involved so that adequate attention can be given to nutritional issues arising in diagnostic and therapeutic procedures

eP308
MASCC NUTRITION AND CACHEXIA STUDY GROUP NEEDS ASSESSMENT TO DETERMINE THE VIEWS, PRACTICES AND BEHAVIOURS OF HEALTHCARE PROFESSIONALS WORKING WITH PATIENTS IN THE CANCER SETTING.

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Introduction
Oncology clinicians support the nutritional management of cancer patients thus improving their nutritional status, quality of life and reducing morbidity. The aim of this study was to investigate the attitudes, practices and behaviours of the MASCC Nutrition and Cachexia Study Group as well as clinicians from other health professional organisations.
Methods
An online survey was disseminated through the mailing lists of MASCC and multiple healthcare organisations over 3 months. The survey consisted of 46 questions with a mixture of Likert scale and open-ended questions, and respondents could select common issues from a supplied list as well as providing "other" options.
Results
We received 232 responses from 22 countries; the majority of clinicians being: Dietitians (34%), Physicians (16%) and Nurses (12%). The greatest challenges were health services barriers (37%), health literacy of patients (34%) and inconsistent patient followup (40%). Qualitative data indicated inconsistent health messaging between the professions, a need for better interdisciplinary action and common interdisciplinary resources. Most (95%) clinicians had nutrition screening in their facilities and half felt confident in its use (major nutrition screening tools being: MST (45%); PG-SGA SF (12%); and MUST (9%). The most common nutrition assessment tools were PGSGA (35%) and SGA (23%). Body composition (BIA (12%) and CT scans (6%)) and hand grip strength (16%) were less frequently used.
Conclusions
This survey provides a baseline summary of the knowledge, behaviour and needs of a cohort of international and multidisciplinary oncology clinicians which can be used to target the development of interdisciplinary guidelines and oncology nutrition education.

eP309
NEW ERA OF MICROBIOME BASED THERAPIES; POSTBIOTICS. ARE THERE ANY EVIDENCE TO USE IN CANCER PATIENTS?

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Introduction
There is no doubt that cancer is a major health burden and a driving force behind the most of the novel therapies however, therapeutic failure is a vital problem that may be related to gut bacteria according to growing body of evidence in medical literature. We all familiar with the concepts of Microbiome, Prebiotics, Probiotics and synbiotics. Postbiotics are soluble products and metabolites of microorganisms that have biological activities and may be a safer alternative to live microorganisms especially in immunocompromised hosts such as cancer patients. Aim of this study is to review the current literature about the use of postbiotics in patients receiving chemotherapy.
Methods
Keywords "postbiotics" and "Chemotherapy" or "Cancer" were searched in databases of Pubmed and Web of Sciences until 01.01.2019.
Results
This search yielded only 5 articles, of which 4 of them are reviews and only one article was about postbiotic use in inflammatory bowel disease.
Conclusions
Bacteriocins, exopolysaccharides, and short chain fatty acids, classified as postbiotics, exhibited efficacy in terms of attenuation of mucositis in animal studies and in vitro cell cultures via increased apoptosis and decreased cancer cell survival. However, no human data was encountered during the search, that underlines the necessity of human studies on this popular and promising area with the virtue of safety and most of the health benefits of probiotics.

eP310
ANAMORELIN AND CANNABINOIDS FOR THE TREATMENT OF CANCER ANOREXIA: FRIENDS OR FOES?

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Introduction
Cancer Anorexia (CA) affects between 40-60% of all cancer patients, and 50-80% of patients with advanced disease. Anamorelin and cannabinoids are among the most promising therapeutic agents for CA.
Methods
Anamorelin is a potent ghrelin mimetic. Ghrelin is a peptide hormone, predominantly secreted by gastric endocrine cells, to induce food intake. Ghrelin is a ligand for the G-protein-coupled ghrelin receptor, which is highly concentrated in the paraventricular, ventromedial and arcuate nuclei of the hypothalamus. This coupling stimulates neuropeptide Y (NPY) and agouti-related peptide (AgRP) activity. Increasing concentrations of NPY increases food intake and decreases energy expenditure, while AgRP acts as an antagonist to anorexigenic melanocortin receptors. As with ghrelin, anamorelin binds to the ghrelin receptor, leading to the downstream expression of NPY and AgRP, thus leading to appetite stimulation.
Cannabis, particularly delta-9-tetrahydrocannabinol, acts on the CB1 cannabinoid receptor to stimulate appetite, partly through the modulation of ghrelin production. Ghrelin levels increase and Peptide YY (PYY) levels, an anorexigenic peptide released by gastrointestinal mucosa, decrease after smoking cannabis in HIV patients. Cannabis-related changes in these hormones have a magnitude similar to what is observed with food intake over the course of a day in healthy volunteers, suggesting physiological relevance.
Results
Table 1: Comparison of Anamorelin to Cannabinoids for Appetite Stimulation in Cancer Anorexia

	ANAMORELIN	CANNABINOIDS
Mechanism of action	Potent ghrelin mimetic with a strong affinity for the ghrelin receptor	Induce ghrelin increase and modulate the activity of cells that respond to ghrelin in CNS
Mode of administration	Oral	Inhaled and oral
Onset	30-240 minutes (m)	3-60 m (inhaled) 60-90 m (oral)
Duration	7-12 hours (h)	2-4 h (inhaled) 8-12 h (oral)
Indication	Continuous appetite stimulation (AS)	AS surge right before meals (inhaled); on-going AS (oral)

Conclusions
Anamorelin and medical cannabis can be proposed as complementary therapeutic approaches for CA (Table 1). This possibility remains to be evaluated in experimental and clinical controlled studies.

eP311
HYPOGONADISM IN CANCER CACHEXIA: EFFECT ON SYMPTOMS AND BODY COMPOSITION

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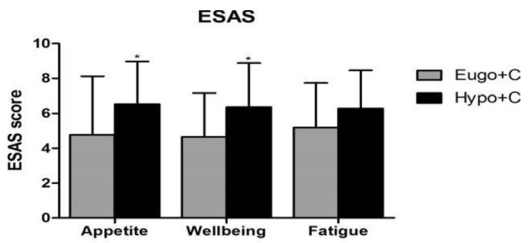
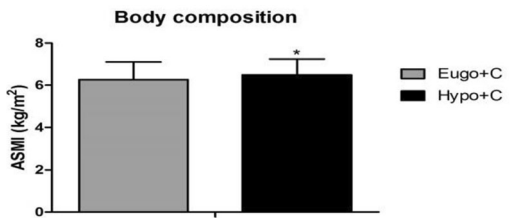
Introduction
Hypogonadism is common among men with advanced cancer. Little is known about the impact of hypogonadism on symptoms and body composition in cancer cachexia.
Methods
A retrospective chart review of men referred to a Cancer Rehabilitation Program was performed. All men had bioavailable testosterone (BT) measured. Patients were classified as hypogonadic (hypo) or eugonadic (eugo) based on age-specific cutoffs. Additionally, patients were identified as cachectic (C), as defined by Vigano et al. (Clin Nutr. 36:1378-1390, 2017). Body composition was measured using dual-energy X-ray absorptiometry; appendicular skeletal muscle index (ASMI) was calculated. The revised Edmonton Symptom Assessment System questionnaire (ESAS-r) was completed. Men who had prostate or testicular cancers were excluded.
Results
Eighty patients were included (mean age 67.2±10.2 y). The overall prevalence of hypogonadism was 31.2%. When comparing the eugo+C and hypo+C patients respectively, ESAS-r scores for appetite (4.78±3.34 vs 6.54±2.43; p=0.02) and wellbeing (4.66±2.50 vs 6.37±2.51; p=0.006) were significantly greater in hypo+C patients. In addition, fatigue exhibited a statistical trend between the two groups (5.20±2.54 vs 6.29±2.17; p=0.07). A statistically, but not clinically, significant difference in ASMI was found between the eugo+C versus the hypo+C patients (6.27±0.87 vs 6.50±0.75 kg/m2; p=0.029); both groups fell far below the cutoff (7.26 kg/m2) for normal muscle mass.





Conclusions
Male hypogonadism may negatively impact quality of life and cancer symptoms, but not ASMI, in cancer cachexia. Consequently, when cachexia is clinically established, testosterone replacement therapy may be of greater use for symptom management, rather than preservation of muscle mass.

eP312
THE SIGNIFICANT RISK FACTORS RELATED TO POOR NUTRITIONAL STATUS WITHIN ONE- YEAR AFTER SURGERY IN PATIENTS WITH PANCREATIC TUMOR

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Introduction
Significant changes in nutritional status are the major concern in the patients with pancreatic tumor after surgery. The risk factors with poor nutritional status among this population have not been studied. Therefore, the aim of this study was to explore the risk factors related to poor nutrition within one year after surgery in patients with pancreatic tumor.
Methods
A longitudinal study was conducted in surgery clinics. Patients with pancreatic tumor were going to receive surgery were recruited. The data were collected at four times including before surgery (T0), 3, 6, and 12 months after surgery (T1, T2, T3). Mini Nutritional Assessment (MNA), Symptom Severity Scale, and demographic and disease information were used, and the risk of poor nutritional status has been identified as score less than 12 in the MNA. Generalized estimating equation with unstructured working logit matrix was used to explore the risk factors with poor nutritional status.
Results
Among 75 patients, patients having regular exercise (OR = 0.395), operation with PPPD (OR = 0.242) and at T3 (OR = 0.431) had lower risk with poor nutritional status. However, the patients had surgical complication (OR = 2.579), higher symptom severity (OR = 1.041) and at T1 (OR = 2.434) had higher risk with poor nutritional status.
Conclusions
Encouraging patients keeping with regular exercise might be the modifying factor to prevent from poor nutrition and decreasing surgical complication and symptom severity were the factors that health care providers could pay more attention on them after surgery for this population.

eP313
PATIENT SOURCES OF DIETARY AND NUTRITIONAL INFORMATION AFTER A CANCER DIAGNOSIS

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Introduction
Nutrition-related problems in cancer are under-recognised and under-treated. Few healthcare professionals discuss nutrition/diet with cancer patients. Consequently, patients may seek information from other sources. Information sources and types of advice accessed are unknown. This study aimed to determine the source and type of nutritional/dietary information accessed by cancer patients prior to first dietetic assessment and the degree to which advice was followed.
Methods
This prospective, multi-center, cross-sectional observational study recruited consecutive cancer patients at seven tertiary centers. During initial dietetic assessment, a dietitian determined all nutritional/dietary information accessed since cancer diagnosis.
Results
49 participants recruited. Median age: 61. Median time from diagnosis to initial dietetic assessment: 4 months. In rank order the sources of information prior to dietetic referral were; 1) family/friend (n=20), 2) healthcare professional (n=14), 3) media (n=9) and 4) online forums/websites (n=9). Nine (18%) accessed no information. Avoidance of certain foods, particularly sugar, dairy and meat was most common advice. The consumption of fruit, vegetables, protein, juices and wholegrain was promoted. 53% followed and 8% partially followed advice. Many expressed regret that dietetic referral had not occurred earlier.
Conclusions
1. Dietary advice prior to dietetic referral came from friends, family, media and online forums and websites.
2. In a minority, dietary advice was provided by healthcare professionals prior to dietetic referral.
3. Most advice related to the avoidance and/or promotion of particular foods.
4. Cancer patients want dietary advice from dietitians at diagnosis to prevent unnecessary avoidance of certain foods and to reduce the risk of unintentional weight loss.

eP314
COGNITION DIFFERENCE OF TUMOR NUTRITION RISK AMONG THORACIC CANCER PATIENTS, THEIR FAMILY MEMBERS, PHYSICIANS AND NURSES

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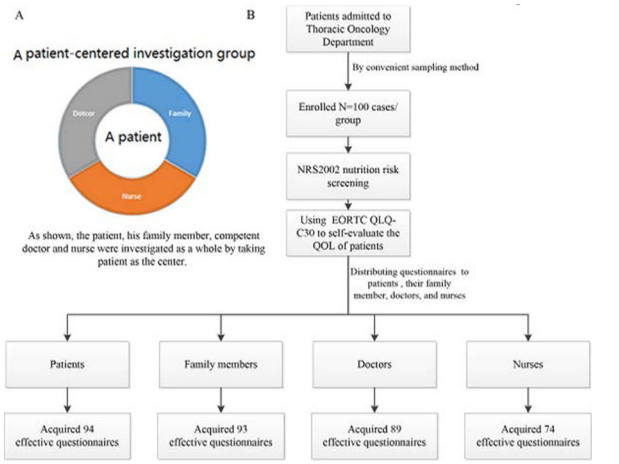
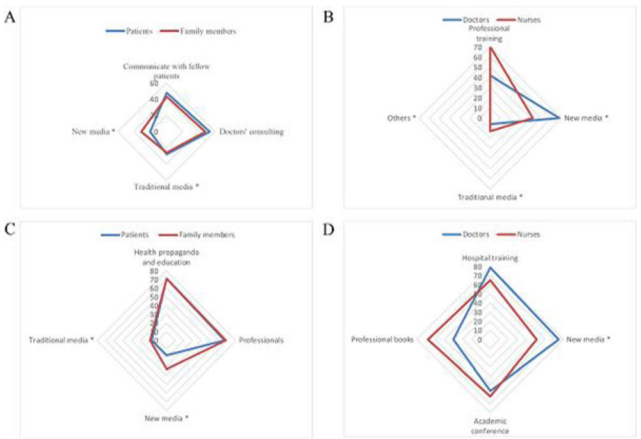
Introduction
To investigate the cognition difference among patients with cancer, their family members, their physicians and their nurses in nutrition status and nutritional therapy.
Methods
The enrolled patients were evaluated by NRS2002 nutritional risk scale and QLQ-C30 scale. The patient-centered groups, including the patient, the main caretaker, the physician and the nurse, were given a questionnaire on the cognition and attitude of cancer nutrition therapy.
Results
The incidence rate of nutritional risk in hospitalized patients with thoracic cancer was 13.8%. There were significant differences in the accuracy rate of nutritional risk assessment among the four groups ($P < 0.001$), in which nurse's was 70.3%, 55.1% of physician, 38.7% of family members and 33.0% of patients, which was the poorest accuracy rate. However, there was no significant correlation between the accuracy of nutritional risk assessment and the education level and personal monthly income of each population ($P > 0.05$). Nearly all the four groups considered it necessary to learn more about the knowledge of cancer nutrition therapy. For patients and their families, the main way to understand the knowledge of tumor nutrition was communicating with patients and professionals; for doctors was new media, and nurses was professional training.





Nutritional risk assessment correct rate	Population				X^2	*P* value
	patient	family	physician	nurse		
Count (number of people)	31	36	49	52	28.193	<0.001
Proportion (%)	33.0%	38.7%	55.1%	70.3%		

Conclusions
Nurses ' assessment of nutritional risk in cancer patients achieved the highest accuracy, while the poorest accuracy raised from the patients. The vast majority of patients and their families, as well as all physicians and nurses, deemed it necessary to understand cancer nutrition therapy, but the need to access relevant information varies.

eP315
SPECIFIC NUTRIENTS AS A COMPLEMENTARY TREATMENT IN HTLV-1 INFECTIONS

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Introduction
Adult T-cell leukemia is resistant to chemotherapy and with no known cure. The leukemogenesis of the virus is attributed to the viral oncoprotein, Tax, that activates the nuclear factor kappa B (NF-κB) which in turn stimulates the activity and expression of the matrix metalloproteinase- 9 (MMP-9) which are important in angiogenesis and metastasis. The objective of this study is to investigate the efficacy of a specific nutrient synergy (SNS) on Tax expression, NF-κB levels as well as on MMP-9 activity and expression both at the translational and transcriptional levels in HuT-102 and C91-PL cell lines.
Methods
The effects of non-cytotoxic concentrations of SNS ranging from 0-350 μg/ml were evaluated for their efficacy on proliferation, Tax expression, NF-κB mobility and the activity and expression of MMP-9. ELISA and EMSA were used to assess the effect of SNS on NF-κB mobility. Zymography was used to determine the activity and secretion of MMP-9. The expression of MMP-9 was done using RT-PCR at the translational level and Immunoblotting at the transcriptional level.
Results
A significant inhibition of proliferation was seen in both cell lines starting at SNS concentration of 200μg/ml in a dose dependent manner. SNS induced a dose dependent decrease in Tax expression, which was paralleled by a down-regulation of the nuclearization of NF-κB. This culminated in the inhibition of the activity of MMP-9 and their expression both at the transcriptional and translational level.
Conclusions
The potential role of nutrients should be emphasized in the treatment of cancer.

eP316
STATUS AND REAL MEANING OF DIET FOR TERMINAL STAGE CANCER PATIENTS IN JAPAN -ANALYSIS OF WRITTEN RECORDS OF PATIENTS' BATTLE AGAINST DISEASE-

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Introduction
We can assume that diet does not only represent nutritional support for cancer patients in the terminal stage. This study is intended to clarify the actual status and meaning of diet for cancer patients in the terminal stage by analyzing written records of patients' battles against the disease, using text mining methods.
Methods
Eight records of their battles against the disease, written by cancer patients and their families, were analyzed by extracting sentences and words about diet using text mining methods.
Results
The following most commonly used words were identified through word frequency analysis: "diet", "patient" and "favorite food". As a result of cluster analysis, descriptions about diet were classified into four clusters. The four clusters were interpreted as follows; "Eating by mouth means life", "The last hope", "Pleasure in eating", and "Appreciation of being able to eat food". The co-occurrence network analysis showed that words with high centrality included "eat" and words strongly associated with target words included "life" and "pleasure ".
Conclusions
Cancer patients appreciated every day when they could eat, and they considered eating to be their last remaining pleasure. Therefore, it was suggested that eating could provide them with a real feeling of living, and play an important role in connecting them with the hope of living. It is essential to support cancer patients in the terminal stage to allow them to eat without experiencing as little pain as possible, because eating plays a very important role in the mental health of these patients.

eP317
XEROSTOMIA INDUCED BY IMMUNE CHECKPOINT INHIBITORS: HISTOPATHOLOGICAL AND CLINICAL CHARACTERIZATION

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Introduction
Immune checkpoint inhibitors (ICI) are used for a wide range of cancers by enhancing immune responses against malignant cells. Dermatologic toxicities represent the most frequent immune-related adverse events. Oral changes induced by checkpoint inhibitors have received limited attention to date in clinical trials. Xerostomia, dysgeusia and lichenoid reactions are the main reported oral toxicities. To the best of our knowledge, we report the largest series of patients suffering from dry mouth induced by immune checkpoint inhibitors.
Methods
Clinical and immunohistological characterizations of 15 patients treated by ICI and addressed the Oral medicine department of a reference center.
Results
We report a series of 15 patients with xerostomia induced by immune checkpoint inhibitors. All patients were treated for metastatic cancer. They were treated with an antiPD1/PDL1 antibody, either in monotherapy or in association with an anti-CTLA4 antibody. The mean time between the initiation of ICI first infusion and the occurrence of dry mouth was 17 weeks. Most patients had low grade symptoms. Biopsy of accessory salivary glands was performed. Chisholm mean score was 2 (range 0-4). Autoantibodies (anti-SSA/Ro, anti-SSB/La, antinuclear antibodies) were negative except in one patient who developed a Sjogren syndrome. Immunohistological analysis individualized lymphocytic infiltration, showing a predominance of T-cells CD4 positive infiltrate. Oral basic support care to manage xerostomia was prescribed with no or moderate improvement.
Conclusion
Xerostomia induced by immune checkpoint inhibitors may appear either in isolated manner or exceptionally in the context of Sjogren syndrome.

The symptomatology is related to T-cells CD4 infiltrate induced by ICI. Xerostomia represents a real adverse effect with ICI poorly reported in the literature and the incidence remains probably underestimated.

eP318
USE OF A MULTI-PRONGED STRATEGY TO RAISE THE IMPLEMENTATION RATE OF ORAL CARE AMONG HEAD AND NECK CANCER PATIENTS

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Introduction
This study proposed that the implementation of appropriate oral care education in a clinical care setting can not only promote oral comfort and reduce the incidence of lesions, but also prevent the occurrence of treatment-related side effects and, thus, improve the therapeutic effect of treatments.
Methods
1. An oral care educational video was filmed. The film covered issues such as the importance of oral hygiene, assessment methods, cleaning procedures, tool preparation, cleaning steps, and mouth washing procedures.
2. Depending on the patient's condition with respect to pain and in accordance with physician orders, analgesic drugs or mouthwashes with analgesic effects may be prescribed, such as in the case of patients who find it difficult to open their mouths due to the presence of tumors; a 10cc syringe and rubber tube may be used to extract the mouthwash and simulate the act of rinsing, after which a small cotton swab and suction tube may be used to assist in the cleaning process..
Results
Through the use of the health education leaflets and the QR code to promote access to the health education video and information on actual procedures, patients and their family members were able to understand the health information better, resulting in an increase in the oral care implementation rate of the patients to 85%.
Conclusions
The nursing issues most commonly encountered by head and neck cancer patients are those related to the oral mucosa, and proper oral care or oral hygiene can help prevent the occurrence of issues such as oral mucositis.

eP319
SIX-FOLD REDUCTION IN INFECTIOUS DENTAL EMERGENCIES DURING INDUCTION CHEMOTHERAPY IN PATIENTS WITH NEWLY-DIAGNOSED ACUTE MYELOID LEUKEMIA WHEN SCREENED FOR ACUTE ODONTOGENIC INFECTION PRIOR TO TREATMENT

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Introduction
Guidelines suggest that odontogenic infections should be eliminated prior to initiation of chemotherapy. Particularly, patients with newly-diagnosed acute myeloid leukemia (AML) are at risk of infection during induction chemotherapy (IC) which results in profound neutropenia and thrombocytopenia. Accordingly, we initiated a prospective clinical screening program intended to diagnose and treat acute odontogenic infections in patients with AML prior to IC, with the goal of reducing the rate of infectious dental emergencies (historic rate 4.28%; 95%CI:2.0-6.56%) during the induction period.
Methods
Screening examinations are recorded in a dental database. The database and dental charts (n=1888) were reviewed to identify cases fulfilling the following inclusion criteria: 1) Diagnosis of "AML or other related neoplasms" 2) Admission for IC to authors institution 3) Presented for dental screening or dental emergency while admitted for IC between Nov 1, 2014 and Dec 31, 2016. Two independent reviewers assessed each chart to determine if the dental emergency represented an infectious dental emergency.
Results
In total, 337 patients with AML were admitted for IC to the authors' institution from Nov 1, 2014 to Dec 31, 2016. Of the 149 patients screened, 8 underwent dental extractions prior to IC and 1 patient presented with an infectious dental emergency during IC (0.67%; 95%CI:-0.64-1.98%). Of the 188 patients not screened, 8 presented with an infectious dental emergency during IC (4.26%; 95%CI:1.37-7.15%), a statistically significant difference (p=0.042, a=0.05).
Conclusions
Screening for acute odontogenic infections prior to IC in patients with AML resulted in a 6-fold reduction in infectious dental emergencies during the induction period.

eP320
HUMAN PAPILLOMA VIRUS 16/18: FABRICATOR OF TROUBLE IN ORAL SQUAMOUS CELL CARCINOMA

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Introduction
The Human Papilloma Virus (HPV) has evolved as a new culprit of malignant and pre malignant oral lesions. The objective of this study was to find out the association between Human Papilloma Virus (HPV) genotypes 16/18 in Pakistani patients with oral squamous cell carcinoma (OSCC).
Methods
DNA from oral rinse of 300 subjects was taken. The subjects included 100 cases with OSCC and 200 controls. Samples were analyzed by both conventional and real time PCR using "HPV consensus Gp5+/Gp6+ and HPV 16, 18 specific primers
Results
Out of 300 persons, 74/300 (25%) were found to be infected with HPV: "46/100(46%) from cases and 74/200(14%) from controls". The distribution was: HPV16, 6/300 (8%): 4/100 (9%) from OSCC group and 2/200 (8%) from controls while HPV 18 was 9/300(12%): 5/100(11%) from cases and 4/200(16%) from controls. Out of 300 subjects, 26(35%) were infected by "both HPV 16/18 (23(50%) from cases and 3(12%) from controls". Persons who were infected with HPV 16&18 had higher chances to develop OSCC as compared to those who didn't have HPV 16/18 (AOR: 21.4, 95% CI: 5.73 – 80.8).
Conclusions
The exposure to high risk strains of Human papilloma virus (16/18) in combination can be fabricator of trouble ($p < 0.001$, Adjusted odds ratio; 21.42) in OSCC.

eP321
SCREENING OF ORAL CANCER PATHOLOGY AND RISK FACTORS AT PRIMARY CARE LEVEL IN JODHPUR, INDIA

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Introduction
Globally, India has a high burden (20%) of oral cancer with 1% prevalence of premalignant lesions. Most cases are attributed to modifiable risk

factors such as substance abuse (tobacco and alcohol), dietary deficiencies, and environmental exposures (solar radiation and air pollution) aggravated by delayed detection and care especially in rural areas.

Methods

An unmatched case–control study was done at two randomly chosen rural health centers in Jodhpur, India. A total of 84 cases and 168 controls were included during 6 months study period (2016). Randomly selected outpatient department attendees were interviewed and screened for oral cancer and pre-malignant lesions. A structured questionnaire interview along with comprehensive oral, head and neck examination was conducted. Data were analyzed using multivariate logistic regression, and confidentiality of data was maintained.

Results

The majority of the study participants were rural residents (82.9%) with poor socioeconomic status. Opportunistic oral screening revealed a variety of cancerous and precancerous lesions. Most common case pathologies were submucosal fibrosis (40.5%), inadequate mouth opening (35.7%), cheek bites (28.6%), leukoplakia (23.8%) etc. Multivariate analysis suggested that tobacco intake (adjusted odds ratio = 13.6, $P \leq 0.01$) dietary deficiency (7.4, <0.01), oral sepsis (7.0, <0.01), oral lesions (6.8, <0.01), and sun radiation exposure (9.5, <0.01) were significantly associated with oral cancer pathology.

Conclusions

The study provides strong evidence that tobacco, dietary deficiency, oral sepsis and lesions, and sun radiation exposure are independent risk factors for oral cancer. It also reiterates the importance and application of opportunistic oral cancer screening at primary care level.

ePP322

IMPROVING THE ACCURACY RATE OF SELF-CARE OF THE ORAL CAVITY IN PATIENTS AFTER HEAD AND NECK TUMOR SURGERY

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Introduction

An investigation was undertaken and it found that the correctness for self-oral care was only 63.4%, the satisfaction of patients towards the instructions for the oral care given by the nursing staff was only 80.3%.

Methods

Measures for improvement were started in January 2016 which included: (1) establishing a standard guideline for oral care care after head and neck cancer surgery, (2) creating leaflets and manuals for post-operative care of head and neck cancer surgery, (3) recording the oral care instructions in multimedia format and corresponding QR codes easily accessible through mobile devises,(4) designing a checklist of appropriate oral care instruments which the patients can tick off according to their personal needs, (5) designing patient self-care care progress sheet, (6) conducting regularly phone interviews and follow-ups and building a data base on the analysis of the results.

Results

After the implementation of the above-mentioned measures, the correct rate of self-oral care for patients with head and neck cancers was remarkably increased from 63.4% to 90.2%. The satisfaction of patients towards the instructions for the oral care given by the nursing staff was increased from 80.3% to 94.8% as well.

Conclusions

The design of leaflets, manual and multimedia material for oral care after head and neck cancer not only enhanced the convenience in the instructions by the nursing staff but also greatly improved the learning efficiency and correctness by the patients and their primary caregivers, thus achieving the goal that the patients could take care of themselves correctly on their own.

ePP323

CHARACTERIZATION OF ORAL AND RADIATION-RELATED CARIES MICROBIOTA THROUGH METAGENOMIC ANALYSIS: PRELIMINARY RESULTS

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Introduction

Radiation-related caries is one of the major long-term side effects in the oral cavity related to head and neck radiotherapy. Although dental caries is a biofilm and sugar dependent disease, the pathogenesis of this disease when associated with radiotherapy remains poorly understood and the possible oral microbiome changes after head and neck radiotherapy needs better investigation and characterization. Therefore, this study aims to characterize the microbiota of caries related to radiotherapy.

Methods

28 individuals were divided into groups: IC: irradiated patients with dental caries; NIC: non-irradiated patients with dental caries. Carious dentin, oral mucosa, supragingival plaque and gingival crevicular fluid samples will be collected at the time of initial diagnosis of caries lesions and submitted to metagenomic and PCR assays to identify the microbial population profile from the sequencing of the 16S ribosomal gene on the Illumina platform. Bioinformatics analyzes will be performed to determine the differences in the composition of microorganisms in each group and correlation with clinical parameters.

Results

Preliminary results showed that irradiated patients had lower alfa-diversity (Kruskal-Wallis; *p-value*=0,014) when compared with control patients. Compositional analysis demonstrated increased relative frequency of genera *Veillonella*, *Lactobacillus* and lower abundance of *Porphyromonas* and *Tannerella* in irradiated samples compared with non-irradiated samples.

Conclusions

Head and neck cancer patients had lower microbiota's alfa-diversity and notable presence of genus related with lactate production.

ePP324

RELATIONSHIP BETWEEN CLINICAL CONDITIONS AND ORAL SIDE EFFECTS OF HEAD AND NECK RADIOTHERAPY: PILOTY STUDY

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Introduction

Head and neck radiotherapy is associated with acute and chronic complications in the oral cavity. However, there are still gaps in the understanding of the risk factors for these complications. The objective of this study was to evaluate the clinical conditions correlated with acute (mucositis and candidiasis) and chronic (radiation caries and xerostomia) outcomes in patients undergoing radiotherapy for head and neck (H&N) cancer.

Methods

Observational study with 40 patients submitted to a minimum dose of 5.000cGY by IMRT in HN region. The incidence of these complications was correlated with: 1-Patient conditions (age and Decayed-Missing-Filled Index), 2-Tumor conditions (location and staging) and 3-Treatment (surgery, chemotherapy and surgical gland injury). The correlation between the outcomes was also evaluated.

Results
Mucositis: tumors in cervical localization had lower incidence of mucositis than the other localizations (p: 0.02); Candidiasis: Stages III-IV presented higher incidence of infection (20.6%), than stages I-II (0%), (p: 0.03); Radiation caries: surgical lesion of the submandibular gland was a risk factor for caries (odss r.: 4.89); Xerostomia: None of the studied clinical conditions were associated with xerostomia but there was a strong correlation between caries and xerostomia (xerostomia: 33.3% with caries against 0% of caries in patients without xerostomia), p:0.04.
Conclusions
Tumor localization reduced the risk of mucositis, while staging III-IV presented a higher risk of candidiasis. Surgical damage of submandibular gland and xerostomia increased the risk of caries.

eP325
THE USE OF AN INTRAORAL DEVICE TO PROTECT ORAL TISSUES AND REDUCE SIDE EFFECTS DURING RADIOTHERAPY IN HEAD AND NECK CANCER

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Introduction
Intraoral devices may be useful for patients under radiotherapy in head and neck region due to mechanical separation of oral structures, distancing healthy tissue that does not need to receive radiation and, therefore, reducing side effects resulting from radiotherapy and improving patients' quality of life. The aim of this research was to evaluate the use of intraoral devices in patients submitted to Intensity-modulated radiotherapy and its side effects.
Methods
Individuals were divided into two groups: control group (CG), 12 patients without the device and study group (SG) 12 patients using the device. Patients were followed up from oral care before radiotherapy to after cancer treatment. Oral mucositis was evaluated according to World Health Organization criteria (CG and SG) and Oral Mucositis Assessment Scale (SG). Development of trismus (SG) was assessed through questionnaire.
Results
There was a greater incidence in severity of oral mucositis in CG and lower degree of development of erythema and oral mucosa ulcers in SG ($p < 0.05$). The mouth opening capacity after radiotherapy treatment in SG was decreased by an average of 10.3%.
Conclusions
The planning of distribution of isodoses in tumor and adjacent areas by computed tomography was facilitated using the device due to mechanical spacing of oral structures not compromised by cancer. The stabilization of the mouth and tongue position during radiotherapy made the treatment more comfortable for the patients, besides benefiting the work of the radiotherapist and medical physicist.

eP326
EVALUATION OF AN ORAL CARE PROTOCOL FOR CHEMOTHERAPY AND RADIATION THERAPY INDUCED ORAL COMPLICATIONS IN HNC (HEAD AND NECK CANCER) PATIENTS

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Introduction
Radiation therapy and chemotherapy are inherently associated with the production of various complications, ranging from the initial oral mucositis, xerostomia to osteo radio/chemo necrosis.
Methods
The aim of this study was to develop an oral care protocol and evaluate its effectiveness in HNC patients receiving chemotherapy and radiation therapy. This interim analysis included a single-blind randomized control trial conducted among 44 HNC patients in which 22 were assigned to experimental group and 22 to a control group who received standard of care (SOC) of oral care. Intervention group received oral care kit which consisted of ultra-soft bristle toothbrush, fluoridated toothpaste, oral rinses, chewy tube and patient education material. The outcome variable was measured by an oral health assessment tool and WHO oral mucositis grading scale.
Results
Oral care protocol did not affect the development of the incidence of oral complications. However, median days to mucositis, taste loss, infection, bleeding gums and xerostomia were statistically significant in comparison with control ($p<0.05$). Significant difference was found in mucositis grading on 3rd, 4th and 5th week assessment ($p<0.05$) and severity was lower in the experimental group. The experimental group oral health assessment score during admission was decreased by .483 and at its end of treatment score was decreased by .270 indicating improved oral health.
Conclusions
Administration of a specific oral care protocol by trained staff nurses shown to improve oral health and awareness regarding oral complications among patients. This study recommends implementation of oral care protocol for all HNC patients in cancer nursing practice.

eP327
HOW IMPORTANT IS THE PREVENTIVE ORAL CARE IN REDUCING THE INCIDENCE OF MRONJ IN ONCOLOGIC PATIENTS?

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Introduction
MRONJ is a discussed topic nowadays.
Aim of this study is to evaluate the incidence of MRONJ in oncologic patients who received preventive oral care and to compare it with who didn't.
Methods
This retrospective study evaluated 74 oncologic (53 female and 21 male) who had been or were in treatment with zoledronate.
Recommendation by SIPMO/SICMF (Italian Society of Oral Pathology and Medicine/Italian Society of Maxillofacial Surgery) were applied
Group I: patients received preventive dental visit before starting the treatment in the Dental Clinic of University of Padua.Group
II: patients received preventive dental visit in private dental clinicsGroup III: patients didn't receive preventive dental visit.
Results
In group I, 50% of the patients presented stage 1 osteonecrosis and 50% stage 2. No stage 3 was reported.

In group II, 35.1% of the patients presented stage 1 osteonecrosis, 59.5% stage 2 and 5.4% stage 3.
In group III 38.9% of the patients who didn't receive a preventive dental visit presented stage 1 osteonecrosis, 44.4% stage 2 and 16.7% stage 3.
Surgical procedures were performed in 55.6% of the patients in group I, 83.8% of the patients in group II and in 84.2% of the patients in group III.
Farmacological treatment and follow-up was sufficient for the remission of osteonecrosis in the remaining patients. A relapse was noticed in 24.3% of the patients and new localization of osteonecrosis was noticed in 10.8% of the cases.

Conclusions

Preventive oral care should mandatory before the use of zoledronate in in order to reduce the risk and the seriousness of MRONJ.

eP328

PHOTOBIOMODULATION FOR ALVEOLAR REPAIR IN PATIENTS SUBMITTED TO DENTAL EXTRACTION AFTER HEAD AND NECK RADIATION THERAPY: A DOUBLE-BLIND RANDOMIZED PILOT STUDY

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Introduction

Delayed alveolar repair after dental extraction are frequently observed in patients submitted to head and neck radiation therapy, and its adequate management is important to prevent osteoradionecrosis. This study aimed to evaluate the efficacy of photobiomodulation the alveolar mucosal repair of patients submitted to dental extractions after head and neck radiation therapy.

Methods

Forty surgical procedures randomly allocated into two groups: Photobiomodulation (PBM, 19 procedures: - dental extraction + PBM - 808 nm, 40mW, 100J/cm2, 70s, 2.8 J/point and area of 0,028cm^2) and Sham-PBM (21 procedures – dental extraction + sham-PBM). Both groups received antibiotics and primary closure of the surgical site. The primary outcome was complete mucosal lining at 14 days, and the secondary outcomes were infection and postoperative pain at seven days. The patients were evaluated every 7 days during a time interval of 28 days.

Results

Alveolar mucosal repair was shown to be faster in PBM; at 14 postoperative days 18/19 (94.7%) patients evolved with complete alveolar mucosal lining (p-value<0.001, number needed to treat=1.056). PBM patients reported post-operative pain less frequently (21.1% x 66.7%, p-value=0.005), and also reported lower analgesics intake (p-value=0.005).

Table 1. Baseline features of patients and clinical data.

Variables	G1 (n=19):	G2 (n=21):	Total	p-value
	N (%) or Mean ± Standard Deviation			
Sex				
Male	15 (78.9)	14 (66.7)	29 (72.5)	0.488[1]
Female	4 (21.1)	7 (33.3)	11 (27.5)	
Age	58.2 ± 11.2	54.5 ± 10.2	56.2 ± 10.7	0.326[3]
Drug Allergy				
No	19 (100.0)	21 (100.0)	40 (100.0)	-
Comorbidity				
No	12 (63.2)	17 (81.0)	29 (72.5)	0.293[1]
Hypertension	7 (36.8)	4 (19.0)	11 (27.5)	
Symptoms (months)	7.2 ± 5.5	9.8 ± 9.2	8.5 ± 7.7	0.466[3]
Localization of Primary Tumor				
Oral	3 (21.1)	11 (52.4)	14 (37.5)	0.022[2]
Head and neck (non-oral)	16 (78.9)	10 (47.6)	26 (62.5)	
Staging				
Staging I/II	12 (63.2)	17 (81.0)	29 (72.5)	0.293[1]
Staging III/IV	7 (36.8)	4 (19.0)	11 (27.5)	
Treatment				
Surgery and Radiotherapy	12 (63.2)	16 (76.2)	28 (70.0)	0.369[2]
Surgery, Radiotherapy and Chemotherapy (12 sessions)	7 (36.8)	5 (23.8)	5 (30.0)	
End of treatment (months)	66.8 ± 52.9	76.1 ± 66.2	71.7 ± 59.7	0.641[3]
Radiotherapy Dose				
Up to 65Gy	14 (58.3)	10 (41.7)	24 (60.0)	0.249[2]
>65Gy	5 (31.0)	11 (69.0)	16 (40.0)	
Irradiated Field				
Mandible	15 (78.9)	10 (47.6)	25 (62.5)	0.068[2]
Maxilla	1 (5.3)	6 (28.6)	7 (17.5)	
Maxilla and Mandible	3 (15.8)	5 (23.8)	8 (20.0)	

1- Exact Fisher Test; 2 -Verisimilitude Ratio Test; 3- Non-parametric Mann Whitney Test

Table 2. Distribution of pain and its treatment, infection, bone exposure and alveolar mucosa lining among patient submitted to dental extractions following head and neck radiation therapy.

Variables	G1 (n=19):	G2 (n=21):	Total	p-value
	n(%)			
Pre-operative pain				
No	6 (31.6)	13 (61.9)	19 (47.5)	0.067[1]
Yes	13 (68.4)	8 (38.1)	21 (52.5)	
Post-operative Pain				
D0	- (-)	- (-)	- (-)	-
D7	4 (21.1)	14 (66.7)	18 (45.0)	0.005[1]
D14	- (-)	2 (9.5)	2 (5.0)	0.488[1]
D21	- (-)	- (-)	- (-)	-
D28	- (-)	- (-)	- (-)	-
Analgesic Administration (days)				
D7	4 (21.1)	14 (66.7)	18 (45.0)	0.005[1]
D14	- (-)	- (-)	- (-)	
D21	- (-)	- (-)	- (-)	
D28	- (-)	- (-)	- (-)	
Pre-operative infection				
No	18 (94.7)	20 (95.2)	38 (95.0)	1.000[1]
Yes	1 (5.3)	1 (4.8)	2 (5.0)	
Post-operative infection				
D7	- (-)	- (-)	- (-)	-
D14	- (-)	- (-)	- (-)	-
D21	- (-)	- (-)	- (-)	-
D28	- (-)	- (-)	- (-)	-
Bone exposure (presence in millimeters)				
D7	- (-)	- (-)	- (-)	-
D14	- (-)	- (-)	- (-)	-
D21	- (-)	1 (4.8)	1 (2.5)	1.000[1]
D28	- (-)	1 (4.8)	1 (2.5)	1.000[1]
Alveolar Mucosa lining				
D7				
G1	- (-)	19 (90.5)	19 (47.5)	0.000[2]
G2	17 (89.5)	2 (9.5)	19 (47.5)	
G3	2 (10.5)	- (-)	2 (5.0)	
D14				
G1	- (-)	2 (9.5)	2 (5.0)	0.000[2]
G2	1 (5.3)	19 (90.5)	20 (50.0)	
G3	18 (94.7)	- (-)	18 (45.0)	
D21				
G2	1 (5.3)	16 (76.2)	17 (42.5)	0.000[1]
G3	18 (94.7)	5 (23.8)	23 (57.5)	
D28				
G2	- (-)	1 (4.8)	1 (2.5)	1.000[1]
G3	19 (100.0)	20 (95.2)	39 (97.5)	

1 - Exact Fisher Test; 2- Verisimilitude ratio test

Table 03. Efficacy measures of photobiomodulation related to pain and mucosal healing Efficacy measures of photobiomodulation related to pain and mucosal healing among patient submitted to dental extractions following head and neck radiation therapy.

Variables	RR (IC95)	ARR (IC95)	NNT (IC95)
Post-operative Pain			
D7	0.316 (0.126 - 0.794)	0.456 (0.184 - 0.729)	2.192 (1.372 - 5.445)
Alveolar Mucosa lining			
D14	0.053 (0.008 - 0.355)	0.947 (0.847 - 1.048)	1.056 (0.954 - 1.181)

1- Exact Fisher Test; 2 - Verisimilitude Ratio Test; CI95= Confidence Interval of 95%, RR=Relative Risk, ARR = Absolute Relative Risk; ARR=Absolute Risk Reduction; NNT=Number Necessary to Treat

Conclusions

This study primarily demonstrated the efficacy of PMB in promoting a faster alveolar mucosal healing with less post-operative pain following dental extractions in patients submitted to head and neck radiation therapy.

eP329

DEVELOPMENT OF ORAL HEALTH-RELATED SELF-EFFICACY SCALE FOR THE CANCER PATIENTS

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Introduction

This study developed the Oral health-related Self-Efficacy scale for the Cancer patients (OSEC), which contains 17 questions with four response options each.

Methods
Between July 2018 and February 2019, 120 participants were enrolled in the study. We conducted the survey to examine the validity and reliability of OSEC. Concurrent validity was determined by correlations with the self-efficacy scale for advanced cancer (SEAC). Discriminant validity was examined using cancer stage grouping between stages I–II and III–IV. Predictive validity was examined using plaque control record. This study was conducted with the approval of the Medical Ethics Committee of Shimane University Faculty of Medicine (No.3243). We calculated two-tailed p-values in all of the analyses. The alpha level of significance was set at 0.05.
Results
Factor analysis revealed five factors in OSEC. Cronbach's α coefficient, an indicator of internal consistency, was 0.77-0.86. Intraclass correlation coefficient of the OSEC total score, an indicator of test retest reliability, was 0.89. OSEC scores were significantly associated with scores for each factor of the SEAC. The difference of total score and all subscales of OSEC were statistically significant between clinical tumor stages I–II and III–IV ($P<0.05$). The plaque control record of the high score group of OSEC was significantly lower than low score group of OSEC ($P<0.05$).
Conclusions
We developed the OSEC as a multidimensional oral health-related self-efficacy scale for the cancer patients.

eP330
A STUDY ON EFFECTIVENESS OF INTENSITY MODULATED RADIOTHERAPY FOR XEROSTOMIA DURING HEAD AND NECK RADIOTHERAPY

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Introduction
Xerostomia is one of the main acute and late complications that result in decreased patient's QOL during and after head and neck radiotherapy (HNRT). IMRT is widely accepted as a technique for preventing xerostomia caused by HNRT. However, the effectiveness of IMRT has been mainly reported about late xerostomia, and the effectiveness of IMRT for acute xerostomia has not yet been made clear. Therefore, the amount of saliva and the patient's symptoms during HNRT was investigated to identify the effectiveness of IMRT for acute xerostomia.
Methods
Patients with HNRT were divided into two groups, the IMRT group and the 3DCRT group. The change of salivation and the patient's symptoms were prospectively investigated in each group. In addition, the relationship between the mean radiation dose of the salivary glands and the reduction of salivary function was investigated.
Results
In both groups, the amount of saliva was significantly decreased and the patient's symptoms were also significantly worse. Additionally, there was no statistically significant difference between the two groups. After HNRT, 3DCRT group did not show any tendency to recover them. On the other hand, the IMRT group recovered the stimulated saliva statistically significantly.
Conclusions
IMRT could alleviate late xerostomia, unfortunately the effectiveness for acute xerostomia was not indicated. Therefore, even though IMRT is selected, it is necessary to provide management of acute xerostomia similar to 3DCRT. Since the IMRT group showed the need for a long time to recover salivary function, management of late xerostomia after HNRT is important for keeping patients' QOL.

eP331
THE EFFECTS OF "MOUTH OPENING LAUGHTER YOGA" ON TRISMUS RELATED SYMPTOMS AND MOOD IN THE SURVIVORS OF MOUTH CANCER IN TAIWAN: AN EXPERIMENTAL STUDY PROPOSAL

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Introduction
Trismus is a common adverse effect of mouth cancer treatments. It has negative impacts on the survivors' life. Although trismus can be treated with conventional exercises either using simple tools or advanced devices, the efficacy of these exercises is limited because the exercise programs are difficult and therefore not appealing to the affected population.
Objectives
This study aims to develop a user-friendly and interesting program called "Mouth Opening Laughter Yoga" for the mouth cancer survivors and assess its effects on trismus-related symptoms.
Methods
Fifty mouth cancer survivors who have trismus will be recruited from a Taiwanese hospital. The subjects will be randomly assigned to either an experimental group (n = 25) and a control group (n = 25). The experimental group will conduct "Mouth Opening Laughter Yoga" following a 20-minutes film daily for 10 weeks. To decrease the attrition rate, the researcher will guide the subjects to conduct laughter yoga together once a week. The control group will do mouth exercise following a conventional mouth exercise CD for the same exercise frequencies as the experimental group. The outcome will be measured by a Jaw ROM Scale, Mandibular Function Impairment Questionnaire, EORTC Quality of Life Questionnaire Head & Neck 35, and Profile of Mood State.
Results
It is expected that "Mouth Opening Laughter Yoga" program can decrease trismus-related symptoms and improve mood, and the findings can serve as useful reference for developing interventions for patients with trismus.
Conclusions
This mouth exercise program is helpful for the patients with trismus to improve their quality of life.

eP332
SENSITIVITY AND SPECIFICITY OF THE QUESTION "DO YOU HAVE CONCERNS WITH YOUR MOUTH WHEN UNDERGOING SURGERY?" FOR PERIOPERATIVE PATIENTS WITH CANCER

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Introduction
Perioperative oral management is important to avoid dental/ systemic problems. However, routine perioperative professional dental checkup is generally not performed, and management might rely on a patient's answer to this simple question: "Do you have concerns with your mouth when undergoing surgery?" This study aims to evaluate the sensitivity and specificity of this simple question.
Methods
In this study, 361 consecutive preoperative patients with cancer (M, 192; F, 169; 24-90 y, median, 69 y) who presented to our division were enrolled. Patients were requested to answer this simple question: "Do you have concerns with your mouth when undergoing surgery?" Thereafter, dentists examined patients with the aim of (1) preventing acute odontogenic pain caused by pulpitis and/or acute odontogenic infection during the perioperative period, (2) enabling patients to achieve oral nutrition/ingestion by dental treatment, and (3) preventing dental injury during orotracheal intubation. The sensitivity and specificity of this question were retrospectively evaluated.

Results
Overall, 73 patients answered "Yes," and 50 were found to have some oral problems, whereas 23 were without problems. Moreover, 288 patients answered "No," but 117 were found to have some oral problems, whereas 171 were without problems. The sensitivity and specificity of this question were 0.30 and 0.88, respectively.
Conclusions
The simple question, "Do you have concerns with your mouth when undergoing surgery?" for preoperative patients with cancer had low sensitivity but high specificity. Patients with some oral concerns should be examined and treated professionally. Routine pre-examination under general anesthesia by dental professionals is desirable for surgical safety.

eP333
TOOTH INFECTION DURING THE CHEMOTHERAPY FOR MALIGNANT MUSCULOSKELETAL TUMOR

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Introduction
Tooth infection is often seen in the myelosuppression period after cytotoxic chemotherapy and can impede regular administration of the drugs, which could deeply affect the treatment outcome. To prevent this problem, we have conducted oral health management. In this study, the outcome of the oral health management in the patients with malignant musculoskeletal tumor was investigated.
Methods
The patients who received chemotherapy for malignant musculoskeletal tumor and professional oral health care from January 2012 to January 2019 were eligible for the study. The exclusion criteria were edentulous patient, no examination of the periodontal pocket depth and panorama X-ray, and tumor or metastasis located in head and neck. The medical records were retrospectively analyzed.
Results
Seventy-one patients were eligible. Fourteen patients had over 6mm of the periodontal pocket depth. Forty-nine patients had 3rd molars, 32 of them had impacted or semi-impacted 3rd molars. Thirty-three patients had apical periodontitis. Tooth infections occurred in 10 patients, G2 tooth infections in 6 patients and G3 in one patient. Acute periodontitis occurred in 3 patients, in 2 of them, the teeth with over 6mm of the periodontal pocket depth were related. 6 patients had pericoronitis, half of them were related with impacted or semi-impacted 3rd molars. One patient had acute apical periodontitis. Tooth infections accompanied with G3 or G4 neutropenia in 6 patients and with febrile neutropenia in one patient occurred.
Conclusions
This study indicated oral health management during the chemotherapy for malignant musculoskeletal tumor was important. Further studies are required to prevent febrile neutropenia from tooth infection.

eP334
ORAL HEALTH AND QUALITY OF LIFE IN PATIENTS WITH TERMINAL CANCER

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Introduction
Oral problem is prevalent in terminally ill cancer setting. The aim of the study was to determine the oral health status and its change over time, and to determine the predictive effects of oral health status, nutritional status, and patient characteristics on oral health-related quality of life (QoL) in patients with terminal cancer.
Methods
This was a multi-centre prospective study of cancer patients with <6 months life expectancy. Subjects completed Oral Health Impact Profile-14 (OHIP-14), EORTC QLQ Core 15 Palliative, and Xerostomia Questionnaire at baseline (T1) and at 7-18 days apart (T2). Their oral health, functional and nutritional status were assessed using Oral Cavity Assessment Tool (OCAT), Palliative Performance Scale and Patient-Generated Global Assessment, respectively.
Results
210 subjects (mean age 71.2 ± 12.5 years) completed T1 assessment, and 185 completed both time point assessments. 23% had upper gastrointestinal cancer. Results show a significant increase in OCAT total score from T1 (mean 20.7 ± 5.3) to T2 (mean 21.6 ± 5.9) ($p<0.05$) and in Xerostomia Questionnaire total score from T1 (mean 22.6 ± 15.4) to T2 (mean 24.3 ± 16.1) ($p<0.05$). Multivariate regression reveals that a higher score of respective subscale of OHIP-14 at T1, higher Xerostomia Questionnaire total score at T2, increased no. of medication, semi-solid food, female gender and Malay ethnicity were significantly associated with a poor oral health-related QoL in various domains of OHIP-14 at T2 (R^2 ranged from 42.6% to 62%).
Conclusions
Patients with terminal cancer experience poor oral health-related QoL and xerostomia is most predictive to poor QoL.

eP335
TONGUE FUNCTION AND ITS INFLUENCE ON MASTICATORY PERFORMANCE IN PATIENTS TREATED FOR ORAL CANCER; A 5-YEAR PROSPECTIVE STUDY

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Introduction
Mastication is a coordinated process, integrating control, sensory input, and muscle function. Food is positioned on the occlusal surfaces by the cheek and tongue and pulverized through chewing. The objectives of this study were to observe the impact of oral oncological treatment and recovery after treatment of several tongue functions (*i.e.* force, mobility and sensory functions), and to study the influence of these tongue functions on masticatory performance.
Methods
Masticatory performance and tongue force, mobility and sensory functions were determined in 123 patients with oral cavity cancer. Assessments were performed 4 weeks before and 4 to 6 weeks, 6 months, 1 and 5 years after treatment. Generalized estimation equations and mixed model analyses were performed, correcting for previously identified factors in the same population.

Results
A significant deterioration in tongue mobility and sensory function was observed in patients with mandible and tongue and/or floor of mouth tumors. Better tongue force and sensory function (thermal and tactile) influenced masticatory performance positively, and this effect is stronger with a decreasing number of occlusal units. The effect of both the tongue force and maximum bite force is weaker in dentate patients in comparison to patients with full dentures. A web based application was developed to provide insight in the coherence between the found factors in the mixed model.
Conclusions
Tongue function deteriorates after oral oncological treatment, without statistical significant recovery. Adequate bite and tongue force is especially important for patients with poor prosthetic state. Patients with sensory tongue deficits especially benefit from more occluding pairs.

eP336
ORAL REHABILITATION IN PATIENTS AT RISK OF MEDICATION-RELATED OSTEONECROSIS OF THE JAWS: A CASE SERIES

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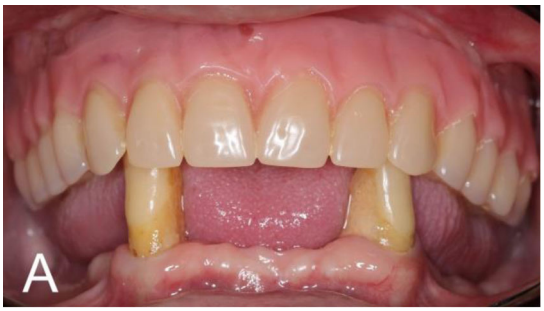
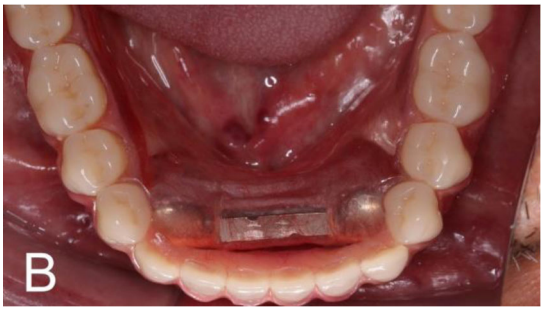
Introduction
Based on the experience gained with oral rehabilitation in patients with cancer submitted to therapies with antiresorptive and/or antiangiogenic agents combined with scientific evidence in databases, this case series aims to describe oral rehabilitation recommended by the Clinical Research Center at Bauru School of Dentistry of the University of São Paulo. We described specific management of the patient during the rehabilitation process and the choice of the most suitable dental prosthesis (Figures 1A and 1B).





Figures 1A and 1B. Patient with chronic myeloid leukemia submitted to Imatinib therapy rehabilitated with teeth supported overdenture to avoid dental implant use.
Methods
Methods were investigated in scientific literature for rehabilitation to minimize the chances of MRONJ that may be caused by trauma related to these prostheses, as well as the management of these patients during the rehabilitation clinical stages.
Results
Eight patients with history of cancer and submitted to an antineoplastic therapy which may cause MRONJ were treated with dental prostheses according to their specific needs and limitations. No patient was diagnosed with post rehabilitation MRONJ. Follow-up period ranged from 3 to 41 months. (Table 1).
Table 1. Recommended methods for rehabilitation for each patient.

PATIENT	CANCER	MEDICATION	TYPE OF PROSTHESIS	FOLLOW-UP	TREATMENT VIABILITY
Patient 1	Chronic Myeloid Leukemia	Imatinib	Overdenture Teeth supported	3 months	Possible: resilient liner to avoid harm to soft tissues
Patient 2	Breast Cancer	Pamidronate	Fixed Partial Denture	4 months	Possible: if there is no harm to soft tissues and/or bone
Patient 3	Multiple Myeloma	Zoledronic acid	Overdenture supported by pre-existing dental implants	9 months	Possible: resilient liner to avoid harm to soft tissues
Patient 4	Breast Cancer	Trastuzumab	Teeth Supported Removable Partial Denture	27 months	Possible: Conventional if teeth supported
Patient 5	Hepatocellular carcinoma	Alendronate	Removable Partial Denture with distal extension	6 months	Possible: resilient liner considering distal extension
Patient 6	Melanoma	Imatinib	Teeth Supported Removable Partial Denture	5 months	Possible: Conventional if teeth supported
Patient 7	Breast Cancer	Pamidronate	Total prosthesis	41 months	Possible: resilient liner to avoid harm to soft tissues
Patient 8	Breast Cancer	Trastuzumab	Fixed Partial Denture	6 months	Possible: if there is no harm to soft tissues and/or bone

Conclusions
Dental rehabilitation considering systemic limitations imposed by MRONJ, excluding clinical stages that may bring harm to both soft tissues and bone like extended surgeries, implants and conventional removable prostheses seems to be possible and favorable. However, it is cleared the need for more solid evidence described in literature.

eP337
FORMING A CANCER CENTER PATIENT FAMILY ADVISORY COUNCIL (PFAC): ENHANCING THE PATIENT EXPERIENCE AND DRIVING PATIENT-CENTERED CARE

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Introduction
Patient Family Advisory Councils (PFAC) can play a pivotal role in fostering a culture of patient- and family-centered care within a department, specific service line, and larger organization or medical center. The success of PFACs on quality improvement initiatives and the patient experience hinges on the steps taken to developing and implementing these groups.
Methods
The major phases of PFAC development will be demonstrated: (1) inception and idea; (2) stakeholder identification and buy-in; (3) medical/health care team members; (4) promotion and outreach; (5) recruitment; (6) identification of projects and initiatives; (7) evaluation and maintenance.
Results
Barriers and other special considerations to PFAC development will be presented, specifically related to the phases described in the methods section. Best practices and lessons learned will also be discussed as it relates to development of a PFAC devoted to the oncology population.
Conclusions
PFAC influence and impact on the patient experience and satisfaction will be presented, particularly through real-world examples of patient-provider collaborations and partnerships in the oncology setting. The

benefits to both the patient/caregiver and healthcare populations as a result of PFAC partnerships will also be examined and discussed. Future perspectives and potential collaborative projects between oncology healthcare providers and PFAC members will be listed. The ongoing success of PFACs depends on these partnerships and connections.

eP338
EFFECTS OF VITAMIN B12 AND KETOROLAC ON PAIN IN LONG EVANS RATS

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Introduction
Effects of vitamin B_{12} on pain have been demonstrated in different animal and human studies. But comparison of these effects with similar effects of ketorolac tromethamine (KT) and their combination have not been established. To assess the effects of vitamin B_{12} on pain and also to compare them with those of the combinations of vitamin B_{12} with KT in rat models.
Methods
This experimental study was conducted in the Department of Physiology, Bangabandhu Sheikh Mujib Medical University, Dhaka, from March 2015 to February 2016. For this, 20 (twenty) Long Evans rats (215±35 gm) of both sexes were divided into control (A, with 5 ml/kg normal saline) and experimental (B1, with 15 mg/kg B_{12}; B2, with 10 mg/kg KT; B3, with B_{12}+KT) groups with 5 rats in each group. All the drugs and vitamin were administered intraperitoneally in a single dose just one hour before formalin test. Statistical analysis was done by ANOVA, followed by Bonferroni post hoc test. In the interpretation of results, $p \leq 0.05$ was considered as significant.
Results
B12 lowered only the jerking frequency and KT lowered both jerking frequency and flexing-licking duration significantly ($p \leq 0.001$) in the late phase of formalin test. On the other hand, combination of B12 and KT significantly ($p \leq 0.001$) lowered both the study variables in all 3 phases of formalin test.
Conclusions
From this study it may be concluded that, vitamin B12 possess analgesic effects and combination of B12 with KT is more effective than those of their individual administration.

eP339
DEEP VEIN THROMBOSIS IN CANCER PATIENTS- A STUDY FROM AN EASTERN INDIAN TERTIARY REFERRAL CENTRE

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Introduction
Patients with cancer are at high risk to develop venous thrombosis. Further, cancer-associated thrombosis is linked with poor prognosis and is a leading cause of mortality in patients due to thromboembolism. Deep vein thrombosis (DVT) risk is particularly high in lower abdominal malignancies. DVT quite often goes unnoticed and it is therefore very pertinent that cancer patients are screened routinely for this complication by cost-effective, user-friendly and patient- compliant techniques like lower limb venous doppler, specially in resource limited settings.
Methods
Duplex ultrasonography (USG) of bilateral lower Limbs – a Common screening test for DVT was performed in all patients after taking proper consent.
Results
In our prospective observational study of 124 consecutive patients reporting to the Cancer Registry of our department we identified 9 patients of lower limb DVT after routine Doppler screening. Out of 8 patients, 3 patients (37%) had carcinoma ovary, 2 patients (25%) had carcinoma breast, 1 patient (13%) each were suffering from carcinoma colon, hepatocellular carcinoma & pancreatic carcinoma. 3 patients were post-operative patients. All these patients were treated with prolonged course of LMWH followed by resolution of thrombus. With this protocol, there was no subsequent mortality from thromboembolism in these patients as observed on follow up.
Conclusions
DVT can be identified by routine screening procedure and venous thromboembolism is thereby a preventable risk factor by suitable therapeutic and prophylactic measures to reduce mortality.

eP340
PROPHYLAXIS AND MANAGEMENT OF TUMOR LYSIS SYNDROME (TLS) AMONGST CANCER PATIENTS IN QATAR: A RETROSPECTIVE COHORT STUDY

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Introduction
TLS is an oncological emergency caused by the breakdown of malignant cells resulting in massive release of cellular components into the blood. Rasburicase is a urate oxidase enzyme used for prophylaxis and treatment of hyperuricemia associated with TLS. Our institutional TLS guidelines were updated to recommend the use of a single dose rasburicase. The objective of the study was to assess the compliance to TLS guidelines, evaluate the effect of guidelines update on consumption and cost of rasburicase and assess the efficacy of a single rasburicase dose in lowering uric acid levels.
Methods
It is a retrospective cohort study, including oncology and hematology adult patients who developed or were at risk of TLS in Qatar. The study included 103 patients divided into 2 groups based on the date of the TLS guidelines update; 48 patients before and 55 patients after the guidelines update.
Results
The rate of compliance to the institutional TLS guidelines after the update increased from 77% to 87% (P=0.17), from 46% to 78% (P=0.001), and from 56% to 95% ($P < 0.001$) in terms of proper indication, proper duration and G6PD screening, respectively. Rasburicase consumption and cost were significantly reduced by 43% after the guidelines update. Furthermore, the single dose rasburicase was efficacious in controlling uric acid within 24 hours in 98% of patients.
Conclusions
Updating the institutional TLS guidelines had a significant impact on compliance to guidelines and optimization of rasburicase use. Moreover, the use of a single rasburicase dose demonstrated efficacy in lowering serum uric acid levels.

eP341
EFFECTS OF SUBSIDIZED PAP SMEAR SCREENING ON THE WILLINGNESS OF 20–29-YEAR-OLD YOUNGER FEMALES TO UNDERGO CANCER SCREENING

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Introduction
Free Pap smear screening only provide for females more than 30-year-old once a year or at least once every 3 years in Taiwan. If females are lower than 30-year-old would need to pay for the screening, this might inference the willingness to undergo the screening. The aim of this study was to examine the effects of self-pay and free Pap smear screening on the willingness of females aged 20–29 years to undergo the screening.
Methods
This survey-based study was conducted using a self-designed Pap smear willingness questionnaire and recruited 416 females aged from 20–29 years old. On a 5-point scale, higher scores represented greater willingness. Validity of the questionnaire was determined based on the following: Cronbach's α coefficient, 0.830; KMO, 0.781; and total variation, 60.72%.
Results
After comparing the recruited 416 females and the government data, finding the sample to be representative. 46.9% of the participants had sexual intercourse, 71.3% had their first intercourse before age of 20, 32.3% had ≥3 of past sexual partners, and 67.2% without condoms every time during sexual intercourse. When free Pap smear screening was provided, the mean willingness score for undergoing the test once a year was 4.0(±0.8) and that for undergoing the test every 3 years was 4.1(±0.7). Conversely, when self-pay was required, the mean willingness score for undergoing the screening every 3 years was 3.3(±0.9).
Conclusions
Our result showed risky sexual behaviors were common among younger females aged 20-29. If extending age criterion of free screening for younger females, the willingness of screening will increase.

eP342
EFFECTS OF VITAMIN B12 AND KETOROLAC ON CENTRAL ANALGESIC SYSTEM IN LONG EVANS RATS

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Introduction
Vitamin B_{12} have been used for long, either alone or with or without other analgesics for treatment of different painful and inflammatory conditions. However, comparison of these effects with similar effects of ketorolac tromethamine (KT) and their combination have not been established. To assess the effects of vitamin B_{12} on pain as well as central analgesic system and also to compare them with those of the combinations of vitamin B_{12} with KT.
Methods
The study was conducted in the Department of Physiology, Bangabandhu Sheikh Mujib Medical University. 20 (twenty) Long Evans rats (215±35 gm) of either sexes were divided into control (A, with 5 ml/kg normal saline) and experimental (B1, with 15 mg/kg B_{12}; B2, with 10 mg/kg KT; B3, with B_{12}+ KT) groups with 5 rats in each group. All the drugs and vitamin were administered intraperitoneally in a single dose just one hour before formalin test. To evaluate the treatments' effect on central analgesic system, interphase (6^{th}-15^{th} minutes) of the formalin test, were observed. Statistical analysis was done by ANOVA, followed by Bonferroni post hoc test.
Results
B12 and KT lowered both jerking frequency as well as duration of flexing and licking in the interphase. On the other hand, combination of B12 and KT significantly ($p \leq 0.001$) lowered jerking frequency as well as significantly ($p \leq 0.05$) lowered duration of flexing and licking in the interphase.
Conclusions
It may be concluded that, vitamin B12 possess central analgesic effects and combination of B12 with KT is more effective than those of their individual administration.

eP343
'NICE TO KNOW IF HELP IS NEEDED' REVIEW OF QUALITY OF LIFE FOR LYMPHOMA PATENTS ON SUPPORTED SELF-MANAGEMENT PATHWAY

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Introduction
The importance of supported self - management for people living with and beyond cancer has been recognised as one of the key priorities in the Cancer Strategy for England (2015-2020). At University College London Hospital supported self-management pathway was introduced in curative lymphoma patients with stable disease. Eligible patients are seen periodically for one year following completion of treatment. After the year, patients are no longer seen in clinic but are given information and support, sign posted accordingly to enable self-management. They are encouraged to call the clinical team should any problems arise.
Methods
Once patients are on the 'open access' part of the pathway, a quality of life questionnaire EQ-5D-5L, is sent via post annually for four years. Results are entered on an excel spread sheet, reviewed and fed back to the team. Feedback about patients' confidence in self-management following treatment is also collated
Results
Between January 2016 and November 2018, 56 questionnaires have been reviewed.

	Nil	Slight	Moderate	Severe	Unable	N/A
Mobility	79%	5%	5%	2%	0	9%
Self-care	81%	4%	4%	0	0	11%
Usual activities	77%	5%	5%	0	2%	11%
Pain/discomfort	59%	27%	3%	0	0	11%
Anxiety/depression	55%	20%	9%	3%	2%	11%

Between January 2016 and November 2018, 46 feedback questionnaires have been reviewed for confidence in self-management

Very confident	Fairly confident	Not very confident	Not at all	Don't know
50%	41%	2%	2%	4%

Conclusions
Supported self-management is a safe pathway. Patients do contact team if any concerns. There has been no delayed diagnosis.

eP344
PERIODONTAL DISEASE-ASSOCIATED SNPS IN HEAD AND NECK CANCER IRRADIATION PATIENTS

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Introduction
Periodontal disease (PD) is a common oral complication in head and cancer patients (HNC) who undergo radiation therapy (RT). It has been previously shown that genetics play an important role in PD development.
Our objective was to identify candidate single nucleotide polymorphisms (SNPs) associated with PD in radiation-treated HNC patients.
Methods
Saliva DNA was extracted from HNC patients (n=65) at baseline prior to RT. Clinical attachment loss (CAL) increment of >0.2 mm was used as threshold to define PD development (PD group). A total of 44 patients among 65 developed PD. Exome sequencing and variant detection were performed using Ion Proton sequencing platform. SNPs associated with PD were identified by logistic regression using PLINK v1.9 software (unadjusted $p<0.05$). Predominance of the homozygote SNP genotype for the alternate allele in patients who developed PD was determined using two-tailed z-test. STRING, PANTHER and GeneCodis programs were used for molecular network and gene ontology analyses.
Results
A total of 454 candidate SNPs (385 genes) were identified, including 92 (60 genes) over-represented variant homozygous genotypes in PD group. Of these, 22 genes formed seven tight networks (90% confidence level), including a collagen network and previously identified HLA-A and MMP2. These 22 genes were also integrated within a 66-gene network including 37 previously identified in PD association studies. Gene ontology analysis of this network showed the overrepresentation of biological processes such as collagen-dependent cell adhesion and the inflammatory response.
Conclusions
Polymorphisms affecting the integrity of the collagen matrix might confer susceptibility to PD in HNC patients undergoing RT.

eP345
FREQUENCY OF HUMAN PAPILLOMA VIRUS INFECTION IN ORAL SQUAMOUS CELL CARCINOMA AND ITS CLINICAL SIGNIFICANCE

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Introduction
Oral cancer is an important health problem in South East Asia, several parts of Europe and Africa. Though tobacco and alcohol are the important causative agent, Human Papilloma Virus (HPV) infection is also attributed in the carcinogenesis of oral and oropharyngeal cancer. However information on the prevalence of HPV virus in oral cancers from India is sparse.
Methods
The objective of the study is to identify the frequency of HPV infection in oral cancer and its correlation to $p^{16INK4A}$ expression and to assess its impact on treatment response and survival. A total of 201 paraffin embedded tissue blocks of oral squamous cell carcinoma (SCC) patients treated at Regional Cancer Centre, Thiruvananthapuram, India during the period of 2009-2011 were retrieved. HPV DNA was isolated from these tissue blocks by Polymerase chain reaction and expression of $p16^{INK4A}$ was analyzed by immunohistochemical method. Survival curves were obtained by using the Kaplan-Meier method and were compared with log rank test.
Results
The frequency of HPV 16 in oral SCC patients in the present study was 6.6% and all the HPV positive cancers were carcinoma tongue. All HPV positive cases showed intense p16INK4A expression and the survival was better.
Conclusions
In future the expression of p16INK4Aand HPV status will be a good marker in decision making for oral cancer management.

eP346
ATTITUDES AND PREFERENCES TOWARD FECAL MICROBIOTA TRANSPLANTATION AMONG PATIENTS WITH CANCER

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Introduction
1,700 years earlier, fecal microbiota transplantation (FMT) was first reported by a famous Chinese doctor Ge Hong, in his well-known traditional Chinese medicine book "Zhou Hou Bei Ji Fang". In this book, the fecal suspension called yellow soup was effective in the treatment of severe diarrhea and food poisoning by orally. The guidelines and criterions development are influenced by patients' views and preferences which are important in setting a standardized methodology for FMT administration. In our aesthetic times, the patients' attitudes and preferences toward FMT may different with ancient. The purpose of this study was to identify whether cancer patients are willing to choose FMT during anti-tumor treatment in the hospital and to investigate what factors influence their attitudes and preferences toward FMT.
Methods
A self-designed questionnaire was used to survey the participants. They were asked about the attitudes and preferences of the willingness, donor, input pathway, expenditure and adverse effect toward FMT. Logistic regression was used to identify factors associated with the willingness toward FMT.
Results
Most cancer patients showed the willingness to choose FMT. The patients with higher educational level and the later clinical stage preferred to use FMT in their treatment. Some factors of demographic and clinical characteristics influenced their attitudes and preferences of the donor, input pathway, expenditure and adverse effect toward FMT.
Conclusions
Our findings indicate that most cancer patients showed the willingness to use FMT in their treatment and some factors of demographic and clinical characteristics influenced their willing to designate FMT.

eP347
THE EXERCISE PROTOCOL ADHERENCE OF CANCER PATIENTS IN A RANDOMIZED CONTROLLED TRIAL

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Introduction
Exercise intervention studies have rarely discussed the adherence of experimental groups or the contamination of control groups. We identified the predictors of exercise adherence and contamination in randomized controlled trials.

Methods
This is a 12-week exercise intervention trial of 122 patients with lung cancer. We measured the patients' the demographic and disease characteristics, exercise habits before cancer diagnosis, and Karnofsky Performance Scale (KPS) and then instructed them to log their 3-day physical activity record (3-d PAR).
Results
The result indicated that the exercise adherence rates of the patients who exercised regularly before cancer diagnosis were significantly higher than those of the patients who did not exercise regularly before cancer diagnosis (82.87% vs. 53.46%, t = 2.751, P = 0.011). The KPS were significantly correlated with the exercise adherence rates (r = 0.282, P = 0.029). The results revealed that the patients who exercised regularly before cancer diagnosis were 11.55 times more likely to be contaminated than were their nonexercising counterparts (odds ratio [OR] = 11.55, p = 0.016).
Conclusions
Exercise habits before cancer diagnosis and KPS were a predictor for exercise adherence rate and contamination. When conducting a RCT study on exercises, we should know the patient's past exercise experience, KPS, and the number of minutes of physical activity performed daily during the pre-test and keep tracking. To confirm whether the patients in the experimental group can exercise and monitor the control group for the risk of contamination.

eP348
PHYSICIANS PERSPECTIVES ON MARIJUANA USAGE

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Introduction
While reviewing the current state of literature on marijuana, it is evident that there is a need for standardization regarding best practice of marijuana education for patients. The full effect of marijuana on patients undergoing chemotherapy remains ambiguous. In the midst of uncertain effects of marijuana on their patients, a fundamental role must be discussed- the role of physicians in the care of their patients.
Methods
A quality improvement project was conducted within an academic medical center. Two focus groups composed of 3 physicians each from varying specialties were conducted prior to the electronic survey dissemination. An electronic 25 question survey, based on literature review and focus group data, was created. Survey questions inquired about the physician's knowledge of marijuana; their impression of patient marijuana usage; and their clinical dissemination of information to patients. Survey questions inquired about the physician's knowledge; impression of marijuana usage; and clinical dissemination of information about marijuana use.
Results
128 responses were received and varied in 20 different specialties. 62% agreed with legalization of marijuana. 9% strongly agreed they were well-versed in the side-effects of marijuana use. 30% agreed with immunocompromised patients utilizing marijuana. 80% agreed that physicians should have formal training before recommending marijuana.
Conclusions
Perspective of physicians across an academic setting is helpful in assessing the gaps of care with marijuana use. Results further lends to the need for creating health education standards regarding marijuana usage and need for further research. It is imperative that a standardized method of delivering health education are provided to patients.

eP349
PREVALENCE AND GENOTYPING OF HIGH RISK HUMAN PAPILLOMA VIRUS IN PATIENTS WITH HEAD AND NECK SQUAMOUS CELL CARCINOMA

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Introduction
HNSCCs are characterized by distinct phenotypic, aetiological, biological and clinical heterogeneity. It is a heterogeneous disease that can be roughly divided into human papillomavirus (HPV) positive and negative. Very little is known about the prevalence of specific HPV types in Pakistan. The objective of this study was to determine the prevalence of different high risk HPV genotypes in patients with HNSCCs in Pakistan.
Methods
This cross sectional study was carried out in the Department of Immunology, University of Health Sciences, Lahore, Pakistan after approval from the Ethical Review Committee and Advanced Studies & Research Board, UHS Lahore For the detection of HPV DNA and its different genotypes, real time PCR kit was used. The data was entered and analyzed using SPSS 20.0. A p value of ≤0.05 was taken as significant.
Results
Among 91 cases of HNSCC, only 6 (6.59%) cases were found to be positive for high risk HPV on real time PCR. Among these 6 positive cases, two cases were positive for HPV 16 and one case was positive for HPV genotype 56. Among others, two cases were co-infected with high risk HPV genotypes 16 and 51 and one sample had HPV genotypes 16 and 18. Among all high risk genotypes, HPV 16 was positive in 5 out of 6 cases.
Conclusions
The findings of current study will be helpful in launching public health awareness and future vaccination programs against specific HPV types in Pakistan to lessen the burden of HPV related HNSCC.

eP350
COLLABORATIVE CARE AMONGST CANCER CAREGIVERS, PATIENTS AND HEATLHCARE PROVIDERS: A LITERATURE REVIEW

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Introduction
Self-management refers to the ability to manage the symptoms, treatment, physical and psychosocial consequences and lifestyle changes while living with chronic conditions. For many cancer patients, self-management requires collaborative effort amongst patients, their caregivers and healthcare providers. This study aimed to describe current knowledge concerning collaborative care involving caregivers, patients and healthcare providers.
Methods
A narrative literature review was conducted in PubMed and CINAHL using relevant keywords in mid-2018. Searches were limited to English language and studies of the adult population.
Results
Ninety matches resulted, 34 articles were relevant. Of the 34 articles, 2 were non-empirical, 20 were descriptive studies and 9 included an intervention on caregivers. A majority of studies included both patients and their caregivers(n=14). Very few included patients, caregivers and healthcare providers(n=5). The most number of studies described the caregiver's experience(n=6) or communication with healthcare providers(n=6). Of the nine intervention studies to support caregiving,

three focused on education, two on communication, two on decision-making, one tested the use of a coordinator role and one on personalized medicine. Outcomes of intervention studies were primarily related to mental health(e.g., burnout, n=7), quality of life(n=4) of both patients and caregivers and physical health of patients(n=4). A majority of these studies reported improvement post-intervention(n=5).

Conclusions

Findings validated that, supportive interventions improved both patient and provider outcomes. A comprehensive framework is needed to support the development of collaborative partnership with caregivers, patients and providers. In addition to patient and caregiver outcomes, evaluation of outcomes related to collaborative partnership and process is needed.

eP351
PREDICTIVE FACTOR OF CHEWING ABILITY IN MALE PATIENTS WITH ORAL CANCER

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Introduction

This study explored chewing function predictors in men patients with oral cancer after treatment.

Methods

Research was conducted using a cross-sectional study. One hundred and three male patients with oral cancer at a teaching hospital in southern Taiwan. Data collection using the chewing function questionnaire, basic demographic and disease characteristic form, A scaled ruler was used to measure maximum mouth open. Data analysis using Stepwise regression was applied to explore the predictors of chewing ability.

Results

Among the 103 male patients with Oral cancer participated in this study, The mean age was 55.02 (±8.71) years. The Mean Body Mass Index (BMI) was 22.08 (±3.59)(kg/m2), Radiation therapy average duration time was 37.27month, maximum moth opening was 22.86mm (± 11.94), have smoke habit after treatment was 18.4%, Chewing function mean scores was 15.65(± 5.54). Buccal mucosa(41.7%) and tongue(29.1%) site are the most common in oral cancer. Tumor 3~4 stage was 68.9%. Accept reconstruction surgery was 48.5%. Work status and maximum mouth open are predictors with Chewing function.

Conclusions

The male patients with Oral cancer mouth opening range and work status can affect chewing ability. Early detection and accesses mouth opening can improve chewing function.

eP352
DOCTORS' AND PATIENTS' VIEWS ON PHALLUS IMPUDICUS ROLE IN SUPPORTIVE CARE IN CANCER

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Introduction

Phallus impudicus (PhI) is an edible fungus from the order of Gasteromycets. Young fruiting bodies of an "egg"-stage are used for food. PhI was found to contain polysaccharides, phytosterols and other nutrients. PhI is regarded as anticancer food and the most commonly used supportive care remedy in Latvia, with strong beliefs among patients that Phi prolongs survival time of patients with incurable cancer. This study aimes to explore the patients' and doctors' views on Phi role in supportive care in cancer.

Methods

During the period from 1991 to 2018, 5862 cancer patients with small cell or non-small-cell bronchogenic carcinoma, breast carcinoma, ovarian carcinoma FIGO (IIIB – IV) and carcinoma of the colon, rectum or stomach and 68 cancer specialists were involved in a transversal survey. Patients' and doctors' views on Phi role in supportive care and differences between them: agreement with statements rated on a 5-point scale, ranging from "strongly disagree" to "strongly agree."

Results

Cancer patients less than doctors consider the immunomodulating, antithrombogenic and adaptogenic effects of PhI (mean 3.6, 1.9 and 2.2 versus 4.6, 4.1 and 4.9) and cancer patients much more than doctors believe that Phi cures cancer and prolongs survival time of patients with advanced cancer (mean 4.2 and 4.9 versus 1.9 and 4.7).

Conclusions

Cancer patients appeared to differ from doctors in views on the role of Phallus impudicus in supportive care. Nevertheless, both groups consider the necessity to use PhI to achieve relevant prolongation of survival time of cancer patients.

eP353
OUTCOME OF IMATINIB-TREATMENT IN CHRONIC MYELOID LEUKEMIA (CML) PATIENTS OF DIFFERENT FOOD HABITS

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Introduction

CML is characterized by Philadelphia (Ph)-chromosome that originates from t(9q34;22q11) and carries the chimeric/mutant *BCR-ABL* oncogene. The oncogene causes overproduction of tyrosine kinase (TK), and thus, targeted for therapeutics. Imatinib is the first such TK-inhibitor (TKI) and considered for front-line therapy for its efficacy to render fast elimination of Ph-positive clone. However, delay in treatment outcome/relapse of the disease was reported due to occurrence of point mutation within *BCR-ABL* and/or individual genetic composition. Similar outcome was apparently noticed among 1136 patients known two have distinct food habits in the present study.

Methods

From the heterogeneous treatment-group, 232 patients receiving imatinib were considered for bone-marrow cytogenetics with a view to understanding the effect of food habit on treatment outcome. The patients were known to consume two distinct types of food such as one never consumes beef (Group1) and the other consumes more of beef than other items (Group2). Analysis of G-banded metaphase chromosomes or BCR-ABL signals following FISH has collected data on partial response (<100% Ph+ve), no response (100% Ph+ve) and complete cytogenetic remission (CCR; 100% Ph-ve), which was considered for X^2-statistics.

Results

In all, Group2 patients (60%) didn't exhibit any response till one year of treatment compared to Group1 (42%), which was significant in males and for the cumulative data. However, the difference between the two genders was not significant since the females of the two food-groups have achieved similar outcome.

Conclusions

Food, especially red meat interferes in treatment outcome, and that is aggravated by smoking and other factors in males.

eP354
CANCER INCIDENCE AND PATTERNS AMONG POPULATION IN DARFUR REGION (WESTERN SUDAN) AND EFFECT OF CIVIL WAR

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Introduction
Darfur region in western Sudan has been engulfed in civil war since 2005 that has resulted in over 2.3 million displaced peoples (approximately 30% of its 8 million population). Overall, Sudan is experiencing a growing cancer problem and Darfur is no exception. In this research, we review the available cancer incidence data from the major cancer hospital in the country (Risonance and Isotopes Center_Khartoum) to assess the variation of the occurrence of different types of cancer related to the geographic region of Darfur and associated risk factors.
Methods
Data summarized from other local and international publications are used to highlight differences in incidence of different types of cancers between Darfur region and the rest of country. Statistical incidence data are also augmented with targeted questionnaire for a representative sample to collect information on likely risk factors such as sex, age, socioeconomic status, behavioral factors (e.g., tobacco use), environmental risk factors (serious environmental problems related to water and soil pollution with arsenic, mercury, grease and suspended small particles, etc.), and psychological risk factors (stress, war trauma, etc.).
Results
We provide frequencies reported for cancers detected in adults and children, as well as information on risk factors with most likely impact on cancer patterns.
Conclusions
This research contributes to the effort to build knowledge base on the status of cancer prevalence in war torn Darfur region. This research work also documents key knowledge gaps and future research agenda for collaboration with international bodies.

eP355
THE ROLE OF EXTRACELLULAR VESICLES IN SYMPTOM BIOLOGY- A SCOPING REVIEW

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Introduction
Cancer survivors experience many debilitating co-occurring symptoms. Current understanding of the exact biological mechanisms underpinning symptoms is limited. Emerging studies suggest that extracellular vesicles (EVs) play a key role in cell-to-cell signaling, genetic material exchange between cells, and contain heat shock proteins (HSPs) and microRNAs (miRNAs). HSPs directly modulate immune responses and miRNAs regulate gene expression, immune cell differentiation, and proliferation. Thus, EVs may fill the gap in understanding the etiology of symptoms. To our knowledge, there have been no reviews on the role of EVs in symptoms. The purpose of this review is to investigate the association of EVs with symptoms.
Methods
Electronic literature searches in Embase and PubMed databases were conducted with assistance from a medical librarian. The inclusion criteria are: 1) English language; 2) inclusion of at least one of the following symptoms: fatigue, pain, depression, sleep disturbances, and cognitive impairment; and 3) association of EVs with symptoms. Studies that investigated non EV-derived miRNA and HSP and/or did not include symptoms as one of the outcomes will be excluded.
Results
The search retrieved 6974 articles, 1919 duplicates were removed, and 5055 articles are undergoing eligibility screening. Full text review of remaining articles will be conducted applying the eligibility criteria. Eligible studies will include animal and human models.
Conclusions
This review will describe a current state of evidence into the role of EVs in the etiology of symptoms. The findings will guide researchers for future validation studies and the development of optimal management for symptoms.

eP356
CASE REPORT: DE NOVO BRCA1 GENE MUTATION IN A 33 YEAR-OLD WOMAN WITH BREAST CANCER

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Introduction
BRCA1 and *BRCA2* aid in non-homologous DNA repair, and germline mutations in these two tumour-suppressor genes account for a majority of hereditary breast and ovarian cancers. This often leads to hereditary breast and ovarian cancer syndrome (HBOC). HBOC is commonly characterized by a family history of breast cancer, ovarian cancer, and to a lesser extent, prostate cancer, pancreatic cancer and melanoma. *De novo* pathogenic variants in *BRCA1* and *BRCA2* are rare. In the literature, to date, twelve *BRCA1* (including the present) and six *BRCA2 de novo* pathogenic variants have been published (Table 1).
Methods
A retrospective chart review was conducted.

Table 1. *BRCA1* and *BRCA2 de novo* mutations reported in the literature and in this study.

Gene	Mutation	Cancer type (age of diagnosis)	Breast/ovarian cancer in family history	References
BRCA1	c.3769_3770delGA	BC (<40)	None	Tesoriero *et al.* 1999[17]
BRCA1	c.5332+G>A, in intron21	BC (38)	Maternal Aunt BC (<54)	Edwards *et al.* 2009[5]
BRCA1	Exons 1-12 deletion	BC (30)	None	Kwong *et al.* 2011[6]
BRCA1	Deletion	BC (28, 37)	None	Garcia-Casado *et al.* 2011[7]
BRCA1	c.3494_3495delTT	BC (52), OC (53)	None	De-Leeneer *et al.* 2012[8]
BRCA1	g.146232_149957del	BC (39)	Paternal cousin BC (30)	Delon *et al.* 2013[9]
BRCA1	c.5468A>G	OC (39)	Two paternal aunts, BC (57, 75)	Golmard *et al.* 2016[1]
BRCA1	c.2296_2297delAG	BC (31)	None	Golmard *et al.* 2016[1]
BRCA1	Exons 1-13 deletion	BC (41)	Two sisters BC (62, 63) Paternal grandmother BC (75)	Golmard *et al.* 2016[1]
BRCA1	Exons 4-6 deletion	BBC (29, 33)	None	Musani *et al.* 2017[10]
BRCA1	c.5095C>T	BC (32)	None	Antonucci *et al.* 2017[11]
BRCA1	c.5144G>A	BC (33)	Maternal aunt OC (54)	Tam *et al.* 2018 (this report)
BRCA2	Exon 14, 7260insA	BC (35)	None	Robson *et al.* 2002[12]
BRCA2	3034del4	BC (39)	Paternal cousin BC (54)	Van der Luijt *et al.* 2011[13]
BRCA2	c.8754+1G>A	BC (40)	Mother, BC (59)	Hansen *et al.* 2008[14]
BRCA2	c.5301insA	BC (35)	Paternal grandmother BC (42)	Marshall *et al.* 2009[15]
BRCA2	c.51dupA	BBC (27, 37)	None	Diez *et al.* 2010[16]
BRCA2	c.6082_6086delGAAGA	BC (40, 48)	Daughter BC (31)	Golmard *et al.* 2016[1]

BC, breast cancer; OC, ovarian cancer

Results
We present a 33-year-old woman of Scottish and English descent, with a *de novo BRCA1* substitution diagnosed with triple negative breast cancer (Figure 1). The patient was referred for genetic counselling. Neither of the parents carries this mutation and paternity testing was done to confirm the absence of a non-paternity event. Mosaicism, chimerism, and *de novo* mutation are all plausible explanations for this case.

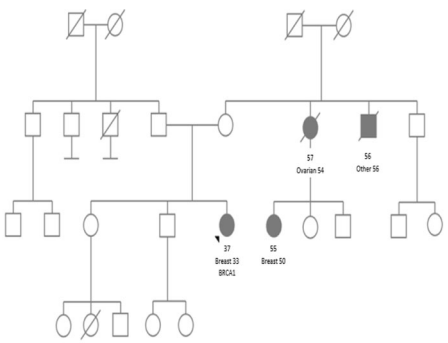

Figure 1. Pedigree of patient carrying the *de novo* mutation in *BRCA1* gene. An arrow indicates the proband. Type of cancer and age at diagnosis are indicated below.

Conclusions
Cases of *BRCA1/2* mutations are of significant clinical value in breast and ovarian cancer prevention and management. Knowledge of the rate of *de novo* mutations would provide additional information to practicing geneticists and genetic counsellors to aid in pedigree assessment for the HBOC syndrome phenotype in families. Knowing the frequency of *de novo* mutations in the *BRCA1* and *BRCA2* genes would also aid geneticists in the identification and referral of probands with a *BRCA*-consistent phenotype but no family history.

eP357
AN INSIGHT INTO PATIENT EXPERIENCE OF CANCER CARE IN TAIWAN

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Introduction
Understanding the patient's perspective of care is critical for improving quality of care, especially in cancer care. Many countries have been using patient experience data to measure healthcare quality, but most of them are from western countries, the view of eastern country is lacking. Therefore, the purpose of this study is taking Taiwanese cancer patients as example to investigate the patient's experience, and explore whether the experience is varied among patient's characteristics.
Methods
The UK's cancer patient experience survey questionnaire was selected, and the formal translation and cultural adaptation procedure was applied. After that, a total of 4,000 questionnaires administered in all certificated cancer care hospitals (n=19). Otherwise, we followed Macmillan Cancer Support's suggestion to classify patient's experience into 9 categories for analyzing the results in detailed.
Results
1,010 questionnaires returned (25.25% response rate), and 148 were excluded because the information of patient's characteristic was missing, 862 questionnaires were kept for analysis. Our finding showed most respondents had positive experience of cancer care, but the experience was varied among categories, respondents were most satisfied with physical environment (90%) and least satisfied with "timely referral into secondary care" and "shared decision making" (64%). The experience was also varied among patient's gender, cancer type, cancer stage, cancer history, hospital level and age at the time of having cancer as well.
Conclusions
This study provides an insight into cancer care in eastern settings from the patient's perspective. Establishing a patient-centered care model for cancer care should be the next step in Taiwan.

eP358
CHEMOTHERAPY RELATED SYMPTOMS AFFECTING PERSISTENCE OF ANXIETY SYMPTOM IN BREAST CANCER PATIENTS

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Introduction
A number of patients with breast cancer complain of anxiety symptoms before chemotherapy and some patients continue to experience anxiety symptoms after chemotherapy. Persistent of anxiety symptom cause major psychiatric disorder and it is a major factor in reducing quality of life. In this study, we investigated the factors associated with chemotherapy which affect persistence of anxiety symptom.
Methods
This prospective, longitudinal, and observational study recruited breast cancer patients with neoadjuvant chemotherapy (doxorubicin/cyclophosphamide 4 cycle plus docetaxel 4 cycle). Hospital Anxiety and Depression Scale (HADS), Pittsburgh Sleep Quality Index (PSQI) was performed at the baseline and the M.D. Anderson Symptom Inventory (MDASI) was administered every chemotherapy session (Total 8 times). The effect of anxiety persistence was analyzed by logistic regression model immediately after the end of chemotherapy (T1) and 6 months after the end of chemotherapy (T2).
Results
Of a total of 186 participants, 78 patients complained of anxiety symptom at baseline. (HADS-A $\geq$ 8) And 43 patients in T1 and 30 patients in T2 complained of anxiety symptom, respectively. In the univariate analysis, persistent anxiety symptom (at T1 and T2) was associated with MDASI mean score. (T1: odds ratio [OR], 1.60; 95% confidence interval [CI], 1.17–2.30; p= .006, T2: OR, 1.41; CI, 1.05–1.95; p= .027). In multivariate analysis, MDASI mean score remained significantly associated with persistent anxiety symptom after adjusting for age, sleep quality and depressive symptom.
Conclusions
In breast cancer patients with anxiety symptom undergoing neoadjuvant chemotherapy, severity of chemotherapy related symptoms affects the anxiety persistence.

eP359
ASSOCIATION BETWEEN NATIONAL CANCER SCREENING, HEALTH CHECKUP RATES AND ALL CAUSES CANCER INCIDENCE, MORTALITY RATES (2009-2013) IN SEOUL

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Introduction
Cancer is a very important health problem not only in Korea but also in the worldwide. The purpose of this study was to investigate the relationship between cancer screening and health checkup rates and the incidence and mortality rates for cancer in Seoul.
Methods
Among the database data constructed from 62 data sources, 435 indicators, and 1995 items surveyed in 17 cities/provinces and 254 cities/counties/districts from 2008 to 2016 under the leadership of the CDC. In this study use the data from 2009 to 2013. Pearson's correlation and multiple linear regression were used to examine the relationship between cancer screening and health checkup rates and the incidence and mortality rate for cancer in Seoul.
Results
The overall OR between cancer screening and health checkup rates and all causes cancer incidence rates 2.28(95% CI 1.366, 3.807), 2.22 (95% CI 1.310, 3.772) and adjusted OR with covariates 1.64 (95% CI 1.001, 2.681), 1.30 (95% CI 0.697, 2.429). And overall OR with all causes cancer mortality rates 0.51(95% CI 0.369, 0.696), 0.35 (95% CI 0.259, 0.466) and 0.74 (95% CI 0.542, 1.008) and 0.50 (95% CI 0.342, 0.720).
Conclusions
It was found that the cancer screening and the health checkup rates in Seoul were related to all cancer incidence and mortality rates. Especially, the higher screening rates, the more mortality rate decreased. Therefore, we can confirm the usefulness of the national screening project, and plan to increase the screening rate for the improvement of public health and cancer mortality rate.

Table 1. Descriptive statistics of variables[1] in Seoul.

Variables	Year				
	2009	2010	2011	2012	2013
Biennial Cancer screening rate	43.1	43.4	-	46.3	-
Biennial Health screening rate	57.2	58.4	-	62.3	-
Hypertension	14.5	15	15.5	17.1	15.5
Diabetes	5.2	5.7	5.5	5.8	5.8
BMI≥25kg/m²(self-reported)	21.4	21.7	22.5	23.4	23.1
Quality of life index[2]	0.964	0.96	0.945	0.954	0.948
High-risk drinking rate of annual drinkers[3]	16.2	15.2	17.8	15.8	17.2
Moderate physical activity rate[4]	6.7	7.7	8	7	7.6
Current smoking rate	24.7	23.7	23	23	22.6
Nontreatment rate for Annual need Medical service	5.7	-	2.7	2.8	2.3

[1] All rates are standardized by age (per 100,000).

[2] Five dimensions of health-related quality of life (athletic ability, self-management, daily activities, pain / discomfort, anxiety / depression).

[3] The men who drank more than 7 drinks (or about 5 cans of beer) or the women who drank 5 or more drinks (or 3 cans of beer) at one time and twice a week in the last year.

[4] The percentage of those who practiced physical activity more than 30 minutes a day, more than 5 days a week.

Table 2. Correlation coefficients from Pearson's correlation analysis between cancer screening rate and all causes cancer incidence or mortality rate in Seoul district (2009-2013).

	Pearson's correlation			
	Crude all causes cancer incidence		Crude all causes cancer mortality	
	Correlation coefficients	*P*	Correlation coefficients	*P*
Biennial Cancer screening rate	0.276	0.002	-0.357	<0.001
Biennial Health screening rate	0.26	0.003	-0.541	<0.001

Table 3. Odds ratio (OR) between biennial cancer screening and all causes cancer incidence and mortality rate[1] in Seoul district (2009-2013).

	All causes cancer incidence rate				All causes cancer mortality rate			
	Crude model		Adjusted model[2]		Crude model		Adjusted model[2]	
	OR	*P*[3]	OR	*P*	OR	*P*	OR	*P*
Biennial Cancer screening rate	2.28(1.366,3.807)	0.002	1.64(1.001,2.681)	0.049	0.51(0.369,0.696)	<0.001	0.74(0.542,1.008)	0.056
Biennial Health screening rate	2.22(1.310,3.772)	0.003	1.30(0.697,2.429)	0.406	0.35(0.259,0.466)	<0.001	0.50(0.342,0.720)	<0.001

[1] All rates are standardized by age (per 100,000).

[2] Adjusted by comorbidity (hypertension, diabetes), self-reported BMI, quality of life index, physical activity, smoking, alcohol, nontreatment rate.

[3] *P* value obtained by Multiple linear regression.

eP360
NOT ALL RURAL AREAS ARE CREATED EQUAL: SMOKING IN RURAL AMERICA ACROSS FOUR CATEGORIES OF AN URBAN/RURAL CONTINUUM

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Introduction
Although smoking prevalence has declined over the past decade, it is still associated with many types of cancer and is the leading cause of lung cancer. Rural populations are especially at risk as they have been consistently more likely to smoke. However, most research has ignored the marked heterogeneity of rural America, focusing solely on a rural/urban dichotomy.

Methods
Using Rural-Urban Commuting Area Codes (RUCAs) from the 2018 Health Information National Trends Survey (HINTS-5) database (n=5,099), we analyze the odds of smoking across four geo-political contexts: urban, large-rural, small-rural, and isolated-rural areas. This gives us a potentially more detailed understanding of place and health across the urban-rural continuum. Using an established social determinants framework, a series of logistic regression models were fitted to estimate odds ratios (OR) and 95% confidence intervals (CIs) for smoking.

Results
Across all models, those living in small rural towns had between 1.7 – 1.9 times the odds of smoking compared to urban-dwellers ($p<0.01$). However, this relationship did not exist for large and isolated rural areas. Additionally, age, gender, race/ethnicity, education, and housing status were independently associated with smoking ($p<0.05$).

Conclusions
In this study, compared to urban-dwellers, those living in small rural towns appeared to have increased odds of smoking. This was not the case for those living in large or isolated rural areas. These findings have implications for allocation of resources and the design of interventions aimed at smoking cessation.

eP361
FAN THERAPY FOR THE TREATMENT OF DYSPNEA: A SYSTEMATIC REVIEW

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Introduction
Dyspnea is a common symptom among patients with advanced disease. Fan therapy has been proposed as one component of the complex clinical interventions used in the relief of dyspnea, but there is a lack of consensus regarding its efficacy. We performed a systematic review of fan therapy for the treatment of dyspnea.

Methods
We searched Medline, EMBASE, Web of Science, Scopus, CINAHL, PsycInfo, and Cochrane Library databases for literature published prior to September 2018. Search terms included "dyspnea," "dysponea," "dyspneic," "short of breath," "shortness of breath," "breathless," "breathlessness," "breathing difficulty," "labored breathing," and "fan." Searches were limited to English or Chinese language. Bibliographies of electrically identified articles were also manually searched. Three authors independently assessed papers for inclusion.

Results
Ten out of the 92 unique records identified met the inclusion criteria, describing 9 randomized controlled trials and 1 observational study. Most studies (9; 90%) were conducted in the hospital setting, and none were double blinded. Nearly half (159; 46%) of the 344 total subjects had a diagnosis of cancer. The most common non-malignant disease was chronic obstructive pulmonary disease (COPD). The most common duration of fan therapy was 5 minutes. Six (60%) studies reported significant improvement in dyspnea with fan therapy (Table 1).

Table 1. Summary of Study Findings.

STUDY INTERVENTION	ABSOLUTE CHANGE IN DYSPNEA		CONCLUSION	STUDY QUALITY[c]
	MEAN (SD/RANGE)	P		
Bausewein 2010				
Fan	-0.6 (2.1)[a]	0.9	The effectiveness of the fan could not be proved	Fair
Control	-0.8 (2.67)[a]			
Booth 2016				
Fan	-1.04[b]	NA	50% of people with breathlessness at rest experienced relief using the handheld fan	Fair-poor
Galbraith 2010				
FTF	-7 (1.5 to 14.5)[c]	**0.003**	Handheld fan direct to the face reduces the sensation of breathless	Fair
FTL	-1.5 (-2 to 7)[c]			
Johnson 2016				
Fan	-6 (2)[b]	0.853	Confirms feasibility of definitive multi-site trial to study the use of handheld fan as part of self-management of chronic shortness of breath	Fair
No intervention	-5 (4)[b]			
Kako 2018a				
No fan	0[b]	**0.02**	A relief in dyspnea was reported in patients using a fan to their faces	Fair
FTL	0[b]			
FTF	-0.7[b]			
Kako 2018b				
FTF	-1.35 (-1.85 to -0.84)[b]	**0.001**	Fan-to-face is effective in alleviating dyspnea in terminally ill cancer patients	Good- fair
FTL	-0.1 (-0.53 to 0.33)[b]			
Marchetti 2015				
FTF	5 (0 to 10)[a]	**0.03**	Air current applied to the face improves exercise performance in COPD	Fair-poor
FTL	6.5 (0 to 10)[a]			
O'Driscoll 2011				
Room air	5.1 (1.7)[a]	NA	Use of air from a fan had no apparent physical or placebo effect	Fair-poor
Electric fan	5.1 (1.7)[a]			
Air mask	5.3 (1.6)[a]			
Oxygen mask	5.1 (1.7)[a]			
Puspawati 2017				
Fan	-1.21 (0.56)[a]	**0.003**	Airflow stimulation from handheld fan decreases dyspnea sensation in non-hypoxemic dyspneic lung cancer patients	Fair
Diaphragmatic breathing exercise	-0.69 (0.46)[a]			
Wong 2017 39451				
Fan	-1.53[b]	**0.01**	Fan therapy is effective in alleviating dyspnea in Chinese patients with advanced cancer	Fair
No intervention	-0.13[b]			

[a] *Modified Borg Scale/Borg Scale*
[b] *Numeric Rating Scale*
[c] *Visual Analogue Scale*
[c] *The Cohrane risk of bias assessment tool was used to assess the methodological quality of each study*
Abbreviations: FTF: fan-to-face; FTL: fan-to-leg; NA: not applicable; COPD: Chronic Obstructive Pulmonary Disease

Conclusions
Limited direct evidence from randomized clinical trials indicates fan therapy may effectively alleviate dyspnea. Additional trials are warranted to confirm this finding and explore the use of fan therapy for the treatment of dyspnea in more diverse populations and settings.

eP362
CONPART: A STUDY COMPARING NAILS IN PATIENTS RECEIVING TAXANE CHEMOTHERAPY

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Introduction
The use of black nail polish for patients undergoing chemotherapy treatments with Docetaxel to reduce nail toxicity has been commonplace for over a decade using only anecdotal evidence. A literature review using the search terms 'chemotherapy' (as a keyword) and 'taxanes', 'nail toxicity' and 'nail polish' (as a MeSH subject headings) was undertaken. The literature identified that nail toxicity was a common toxicity from the administration of taxane chemotherapy but there has been no conclusive evidence for nail polish use overall. An in vitro assay testing the growth of cells after UV exposure identified that opaque nail polish can protect the cells in this controlled setting.

Methods
To test the hypothesis that nail polish protects from taxane-induced onycholysis and determine if there is an observable difference in nail toxicity, a pilot study of 20 participants was undertaken. Participants painted nails of one hand with neutral –beige polish. The participants other hand was used as a control. For the study to be considered non-inferior a >= 30% reduction in nail changes were identified.
Results
20 participants were recruited, 17 of those recruited were included in the data analysis. Of those recruited only 3 (17%) showed and observable difference >30% in the hand using nail lacquer.
Conclusions
The results of this pilot study showed that there is no benefit in protecting nails from the use of nail polish. These results are practice changing and should be considered in all centres where patients still use nail polish to protect their nails during taxane chemotherapy.

eP363
PREVALENCE OF HERBAL MEDICINE (HM) USE AMONG BREAST CANCER PATIENTS TREATED WITH CHEMOTHERAPY, HORMONE THERAPY, OR TARGETED THERAPY

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Introduction
Complementary and alternative medicine (CAM) are widely used by cancer patients during their antineoplastic treatment. Potential drug interactions are still unknown. Few data are available about security of biological CAM. The aim of this study was to evaluate the prevalence and knowledge of phytotherapy among patients (pts) undergoing anti-cancer treatment for breast cancer (BC)
Methods
From June to September 2017, 93 patients treated in our comprehensive cancer center, were asked to fulfill a standardized questionnaire regarding use of HM. Clinico-pathological characteristics were recorded, as well as the antineoplastic treatment (TT). HM were defined as plants used for their therapeutic properties
Results
Our population was: 34 BC localized, 28 BC with axillary lymphadenopathy, 31 BC advanced. 60.9% (95%CI: 50.1-70.9) used one or more CAM during TT. Most popular CAM were respectively, homeopathy, HM, acupuncture. 58.7% (95%CI: 48-68.9) knew HM, and 30 patients used it (32.6% (95%CI: 23.2-43.2)). HM use was more prevalent in localized cancer pts (p = 0,020). 7 started it during TT. 4 thought HM had synergistic effect on TT. No pts thought HM was more efficient than TT. Main reasons for CAM use were to improve health condition (19) or reduce TT's adverse effects (17). Half of them believed HM is harmless, 33.3% (10/30 95%CI: 17.3-52.8) had informed their oncologist; 28 would appreciate information on herbs
Conclusions
Prevalence of CAM use in cancer pts is high. However, herbs are likely to interact with conventional drugs. Pts have to be educated and further works are needed in this field

eP364
ANEMIA ASSOCIATED WITH NON-CYTOTOXIC AGENTS (PD-[L]1, PARP AND OTHER TARGETED THERAPIES): A REVIEW OF THE LITERATURE

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Introduction
Anemia of inflammation and bone marrow suppression are the main causes of anemia in patients with advanced cancer. However, other pathways blockade when targeted therapies are used, can be the reason for reduced Hb levels in such patients.
Methods
Systematic review and meta-analysis reporting pooled incidence of anemia with biological agents were considered. Studies regarding hematological diseases were excluded.
Results
Risk of all grades anemia was 44% (G3-4 were about 5%) and was in particular high with oral multitarget TKIs, probably because of the interference with bone marrow erythropoiesis due to FLT-3 and KIT receptors. Anemia due to immunotherapy was evaluated in a systematic review of 47 studies with PD-(L)1 inhibitors for a total of 9,324 evaluable patients. Incidence of G1-4 and G3-4 anemia associated with PD-(L)1 inhibitor was 9.8% (95%CI, 6–13.6%) and 5% (95%CI, 3.3–6.7%) respectively. Other agents that are associated with anemia onset are PARP-inhibitors and CDK 4/6 inhibitors. Six studies with approved CDK 4/6 inhibitors report a risk of all grades and G3-4 anemia of 3.57 and 2.8%. In PARP inhibitors (olaparib and niraparib) risk of severe anemia were 8.2 and 25.3%.
Conclusions
risk of anemia with targeted therapies is not negligible (about 40-50%) with reduced risk associated with immunotherapy (about 10%). Management is conservative, with transfusions indicated for severe anemia only, otherwise supportive care and iron supplementation is suggested. Oral iron should be firstly considered, in particular new generation delivery systems, like Sucrosomial®iron per our experience, ensuring high tolerability and bioavailability.

eP365
A PROSPECTIVE SINGLE CENTER STUDY OF PREOPERATIVE BLOOD ORDERING SCHEDULE, INDICATIONS OF BLOOD AMONG PATIENTS UNDERGOING ELECTIVE CURATIVE SURGERY FOR MAJOR ONCOLOGICAL RESECTIONS

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Introduction
Patients undergoing major oncological surgery are at risk for severe bleeding and coagulopathy due to the tumour biology, preoperative cancer therapies, anatomic features of the surgical area and complexity of the resection. The rate of perioperative blood transfusions the rate still remains high. The maximum surgical blood order schedule (MSBOS) was designed to aid the control of blood bank products stock by improving the efficiency of ordering blood for use in elective surgery
Methods
A prospective study of all biopsy proven, consenting, cancer patients of age 18 to 80 years who underwent elective curative cancer surgery at SVIMS over a period of 1 year from 1st June 2016 to 31st May 2017
1374 PRBC and 271 FFPs were reserved for all the procedures of which 406 PRBC were transfused
Results
740 cases were included in the study. Women outnumbered men by a ratio of 3.4:1, majority of our patients were in their 5th, 6th and 7th decades
Conclusions
1. In our study there was a significant over ordering of blood for most of the procedures, 70.5% of PRBC and 55% of the FFPs were unused.
2. In order to maximally use the limited resources available to any surgical unit, the strategy of MSBOS calculation and its application will save money, labour, and time without compromising on patient care.
3. MSBOS is applicable to vast majority of procedures, but will need tailoring based on patient charecteristics
4. MSBOS table is enclosed above, each institute should have its own MSBOS for its surgical cases.

eP366
ASSERT: A PROSPECTIVE, OBSERVATIONAL STUDY MEASURING SODIUM IMPROVEMENT AND OUTCOMES IN CANCER PATIENTS TREATED FOR MODERATE TO SEVERE HYPONATREMIA SECONDARY TO SIADH.

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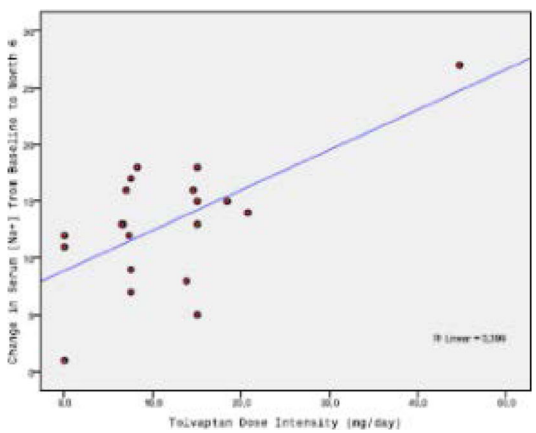
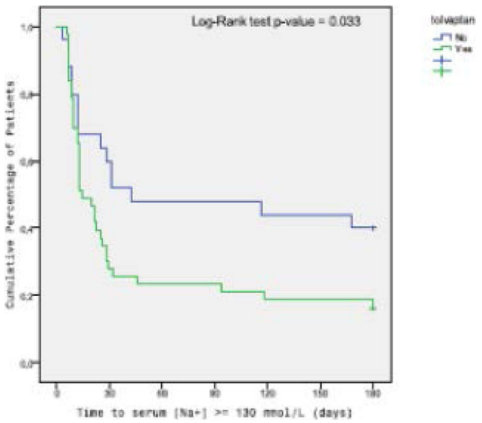
Introduction
In cancer patients, a leading cause of hyponatraemia is syndrome of inappropriate ADH secretion (SIADH). Several publications associate hyponatraemia with a poorer survival than that seen in eunatraemic cancer patients.
Methods
68 evaluable cancer patients with hyponatraemia were enrolled in an observational prospective non-interventional study (ClinicalTrials.gov number, NCT02573077), in oncology departments of 18 intuitions in Italy. Primary outcome was change in serum [Na+] from the baseline to the end of the first month of observational period or until earlier discontinuation from the study.



Results

Patients in Group 1, received at least one dose of tolvaptan during the study (N=25), while patients in Group 2 were never treated with tolvaptan (N=43). Primary outcomedemonstrated a numerical improvement for tolvaptan (p=0.089). The median overall survival time was in favour of Group 1 vs Group 2 (123 vs 56 days, p=0.001). The linear regression analysis in the full cohort showed that tolvaptan dose intensity correlated significantly with clinical response after six months (p=0.003, Figure i). 20 patients completed a six-month observation period, 9 from Group 1 and 11 from Group 2. Patients in Group 1 achieving a serum [Na+] ≥ 130 mmol/L at 6-months resulted significantly higher than in Group 2 (83.7% vs. 60.0%; p= 0.033, Figure ii).



Conclusions

Hyponatraemia secondary to SIADH is a potentially modifiable risk factor implicated in the survival of cancer patients. Acting effective and timely on the normalization of sodium levels preferentially by the use of pharmacological treatment rather than with other non-pharmacological routinely applied in clinical practice might have a positive effect on prognosis.

eP367

PROGNOTIC ROLE OF HYPONATREMIA IN PATIENTS WITH RADICALLY RESECTED PANCREATIC CANCER

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Introduction

Hyponatremia represents the most common electrolyte disorder in the oncology setting acting as a negative prognostic factor in many neoplastic diseases. In this study, we aimed to assess for the first time the prognostic role of presurgery hyponatremia in patients with radically resected pancreatic cancer.

Methods

Eighty-nine patients with stage I-III pancreatic ductal adenocarcinoma underwent radical surgery between November 2012 and October 2014. Relapse free survival (RFS) and disease specific survival (DSS) were estimated using Kaplan-Meier method. A Cox regression model was carried out for univariate and multivariate analyses. Fisher's exact test was used to estimate correlation between variables.

Results

Twelve patients (14%) showed hyponatremia at diagnosis. The median DSS was 20 months in patients with hyponatremia versus not reached in eunatremic patients ($p < 0.1073$), while a statistical significant difference was observed in term of median RFS equal to 10 months *vs* 17 months respectively ($p = 0.0233$). Regarding clinical features (hyponatremia, smoke and alcoholic habit, diabetes, pain and jaundice), patients with 4 or more of these factors had a worse prognosis (mDSS 30 months vs not reached; HR=0.40, 95% CI 0.16-0.80; $p = 0.0120$).

Conclusions

The detection of hyponatremia at the time of diagnosis and its prompt correction should be considered for the correct management of patients with pancreatic carcinoma.

eP368

LEGALIZATION OF RECREATIONAL CANNABIS IN CANADA: WHAT ARE THE POTENTIAL IMPLICATIONS FOR PUBLIC HEALTH?

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Introduction

Recreational cannabis is planned to be legalized in Canada in 2018. However, its effects on public health have been unclear. This scoping review will provide an overview of Canada's planned legalization framework with attention paid to distribution channels, analysis of legalization economics, and recently completed international studies assessing its potential public health implications.

Methods

A detailed review the grey literature provided an overview of planned legislation. A scoping review was conducted using Ovid Medline, Embase, and Google Scholar to identify articles assessing cannabis legalization on opioid use and abuse, and alcohol use.

Results

Canada's framework for cannabis distribution is varied across provinces, and jurisdictional responsibility is mixed across provincial and federal levels. Few studies assessed the outcomes of opioid use and abuse, and alcohol use. Opioid prescriptions and mortality declined following legalization in several studies. Alcohol use also decreased following legalization, but cannabis use increased significantly.

Conclusions

The results of the scoping review provide a positive outlook for Canadian recreational cannabis legalization. It is important to understand the cultural and legislative differences between jurisdictions examined in this review which may affect the applicability to Canada's case. Further research is needed to understand the full implications of legalization.

eP369

SAFETY AND EFFECTIVENESS OF ERIBULIN IN THAI METASTATIC BREAST CANCER PATIENTS: A POST-MARKETING OBSERVATIONAL RETROSPECTIVE STUDY

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Introduction

Microtubule inhibitor Eribulin is approved for the later line chemotherapy for metastatic breast cancer (MBC). Several phase III studies revealed its efficacy similar to other single agent treatment option. However, data of effectiveness and safety profile of eribulin in real practice is still limit.

Methods

The retrospective medical record review was perform in 55 MBC patients who received eribulin at King Chulalongkorn Memorial Hospital since the year 2013 to 2018. Effectiveness was evaluate in terms of time to treatment failure (TTF) and overall survival (OS). Adverse events during treatment were also records to assess safety of this drug.

Results
The average age of patients was 56.85 ± 14.4 years old. Most of patients (approximately 96%) had performance status of ECOG 0-1 at the starting of eribulin treatment and 34 patients (61.8%) received eribulin as the second or third line chemotherapy. Total eribulin treatment cycles were ranged from 1 to 10 cycles with the median at 4 cycles. The most common grad 3-4 hematologic adverse events were found in this study was neutropenia at 38.2%. Grade 1-2 peripheral neuropathy was also commonly found at 52.7%. The median TTF was 77 days (range 7-237 days). Twenty-five patients (44.6%) died after receiving eribulin treatment resulted in 54.5% overall survival rate with median survival at 208 days (range 74-953 days).
Conclusions
Effectiveness of eribulin treatment in real clinical setting was relatively less reported in clinical trials. While the incidence of grade 3-4 neutropenia was lower while the rate of grade 1-2 peripheral neuropathy was higher.

eP370
MORTALITY WITHIN 30 DAYS OF IMMUNOTHERAPY (CHECKPOINT INHIBITORS) IN METASTATIC CANCER PATIENTS TREATED AT AUSTRALIAN TERTIARY CANCER CENTRE

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Introduction
Cancer treatment has evolved rapidly since the advent of immunotherapy (checkpoint inhibitors). As compared to chemotherapy, immunotherapy agents are associated with a more favourable but distinct side effect profile. Mortality within 30-days of chemotherapy in cancer patients has been accepted as a clinical indicator of preventable harm and used as an auditing tool for clinical practice and improving quality of life. This should be investigated in the current era of immunotherapy.
Methods
We conducted a retrospective study. Clinical data on patients treated with immunotherapy at Calvary Mater Newcastle between 2006 and 2018 was collected. Data were compared with 30-day mortality statistics of patients that received chemotherapy.
Results
Seventy-six (12.6%) patients died within 30-days of receiving immunotherapy. Median age was 68 years (35-90). Melanoma was the most prevalent cancer type (63%) followed by lung (20%). 47% of patients received immunotherapy as first-line treatment and 39% as second-line. A median number of immunotherapy treatments administered was 2 (1-16). A quarter of patients had ECOG 3 and 4 prior to last immunotherapy. Majority of deaths were related to disease (86%). Nearly 80% of patients died within hospitals. One patient died due to treatment-related pneumonitis. In univariate analysis, there was no association between mortality and patients' demographic variables such as age, body mass index, cancer type and ECOG status.
Conclusions
To our knowledge, this is the first ever real-world data on 30-day mortality after immunotherapy in advanced cancer. 30-day mortality rates were comparable to published data on patients treated with systemic chemotherapy.

eP371
IMPROVING THE QUALITY OF THE CANCER CARE PATHWAY: SELECTING A SET OF QUALITY INDICATORS

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Introduction
Quality indicators (QIs) have been widely developed in recent years for cancer centers but are focused predominantly on hospital care while few deal with the care pathway in oncology (the stages between patient hospital admissions and discharges comings and goings and links with non-hospital professionals such as GPs, pharmacists and private nurses). The aim is to select a QI set with a panel of experts.
Methods
A survey of available QIs relating to the oncology care pathway was conducted from the gray literature and literature reviews.
Selection criteria were applied in order to retrieve cancer pathway indicators relating primarily to the stages between patient hospital admissions and discharges.
The list of QIs was put to a panel of 26 experts (oncologists, pharmacists, SRNs) working in hospitals throughout France for them to select the QIs through a consensus method approach (nominal group technique). A rating system was employed to rate each QI based on the relevance and feasibility of the QI.
Results
131 of the 5731 QIs identified in the initiatives were included. 17 indicators were selected by consensus of the experts. The set of selected QIs comprises outcome (8), process (5) and structure (4) indicators. The list of selected QIs is available in Figure 1.

QI	Description	Type
1	Symptoms and disease progression	Outcome -PROMs
2	Assessment of tolerance to cancer treatment	Process
3	Assessment of adherence to cancer treatment	Process
4	Delivery of the Personalized Care Plan to the patient	Outcome -PREMs
5	Quality of the liaison document	Process
6	Contact with the patient at home after starting cancer treatment	Process
7	Patient's care coordination experience	Outcome - PREMs
8	Composite score for the management of patients receiving oral therapy	Structure
9	Monitoring of dose adjustments	Outcome
10	Monitoring of treatment discontinuation	Outcome
11	Medicines reconciliation	Process
12	Composite score for toxicity monitoring	Structure
13	Composite score for supportive care	Structure
14	Hospitalization following a serious adverse event	Outcome
15	Questionnaire on the patient's care pathway experience	Outcome - PREMs
16	Composite score for the patient's therapeutic education	Structure
17	Unscheduled admissions	Outcome

Conclusions
These QIs can also be put to a group of non-hospital professionals and to patients for validation of the QI set. They will then be collected from the experts' institutions to validate the metrological qualities of the indicators.

eP372
VERMILIONECTOMY AND CLINICOPATHOLOGIC PROFILE IN ACTINIC CHEILITIS – 102 CASES

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Introduction
Actinic Cheilitis (AC) is a malignant lesion localized principally on the lower lip vermilion, with potential to develop into Squamous Cell Carcinoma (SCC). Objective this study is to report the casuistic of AC treated by vermilionectomy, its clinic pathologic profile and association with degree of dysplasia.

Methods
Between January 2006 and August 2015 were raised the total of patients treated of AC with surgery in Clinical Hospital of São Paulo State University, Brazil. Clinic pathologic profile and association with degree of epithelial dysplasia of AC were evaluated.
Results
Totals of 253 surgical treatment of AC were realized, 47 female and 206 male. Histopathological analyses showed: 0.79% basal cell carcinoma associated with moderate and severe dysplasia, 10.28% SCC; AC presented 34.39% no epithelial dysplasia, 16.20% mild dysplasia, 22.92% moderate dysplasia, 13.44% severe dysplasia and 1.98% AC ulcerated. Vermilionectomy corresponded to 102 (40.32%) of surgical AC, 15 female and 87 male, histopathology revealed 14.71% SCC, 85.29% of the AC presented 37.25% no epithelial dysplasia, 34,32% moderate, and 13,73% severe epithelial dysplasia.
Conclusions
Histological changes of the AC are not distributed equally by the lip vermilion, even where the clinical characteristics are homogeneous. Our study shows that most of the lesions diagnosed clinically as AC, histologically revealed SSC and AC presented moderate and severe epithelial dysplasia, and ulceration, which have a high malignant potential. The advantage of vermilionectomy is the complete removal of the epithelium altered, and histopathological review of all tissue compared with others treatments for AC, the postoperative with few symptoms and rapid healing.

eP373
IN VITRO CYTOTOXICITY OF A NOVEL PROTEIN ULLB-0005 IN PANCREATIC CANCER A BREAK THOUGH INNOVATION

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Introduction
To evaluate cytotoxicity of ULLB-0005, which is a novel protein on pancreatic cancer cells
Methods
ULLB-0005 is a protein derived from natural fungus with high binding specificity for carbohydrate antigen and strong apoptotic signal leading to death of cancer cells. For in vitro study, PANC-1 cells were treated with ULLB-0005 at concentration ranging from 2.5-80 μg/mL. Following incubation, the cell cytotoxicity was estimated by MTT assay.
Results
Based on in vitro study, cytotoxicity was found to be 60.8% for ULLB-0005 and 65.1% for doxorubicin.
In order to find if ULLB-0005 is cytotoxic to PANC-1 cells, MTT assay was performed. The results demonstrated that ULLB-0005 is cytotoxic.
Conclusions
Based on in vitro data, ULLB-0005 which is a novel protein derived from natural fungus is a potential anticancer drug for the treatment of pancreatic cancer. Further studies are going on to evaluate its efficacy with combination chemotherapy

eP374
COMPARING THE EFFECTIVENESS OF TWO TEACHING STRATEGIES FOR HANDLING TOTALLY IMPLANTED CATHETER

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Introduction
Totally Implanted Central Venous Catheter (TI-CVC) is a device widely used in oncology. So it requires that nurses know how to handling these devices with accuracy. This study aimed to compare the effectiveness of two teaching strategies for handling TI-CVC.
Methods
Quasi-experimental study was carried out with nurses from the Universitary Hospital of Brasília. The sample consisted of nurses who performed nursing care in adult patients with a TI-CVC. Those with a specialization in oncology were excluded. At first, nurses were asked to answer a cognitive knowledge questionnaire about TI-CVC and demonstrate their practical skills in low-fidelity catheter simulator. After this, they received a procedures manual on catheter handling (intervention A) and were instructed to study the contents of this manual. After one week, the nurses had cognitive knowledge and practical skills reassessed. Then, a theoretical-practical class (intervention B) was held with the contents of the procedures manual. At the end of the class, the nurses had their cognitive knowledge and practical skills reassessed.
Results
53 nurses enrolled the study. The cognitive performance mean score was 24.9 points. The practical skills mean score was 53,3. There was a statistically significant difference between the initial practical skills score of all the techniques evaluated, after reading the manual ($p = 0.00$) and after the theoretical-practical class ($p = 0.00$).
Conclusions
The two teaching strategies were effective in improving scores. However, the mean scores are higher after theoretical-pratical class, which highlights that the sum of the strategies provides greater scores of knowledge and practical performance.

eP375
A SYSTEMATIC APPROACH TO SMOKING CESSATION IN REGIONAL CANCER CENTRES IN ONTARIO, CANADA

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Introduction
Cancer patients who continue to smoke gain less benefit from treatments, experience greater toxicities, and are at increased risk of cancer recurrence, second primaries and mortality. Despite awareness of these negative health consequences of continued smoking, a systematic approach to help cancer patients quit smoking is uncommon.
Methods
In 2012, Cancer Care Ontario (CCO) established a Framework for smoking cessation across all 14 regional cancer centres (RCCs) in Ontario, Canada. The Framework included: implementing the 5As (Ask, Advise, Assess, Assist, Arrange) model; recruitment of regional champions to promote the program; and centralized data collection and reporting. Tobacco Use Screening rates became a performance metric to drive implementation and were reviewed quarterly with leadership. During 2014/15, just over 50% of cancer patients were screened for tobacco use. Efforts to improve performance included transitioning to the 3As (Ask, Advise, Act) model, monitoring "Accepted a Referral" rates as a performance metric, and use of an "opt-out" approach to referrals (where tobacco users are automatically referred unless they refuse). An environmental scan and site visits resulted in RCC-specific improvement plans.
Results
The majority of RCCs are exceeding the Tobacco Use Screening target of 75%, but the proportion of smokers who Accepted a Referral remains low. The opt-out approach is anticipated to increase referral rates, and preliminary data are encouraging.

Conclusions
To improve program efficiency and impact, CCO's smoking cessation initiative adopted a 3As model and an opt-out referral process. Early results show a promising increase in the proportion of smokers accepting referrals to cessation services.

eP376
IMPLEMENTATION OF THE END OF LIFE OPTION ACT AT CITY OF HOPE, A CANCER RESEARCH INSTITUTION

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Introduction
Since June 9, 2016 California's End of Life Option Act (EOLOA) allows terminally ill adults with decisional capacity to obtain and self-administer aid-in-dying drugs (AIDD). City of Hope, a National Cancer Institute designated research and treatment center, opted to participate after thoughtful consideration and discussion. The City of Hope policy drafted by a multidisciplinary team of physicians, health educators, social workers, nurses and legal staff, became effective December 1, 2016.
Methods
The City of Hope policy relies heavily on designated EOLOA social workers to provide education to patients, physicians and staff, to follow the requirements of the law, and guide physicians as it pertains to the required process. The EOLOA Sub-Committee at City of Hope is a multi-disciplinary team under the oversight of the Ethics committee. The EOLOA Sub-committee streamlines physician education, physician recruitment, managing complex cases, and refining the policy as needed.
Results
Data collected from December 1, 2017 until December 31, 2018 showed 99 referrals to Social Work for EOLOA. 79 patients requested only education and 20 prescriptions were written for AIDD, with majority being oncology cases, males and Caucasian. Only 10 patients who were dispensed the AIDD have used it, and as a result passed away peacefully at home. The other 10 patients passed away from natural causes without using the AIDD or have not yet used the AIDD.
Conclusions
Continuous education for patients and health care providers is needed to ensure absolute compliance with the law. Clinical Social Work plays a leading role in this aspect of patient care.

eP377
SCOPING THE EVIDENCE FOR EMERGING TOPICS IN SUPPORTIVE CARE IN CANCER: EVIDENCE SYNTHESIS FOR BEST PRACTICE CLINICAL CARE

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Introduction
In supportive care, as a necessarily multi-disciplinary field that encompasses the whole course of cancer, new and diverse evidence is constantly emerging across multiple fields. A challenge for clinicians, consumers, and researchers is keeping up and ensuring that the best, most up-to-date evidence underpins diagnosis, treatment, survivorship, and end-of-life care.
Scoping reviews are a new, purpose-built approach for handling evidence from different sources, study designs, and perspectives. They can integrate knowledge from expert and consumer viewpoints with results from randomized controlled trials as well as qualitative research.
Methods
Different evidence synthesis methodologies have been developed over the years resulting in an expanding repertoire of approaches. One recent approach is the Preferred Reporting Items for Systematic Reviews and Meta-analysis for Scoping Reviews (PRISMA-ScR). The PRISMA-ScR was developed through a multi-stage process involving survey and Delphi methods and repeated consultation, debate, and testing with multi-disciplinary groups.
Results
Focusing on supportive cancer care, indications for undertaking scoping reviews will be described along with the latest methodological developments. Notable elements differentiating scoping reviews from other review types will be presented. Tools and resources for undertaking high-quality scoping reviews in the context of supportive care will be introduced and described along with considerations for how scoping reviews can underpin best practice supportive cancer research and care.
Conclusions
Scoping reviews are a relative newcomer to the evidence-based healthcare movement that have considerable application in the diverse, multi-disciplinary field of supportive cancer care. Researchers and clinicians should be aware of new evidence synthesis developments to enable rigorous research and reporting.

eP378
DEVELOPMENT AND RELIABILITY ANALYSIS OF AN ICF CORE SET FOR FUNCTIONING ASSEMENT OF ADULTS TREATED FOR CANCER AT HOSPITAL DISCHARGE

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Introduction
ICF Core Sets are a selection of ICF categories that best defined a minimum standard to perform functioning assessment in specific health situations.
Objective: To describe the development and reliability analysis of a Core Set for functioning assessment of adults treated for cancer at Hospital discharge.
Methods
Descriptive study of the process of developing a Core Set, which included five stages: (1) systematic review; (2) identification and linking of concepts with ICF categories (3) expert's consensus (4) operationalization (5) analysis of inter-rater reliability**. Population**: 21 experts participated in stage 3; 63 experts in stage 4 and 31 adults treated for cancer in stage 5. The study was approved by the scientific ethics committee (December 15, 2015)
Results
47 articles were included, from them 55 instruments were extracted. 208 concepts were identified from the instruments, of which 204 could be linked to CIF categories. In the expert's consensus 24 categories were selected, which were operationalized. In the reliability analysis, 23 codes obtained a significant correlation that varied between r = .916 and r = 1.0. The code d240 (stress management) did not obtain good inter-rater reliability, which is why it was eliminated.
Conclusions
The ICF provides a valuable frame of reference for identifying significant concepts related to the functioning of patients treated for cancer at hospital discharge. After the process of 5 stages we obtained a Core Set with 23 categories, this will soon undergo a validation process in a multicentric study with the participation of 5 health institutions, national and international

eP379
QUALITATIVE INTERVIEWS WITH ONCOLOGY STAFF ON THE UNDERSTANDING AND EXPERIENCE OF PRECISION MEDICINE

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Introduction
To explore the appraisal and experience of medical staff in oncology for precision medical, and provide basis for more accurate treatment and care for patients.
Methods
Using the phenomenological research method, the purpose sampling method was used to conduct semi-structured in-depth interviews with 8 doctors and 14 nurses in a third-grade hospital in Henan Province, using Colaizzi analysis method for data analysis.
Results
Oncologists extracted two themes in precision medicine: precision medical brings a high professional mission and sense of value to oncologists, the current limitations and expectations of precision medicine. Oncology nurses extracted two themes in the changes brought about by precision medicine: the update of the precise care concept corresponding to precision medicine, and the opportunity for precise care communication that is eager for precision medicine.
Conclusions
Oncology medical staff attach great importance to precision medicine, pay attention to the development trend of precision medicine, and have a greater need for the rapid development of precision medicine and clinical effective integration.

eP380
ENGAGING STAKEHOLDERS TO IDENTIFY RELEVANT OUTCOMES FOR DYSPHAGIA INTERVENTIONS

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Introduction
Swallowing function is often not preserved in up to 50% of patients receiving RT as part of curative HNC treatment. Dysphagia is of high relevance to various stakeholders who likely hold different perspectives about its health impact. In preparation for a large pragmatic RCT comparing effectiveness of different swallowing interventions, it was critical to ascertain outcomes relevant to all stakeholders by which to compare these interventions.
Methods
A formal stakeholder engagement process was mobilized to elicit recommendations on outcomes to measure effectiveness of dysphagia interventions. Four similar homogeneous stakeholder groups were organized in Canada and United States including patients/caregivers, allied clinicians, medical clinicians, and policy makers. Sessions included open dialogue and priority setting exercises led by expert facilitators to achieve consensus on relevant outcomes. Subsequently, representatives from each stakeholder group met as a heterogeneous Stakeholder Advisory Board (SAB) to arrive at overall recommendations.
Results
Each homogenous group identified a list of potential outcomes meaningful from their perspectives. The SAB members reviewed all outcomes in light of primary/secondary outcomes previously planned by trial investigators and considered the extent of survey burden, additional recommendations for secondary outcomes and potential confounders. The consensus-building discussions with SAB members resulted in a comprehensive list of specific outcomes capturing all perspectives addressing: swallowing-related physiology, function, quality of life, mental health, health burden, and health system variables.
Conclusions
This engagement process resulted in a set of relevant outcomes, representing all viewpoints, and a high degree of investment and commitment by stakeholders regarding participation in future research efforts.

eP381
THE ADAPTATION AND RESILIENCE OF FAMILY CAREGIVERS DURING THE CANCER TREATMENT IN TAIWAN

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Introduction
Family caregivers take the responsibility in providing care that often interferes caregivers' schedule. Although the caregiver burden might be a stress for caregivers, caregivers' resilience and positive perspectives might contribute to improve adaptation. The aim of this study was to identify the caregivers' resilience in providing care for cancer patients who underwent anticancer therapy.
Methods
This is a one-year survey study and currently proceeded in a teaching hospital in the northern Taiwan. We interviewed caregivers as they escorted cancer patients for treatment. In order to understand caregiver resilience, instruments included The Impact of Event-Revised, The Self-Efficacy, The Family Relationship index, The Work Interference scale, Post-traumatic growth scale, Life Oriented tool-revised, Benefit finding scale, The resilience scale and the MOS Short Form12 v.2.
Results
The average age of caregivers was 43.5 (SD±11.4). Caregiver burden were significantly negative correlated with post traumatic growth. Significantly, caregiver resilience is positively correlated to benefit finding, while it negatively correlated to the caregivers' schedule interference and family abandonment. Benefit finding has a significant correlation with resilience, family relationship, post-traumatic growth, and optimism. Caregiver burden was significantly negatively correlated to the post-traumatic growth. Most caregiver had less time to do exercies.
Conclusions
Family caregivers in Taiwan were optimised as cancer patients recieved treatment. They focused more on providing meal and being with patients. Older caregivers had better optimism and mental health. As caregivers had better family relationship and perceived personal growth can increase caregivers to find the benefits in providing care also contribute to increase resilience.

eP382
MULTICENTER RANDOMIZED DOUBLE-BLIND CROSSOVER TRIAL OF SUPERSATURATED CALCIUM-PHOSPHATE RINSE VERSUS NACL IN THE MANAGEMENT OF TARGETED ANTICANCER THERAPY-ASSOCIATED ORAL COMPLAINTS: COMTT TRIAL (NCT01265810)

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Introduction
Introduction
Oral adverse events (OAEs) are frequent and clinically relevant reactions arising from targeted anticancer therapies including multi-targeted tyrosine kinase inhibitors (TKI) and mammalian target of rapamycin inhibitors

(mTORI). We evaluated the efficacy of supersaturated calcium-phosphate mouth rinse (SCPR) in reducing OAEs of patients on active treatment in a multicenter, double-blind, crossover, randomized phase III trial.

Methods

Patients treated with sunitinib, sorafenib, pazopanib, everolimus or temsirolimus with OAEs were randomized for a 14-days rinse period with SCPR or NaCl. Patients with persistent or reappearing OAEs while on active targeted treatment switched to the opposite treatment arm for a second rinse period. The primary endpoint was the severity of patient-reported OAEs, as determined by the change in the modified Vanderbilt Head and Neck Symptom Survey (VHNSS) 2.0, measured 3 times a week.

Results

A total of 59 out of 64 randomized patients started the first rinse period, using SCPR (n=20) or NaCl (n=39). [Preliminary data were already presented at ECC 2015. Now we can present the final results. We are currently running the analysis and expect to present the final abstract by end of March 2019.]

Conclusions

[Conclusion section will be completed once the analyses will be final at least March 31 2019].

eP383
ADHERENCE TO ORAL TARGETED THERAPY FOR A COHORT OF WOMEN WITH BREAST CANCER

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Introduction

African American (AA) women with breast cancer (BrCa) have worse BrCA outcomes than any other race in SC; among reasons for this include cancer therapy nonadherence. Our purpose was to describe oral targeted therapy (TT) adherence among a cohort of women with BrCA.

Methods

We analyzed data from a study (1R15CA179355-01A1; Adams, PI) that combined administrative claims data from SC's Medicaid Program and a state-based, private-payor health plan to matching BrCA cases from the SC Central Cancer Registry. Race was determined by patient self-report. We defined oral TT as non-hormonal treatment (e.g., lapatinib [Tykerb®], capecitabine [Xeloda®]). Medication Possession Ratios (MPRs) were calculated using refill service dates and number of pills dispensed. We used descriptive statistics to characterize the study sample and independent samples t-test to compare descriptive statistics by race and age.

Results

Women (N = 122) took capecitabine, lapatinib, or capecitabine with lapatinib. All lived in an urban/metropolitan area. The mean MPR was 0.82 (±0.22). Adherence was lower for women ≤ 35 years (N = 8, MPR = 0.67 ±0.-0.12) than women ≥36 years (N = 114, MPR = 0.83, ±-0.27). Average MPRs for African American women (N = 51) were lower (0.78) than for European American women (N = 58, 0.85), but were not statistically different.

Conclusions

Our findings provide evidence of differences in adherence rates when comparing younger to older women with BrCA. Because no women in our sample took TT while living in a rural area, TT adherence for this patient population remains a significant gap in research.

eP384
ALTERNATE METHOD TO PROVIDE PALLIATIVE CARE WHERE THERE ARE SHORT CAREGIVERS

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Introduction

Due to financial incapability and absence of manpower poor families often fail to carry their advanced cancer patients to the nodal centres. This pilot study will explore whether communication by mobile phone can lessen this burden. To identify and try to solve to the extent possible the main difficulties in giving palliative care to the terminal cancer patients of the area.

Methods

Initially a plan was generated regarding management of an advanced cancer patient in a nodal centre at District Head Quarter. Subsequently every two week a trained social worker attached to nodal centre will follow up and give necessary advice and emotional support to the patients and their families through their registered mobile phone number. Patient's family were also encouraged to communicate with the team by phone in case of fresh complain and urgency in between.

Results

Since initiation cancer patients were contacted by mobile phone every two weeks to enquire about their difficulties. In 76% of the situation trained social workers could give necessary advice by phone regarding management of their physical symptoms. Moreover patient's family were really overwhelmed by the emotional support offered by the team over phone. Only 24% of cancer patients has to attend the nodal centre for expert advice from Palliative Care specialists.

Conclusions

This novel approach helped:-

In providing regular physical and emotional support to the patients and their families.

In significantly reducing the financial and manpower problems of carrying patients to the nodal units.

In improve the quality of life of patients by continuous guidance.

eP385
DIFFICULTIES IN PROVIDING PALLIATIVE CARE IN RURAL INDIA (WEST BENGAL) – EXPERIENCE OF AN NGO

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Introduction

As in any developing countries state of West Bengal in India has a huge burden of cancer patients in advanced stage coming from rural area where awareness regarding the usefulness of palliative care in rather poor. Our goal is to give a pain free good quality of life in these advanced stage cancer patients. Objective of this study is to identify the main difficulties in achieving the above goal in a rural village setting in India.

Methods

Advanced cancer patients in need of palliative care in various villages in of rural India were selected for this study. Their symptoms and managements in that rural surroundings were evaluated by an NGO (under the guidance of a senior palliative care specialist) working in that area. An attempt was made to identify the main obstacles in getting proper palliative care in a rural setting.

Results

Pain, fatigue are the main symptoms effecting these patients. In most patients pain and other symptoms control were grossly inadequate due to lack of properly trained manpower in the rural India. However regular homecare visits by a group of social workers were of immense help in the last few months of life. NGO team was well guided by a palliative care specialist.

Conclusions

There is a wide gap of trained manpower in this filled in rural areas of India. Dedicated groups from rural area itself need encouragement and proper training, so that difficult symptoms can be managed locally along with necessary social and psychological support to these patients.

eP386
DEVELOPMENT OF PAEDIATRIC PALLIATIVE CARE IN UGANDA

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Introduction
Issues: Until recently, Paediatric Palliative Care in Uganda was ignored, with less than 5% of patients seen at Hospice Africa Uganda being Paediatric patients. African Palliative Care Association (APCA) and Palliative Care Association of Uganda (PCAU) are strongly advocating for Paediatric Palliative Care (PPC) at the national level.
Methods
Description: APCA and PCAU has been working closely with International Children's Palliative Care Network (ICPCN) to train health care professionals in Uganda. One major training has been conducted in Uganda since 1998, with over 56 health care professionals being trained and awarded diplomas for the first time in 2017 by Mildmay Uganda. It began as a certificate course in 2009, when Mildmay Uganda was selected to be one of the three organizations in Africa, to establish a Children's Palliative Care Training and Clinical Excellence Center in order to reduce infant mortality rates and give hope to children with life threatening illnesses.
Results
Lessons learned: These activities have resulted in awareness on the palliative care needs of children. As a result, there are now 5 government hospitals which have started PPC within their respectful institutions, while all government hospitals that have integrated palliative care have been encouraged to include children in their services
Conclusions
Recommendations: There are still many challenges which need to be addressed. These include integration of PPC in the pre and post graduates curricula for health care professionals; policies for PPC; setting up specific services for children; creating awareness on the need for PPC and demystifying the common myths about PPC.

eP387
TELEPHONIC COMMUNICATION IN PALLIATIVE CARE FOR BETTER MANAGEMENT OF TERMINAL CANCER PATIENTS IN RURAL INDIA - AN NGO BASED APPROACH.

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Introduction
Due to financial incapability and absence of manpower poor families often fail to carry their advanced cancer patients to the nodal centres. This pilot study will explore whether communication by mobile phone can lessen this burden.
Methods
Initially a plan was generated regarding management of an advanced cancer patient in a nodal centre at District Head Quarter. Subsequently every two week a trained social worker attached to nodal centre will follow up and give necessary advice and emotional support to the patients and their families through their registered mobile phone number. Patient's family were also encouraged to communicate with the team by phone in case of fresh complain and urgency in between.
Results
Since January 2016 to January 2018, 245 cancer patients were contacted by mobile phone every two weeks to enquire about their difficulties. In 76% of the situation trained social workers could give necessary advice by phone regarding management of their physical symptoms. Moreover patient's family were really overwhelmed by the emotional support offered by the team over phone. Only 24% of cancer patients has to attend the nodal centre for expert advice from Palliative Care specialists.
Conclusions
This novel approach helped
* In providing regular physical and emotional support to the patients and their families.
* In significantly reducing the financial and manpower problems of carrying patients to nodal units.
* In improve the quality of life of patients by continuous guidance.
More and more team members can take help of this new strategy for better communication and uninterrupted care.

eP388
THE ROLE OF VOLUNTEERS IN QUALITY PALLIATIVE CARE DELIVERY

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Introduction
Here in India almost 75% of cancer patient die a sad death of neglect due to lack of awareness about palliative care and low economic level. Surveys in India show that two third of cancer patient do not get proper care during the terminal phase of their life. Palliative care through volunteers can make a significant difference in this respect. To identify
Methods
Feedback from patients and their relatives regarding the palliative care they receive from nursing home and from volunteers and compare the two. Also feedback from volunteers regarding their positive and negative experience while delivering palliative care service. Then evaluate the data to compare and improve the quality of service.
Results
We carried out two studies. One study was undertaken in nursing home palliative care and another was in home setting by volunteers. Both studies were in adult palliative care services. Since January 2016, 416 cases were studied to enquire about their experience in both home based care and nursing home care. Both the studies fulfilled our quality appraisal criteria. One found that those families and patients who received home visits from volunteers were significantly more satisfied. The study highlighted the value of the role of volunteers in better satisfaction of patients and their families.
Conclusions
Further research is needed to evaluate the role of volunteers in palliative care and how it can be delivered appropriately and effectively. We also wish to compare our findings with similar studies elsewhere.

eP389
IT'S EVERYONE'S BUSINESS: CAPTURING THE CONVERSATION

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Introduction
Results of research studies show that clinicians typically avoid discussing goals of care (GoC) and prognoses with patients. However, in order for patients facing serious illness to receive the care they want that is consistent with their values and wishes, clinicians must be skilled at challenging conversations. Currently, GoC documentation is variable between generalist providers leaving the palliative care clinicians unclear if the discussions took place or what was understood regarding quality of life goals. Because of this, a standardized GoC form was implemented in the EHR to help facilitate communication between clinicians that would be accessible for subsequent admissions and sudden changes in the patient's condition.
Methods
The current standard of care is for clinicians to review GoC with patients upon admission and to document them in the GoC section in the EHR

utilizing specific criteria. After an education session to all clinicians regarding the essential information to be included, GoC discussions were reviewed for all palliative care consults. Monthly standardized e-mail messages are sent to providers acknowledging good documentation as well as to offer assistance to improve discussion and documentation.

Results

GoC discussions and documentation increased by over 25% during the initial study intervention. A secondary analysis of individual provider results is in progress.

Conclusions

Providing feedback to clinicians helped improve GoC discussions and documentation in the EHR. By educating providers regarding how to have difficult conversations surrounding GoC increased documentation leading to care that aligns with the patient's wishes.

eP390

AUSTRALIAN END-OF-LIFE CARE PROFESSIONALS' ATTITUDES TOWARD VOLUNTARY ASSISTED DYING

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Introduction

Changes to end-of- life care legislation in Victoria, a state of Australia will allow Victorians access to Voluntary Assisted Dying (VAD). Given health professionals' role in caring for patients at the end of life, their perspectives on legalization and implementation of VAD are important in understanding the implications for patient care.

Methods

Qualitative research design using semi-structured interviews with 16 purposively sampled health professionals with experience in caring for people with life-limiting illness. Interviews were audio-recorded and transcribed verbatim, and subjected to qualitative descriptive analysis techniques. Consolidated Criteria for Reporting Qualitative Research guidelines were followed.

Results

Participants reported two overarching positions grounded in differing moral philosophies with compelling arguments both for and against legalization of VAD. A third and common line of argument emerged from areas of shared concern and uncertainty about the practical consequences of introducing VAD. While a diversity of opinion was evident, all participants advocated for more public education and funding into end-of-life care services to make high quality care equitable and widely available. All participants reported a commitment to reducing human suffering and facilitating best possible dying experiences for the patients in their care.

Conclusions

Common dedication to facilitating 'good' dying experiences exists among experts despite their divergent views on VAD. Ongoing engagement with stakeholders is needed for practical resolution in the interest of developing health policy for providing safe and equitable care to patients at the end of life.

eP391

AN AUDIT TO ASSESS THE PRACTICE OF MANAGING CONSTIPATION IN PATIENTS ON ORAL MORPHINE AT JOY HOSPICE MBALE

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Introduction

Susan (2004) reported that constipation is a common problem among persons receiving opiates for treatment of pain. It is often under assessed and under treated by both physicians and nurses, leaving many patients to grapple with this problem alone. Because of the above, I carried out an audit to assess the practice of managing constipation among cancer patients on oral morphine at J.O.Y Hospice Mbale Uganda in 2014 specifically looking at determining the proportion of patients on oral morphine assessed for constipation, whether patients are prescribed a laxative and nutritional advice given and identifying the common laxatives prescribed.

Methods

It was a retrospective audit conducted at J.O.Y Hospice medical services Mbale Uganda,
including all patients prescribed oral morphine, children and adults male or female at initial three subsequent visits
while excluding those files of patients on oral morphine missing dates on which patient were seen, files having unclear handwriting and files for patients who didn't turn up for the initial three subsequent visits

Results

46(86%) patients were assessed for constipation and 07(13%) not assessed.
51 (96.2%) patients were prescribed a laxative only and 2 (3.8%) not prescribed anything.
Bisacodyl was the commonest laxative prescribed at 49(96%) of the 51 patients assessed.
None of these patients was given nutritional advice or prescribed lactulose or Senna seeds.

Conclusions

All patients on oral morphine must be assessed for constipation at all visits. It is good to prescribe a laxative but better if both a laxative and nutritional advice are given to these patients to prevent constipation.

eP392

ESTABLISH HOSPICE & PALLIATIVE CARE PROGRAM AND MANAGEMENT SYSTEM WITH TRANS-DISCIPLINARY TEAM: A PROGRAM MANAGER PERSPECTIVE WITH CHINESE NATIONAL PILOT STUDIES

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Introduction

In 2016, a hospice palliative care unit was initiated in Beijing Haidian Hospital, which was the first pilot study program in Beijing. Challenges of implementing the program and the process to facilitate change in healthcare and society culture in China.

Methods

This Hospice Palliative Care Haidian Initiative program has been partnered with global organizations OHI and HPCAF at beginning of the program development in order to streamline the program design and establish SOPs. The program was operated by a Trans-Disciplinary Team(TDT) which is the first of these kinds of team structure in China, including the education, research and translational groups, program manager, physicians, nurses, pharmacists, technicians, social workers, psychologic counsellors, chaplains and volunteers.

Results

The implementation of the program has been full of obstacles, encompassing the lack of trained professionals, limited financial resources, higher staff turnover, and professional misunderstanding and public rejection. Now HPCHI upgraded to National Pilot model of China, sponsored by National Health Commission and Ministry of Civil Affairs, the trial program team led by the program manager, has overcome core barriers/

challenges in team building, enablement, resource supporting, public education, and society awareness to keep the program growth.

Conclusions

The lessons learned from the experience of developing the first pilot program in China will be presented. Particularly, barriers and challenges will be shared as well as facilitating factors, the pathway to partner across disciplines with policy makers and in research, education and practice. This helps the team in the creation of new knowledge and in continuing to establish the evidence-based value.

eP393

THE ESTABLISHMENT OF A THREE-DIMENSIONAL SERVICE SYSTEM FOR HOSPICE & PALLIATIVE CARE IN CHINA: A STAKEHOLDER THEORY PERSPECTIVE

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Introduction

The great demand caused by problems such as the aging and high incidence of malignant diseases has formed a great contrast with the lagging Hospice, Palliative & Supportive Care(HPSC) in China. From the perspective of the national pilot studies, it is both imperative and urgent to accelerate the development of HPSC and service system.

Methods

This article analyzes the current situation and problems of the development of the HPSC in China, summarizes the research progress of the HPSC system, and comprehensively sorts out the stakeholders of HPSC for the first time, classifies them into eight categories and uses Mitchell scoring method identifies core stakeholders.

Results

On this basis, a three-dimensional service system for HPSC was constructed: First, the framework of the three-dimensional service system for HPSC was designed, and the horizontal and vertical relationships among various stakeholders were straightened out; Second, propose countermeasures to build a three-dimensional service system for HPSC, including propaganda and education, policies and regulations, quality management, talent supply, and information systems, etc.

Conclusions

According to the combing and induction of the literature, this article believes that current academic community lacks systematic research and in-depth analysis of the construction of HPSC stakeholders and service system with inter-departmental mechanisms. Few studies focusing on strategic level and micro-practice, and they are relatively scattered. Lack of deep research on the value consensus, concept, and universal model of collaboration, and lack of representative theory; especially at strategic heights to examine China. Also few studies on the government inter-departmental mechanism construction under the big governments.

eP394

EFFECTIVENESS OF HYDROMORPHONE HYDROCHLORIDE AGAINST CANCER PATIENT DYSPNEA

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Introduction

In Japan, June 2017, sustained release hydromorphone hydrochloride (hereinafter abbreviated as HyH) and the rapid release HyH were released for the cancer pain. HyH intravenous injection was released in July 2018. Our hospital also used cases for cancer pain accompanied by dyspnea symptoms. There are few reports on the effectiveness of HyH on respiratory distress symptoms in Japan.

Methods

We investigate the effectiveness of HyH on dyspnea symptoms caused by cancer. The subjects retrospectively examined cases using HyH for cases with cancer pain accompanied by dyspnea among palliative care team intervention cases from July 2017 to September 2018.

Results

In July 2017 - September 2018, 27 cases were using HyH for cases with cancer pain accompanied by dyspnea. The HyH preparations used were duplicated, 22 sustained release preparations, 21 rapid release preparations and 1 intravenous preparation. Cancer types were lung cancer: 10 cases, malignant pleural mesothelioma: 11 cases, metastatic lung tumor / pleural dissemination: 11 cases. The effective rate for dyspnea was 69% (22/32).

Conclusions

Systemic administration of morphine to dyspnea of cancer patients is recommended. In our study, HyH showed a high efficacy rate of 69% against dyspnea. Until now, there were many cases that hesitated to use morphine hydrochloride for the purpose of alleviating symptoms of dyspnea in cases with impaired renal function. However, the HyH can be used for cases with decreased renal function compared to morphine hydrochloride, it is possible to use it relatively carelessly for patients with dyspnea symptoms.

eP395

ACCESS TO INPATIENT PALLIATIVE CARE AMONG PATIENTS WITH CANCER IN FRANCE: THE NATIONAL CANCER COHORT

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Introduction

Closely linked to the concept of supportive care, the integrated model of Palliative Care (PC) implies identification, assessment and treatment of physical and psychological suffering as early as needed and irrespective of patients' characteristics. In France as in the most Southern European countries, little is known about the proportion of cancer patients accessing to PC. **Aims**: To provide the proportion of cancer patients who had access to inpatient PC and to explore influencing factors.

Methods

Nationwide retrospective cohort study using data from the French national health system database (SNDS) for all individuals diagnosed with cancer in 2013 and followed between 2013-2016. Inpatient PC access was the primary outcome

Results

Of the 313 059 cancer patients included in the French cancer cohort in 2013, 53 437 (17%) had at least a PC access between 2013 and 2016. The multivariate logistic regression revealed that women (adjusted odds ratio, aOR: 0.93; 95% confidence interval, CI: 0.90-0.95) and younger aged 18-49 (aOR: 0.77; 95% CI: 0.73-1.20) were less likely to have access to PC. By contrast, patients with more comorbidities, patients with metastatic cancer, and those with a cancer of the nervous system, were the most likely to do so.

Conclusions

Further research is recommended to better understand the reality of patients' characteristics impact on PC access and specially to assess current PC needs in cancer patients. Furthermore, education in care providers and the community at large is required to ensure the best integration of PC and oncology.

eP396

AN EXPLORATION OF PALLIATIVE CARE PROVIDERS' LIVED EXPERIENCES ON IMPLEMENTING THE GOLD STANDARDS FRAMEWORK IN ONCOLOGY FROM A HOSPITAL-BASED, OUTPATIENT PALLIATIVE CARE SETTING.

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Introduction
Palliative care aims to address the needs of patients and family members who are dealing with a life-altering illness as it is a considered an instrumental element in enabling patient-centered outcomes. The Gold Standards Framework (GSF), consisting of 7 key components (Communication, Coordination, Control of Symptoms, Continuity of Care, Continued Learning, Carer Support and Care in the Dying Phase), is a tool implemented in palliative care to ensure that such objectives are met.
Methods
Through an in-depth qualitative analysis using the methodology Interpretative Phenomenological Analysis (IPA), this study examined the lived experiences of 6 palliative care providers on implementing the GSF in oncology care from a hospital-based, outpatient palliative care setting
Results
The GSF facilitated the interpretation of the results according to each component of the framework and a total of 11 subthemes emerged: inter-professional communication, establishing patient rapport, advance care planning, pain and symptom management, reliable access, electronic maintenance of patient records, inadequate community support, standardized approach, poor educational supports, active family involvement and comfort measures.
Conclusions
This study highlights the facilitators and barriers that impact the implementation of the GSF in a hospital-based, outpatient setting. This study has implications for palliative care practice, policy, education and research to help strengthen the development of sustainable palliative care.

eP397

DRUG MIXTURES BY CONTINUOUS INFUSION IN HOME PALLIATIVE CARE SETTING: AN EFFECTIVE OFF-LABEL PRACTICE

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Introduction
Advanced cancer patients (pts) often present with multiple concomitant symptoms and off-label drugs use (indications, doses/formulations, administration route, AR) is common. Drugs mixture (DM) solutions by continuous administration are frequently used.
Methods
We performed a retrospective analysis of 716 consecutive care pathways provided by our Home Palliative Care (HPC) Service from Jul 2010 to Dec 2018. Infusions were administered subcutaneously (sc) or by a central venous (iv) access, by elastomeric pumps (EP) (5 days, 2 ml/h) with 0.9% NaCl without light protection. We analyzed: treated symptoms, drugs, doses/concentrations, solution transparency, AR, infusion duration, clinical response, adverse events (AEs), compliance/treatment acceptability, device functioning, treatment interruptions.
Results
We analyzed 361/716 care pathways treated with DM infusions, M/F-195/166, mean age 70.8 years (range 21-94); main symptom treated: pain (46.5%), dyspnea (13.8%), nausea/vomiting (10.9%), delirium/agitation (11.9%), dysphagia/mucositis (4.8%), others (11.9%); infused drugs: morphine, midazolam, dexamethasone, ranitidine, metoclopramide, scopolamine, alizapride, haloperidol, furosemide, ketorolac. Mean drugs number in DM: 3 (range 1-6). AR: sc in 87.5% of pts, iv in 12.5%. Infusion duration: mean 6.5 days, median 3 days (range 0-40). Symptoms control within 72 hours: 80.5% of pts, without differences depending on doses and solution concentration. No AEs were observed. Compliance was poor/inadequate in 4,5% of pts. 5 EP malfunctions were observed. 3 pts required sc infusion interruption due to fluid accumulation near the injection site.
Conclusions
This analysis shows efficacy and tolerability of DM administration by EP in HPC setting. Treatment compliance was high, no AEs were observed, pump malfunction/therapy discontinuation were rare.

eP398

GOALS OF CARE AND ADVANCED CARE PLANNING IN PHASE 1 TRIALS

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Introduction
Cancer patients participating in Phase 1 Clinical Trials often represent a population with advanced disease, symptoms and QOL impact from disease and treatment
This analysis was conducted using data from a randomized trial in progress testing a palliative care intervention for solid tumor patients on Phase 1 trials to evaluate goals of care and advance care planning.
Methods
In this analysis, the investigators evaluated chart audit data from patients at baseline and 6 months after initiating a Phase 1 trial.
Results
Patients (N=284) were at a mean age of 60, 56% were female and 32% were ethnic minorities. Predominant diagnoses were lung cancer (18%), colon (15%) and pancreatic (12%) cancers. Thirty six percent (36%) of these patients died within 6 months of initiating the Phase 1 trial. At 6 months post trial initiation, forty four percent (44%) had no advanced care plan and 58% remained full code status. Forty four percent of those who died were full code status. Forty five percent had no documented goals of care conversation and 32% had no proxy decision maker. Thirteen percent (13%) of those who died received chemotherapy in the last two weeks of life. Only forty four percent (44%) of those who died received hospice care and only fifty seven percent (57%) had received palliative care referrals.

Conclusions
This data supports the need for palliative care for cancer patients on Phase 1 cancer trials. There are important opportunities to integrate palliative care with cancer clinical trials for best supportive care of these patients.

eP399
HOSPICE NURSES' EXPERIENCES OF CARING FOR TERMINAL CANCER COLLEAGUES

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Introduction
As helpers' age, gender, characteristics, and job attributes is consistent with terminal cancer colleagues, whose unconsciously project inner thoughts and feelings onto the relationship. It's knotty and difficult challenge to professional helpers. The study objectives are to explore the experiences of caring for terminal cancer colleagues.
Methods
Semi-structured, open-ended interviews were conducted with thirteen hospice nurses who are women and work over two years in the unit from a medical center in central Taiwan.
Results
Complicated feelings are divided into three themes: 1) sadness and powerless emotion: it's not easy to nurses treat colleagues as the patient. They feel shock, uncomfortable, and embarrassingly at first, and subsequent emotions are sympathy and compassion. If colleagues' physical pain and suffering are not been relieved that afflict nurses to much helpless and guilty; 2) professional self-doubt: nurses feel stressful and frustration. They worry whether cancer colleagues trust themselves or not, on the other hand they uncertainly self-capability to the best care and discuss death issues ; 3) Intimate or alienated nurse-patient relationship: because of various emotions and cognitions resulting in close or aloof intentionally. Some nurses spend more time and care exceed patients' needs. Others decrease interact with patients to reduce negative mood.
Conclusions
Helpers must be strongly awareness of negative countertransference reactions. Besides self-awareness educational training, on-going support groups and case study meetings are able vented their feelings, share particular stresses and problems they face. It expected to support professional helper to maintain the mutual trust, and humanity relationship with cancer colleaguese.

eP400
EFFECT OF EARLY INTEGRATION OF SPECIALIZED PALLIATIVE CARE INTO STANDARD ONCOLOGIC TREATMENT ON THE QUALITY OF LIFE OF PATIENTS WITH ADVANCED HEAD AND NECK CANCERS

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Introduction
Patients with advanced head and neck cancers suffer lot of symptom and distress during oncologic treatment. This study evaluates effect of early palliative care intervention in advanced head and neck cancers
Methods
A randomised controlled trial was conducted in Department of Medical Oncology and Department of Palliative Medicine from June 2016. Adult patients with advanced head and neck cancers planned for palliative chemotherapy with ECOG 1 0r 2 were randomised into 2 arms in ratio of 1:1. . All patients were followed up monthly for 3 months. Descriptive statistics, comparison of baseline and follow up data, and log rank test for survival comparison were performed.
Results
A total of 180 patients were randomised with 90 patients in each arm (mean age 49.69, 83% males). There was no significant difference at baseline in quality of life (FACT HN- 74.58 vs. 76.11) and symptom control (ESAS-r- 21.28 vs. 22.86). There were no significant differences in mean change in quality of life between two arms at 04 weeks (4.9 vs. 47, P=0.96), 8 week (4.94 vs. 6.05, P=0.83) and 12 weeks (5.10 vs. 3.61 P= 0.78). Change in symptom burden were also not significantly different between arms at 04 week, 8weeks, 12 weeks. There was no difference in overall survival in two arms.
Conclusions
Early palliative care integration in head and neck cancers did not improved quality of life, symptom control and survival. As only single centre been evaluated here, a larger multicentred RCT needs to be conducted to ascertain efficacy.

eP401
A REVIEW OF THE RAPID RESPONSE RADIOTHERAPY PROGRAM IN PATIENTS WITH ADVANCED CANCER REFERRED FOR PALLIATIVE RADIOTHERAPY OVER TWO DECADES

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Introduction
The Rapid Response Radiotherapy Program (RRRP) is a radiotherapy clinic for palliative cancer patients. The objective of this study was to compare populations and survival of patients seen in the RRRP from 2014-2017 to that of 1999.
Methods
Patient characteristics (sex, primary cancer, sites of metastases, and Karnofsky Performance Status (KPS)) were recorded at clinic visits. To show overall survival from the first clinic visit, a Kaplan-Meier survival curve was generated in patients from 2014-2017.
Results
596 patients were included for analysis. The most common primary cancer was lung (n=165, 28%) and the most common site of metastases was bone (n=475, 80%). Brain metastases were reported in 75 (13%) patients. Actuarial median survival was 15.3 months for the 2014-2017 population. In 1999 (n=395), a primary of lung (n=143, 36 %) and metastases to the bone (n=277, 70%) were most prevalent. 72 patients in this population had brain metastases (18%). The actuarial median survival of the 1999 population was 4.5 months.

Table 1. Patient Demographics

	Patients in 2014-2017	Patients in 1999
Age (years)		
N	596	395
Median (Inter-quartiles)	71.8 (62.8, 80.4)	68*
Range	21.5, 95.9	31.0, 93.0
Sex		
Male	347 (58.00%)	198 (50%)
Female	249 (42.00%)	197 (50%)
KPS		
N	586	395
Median (Inter-quartiles)	60 (50, 80)	60*
Range	20, 100	10, 100
Primary cancer site		
Lung	165 (27.68%)	143 (36%)
Prostate	131 (21.98%)	56 (14%)
GI	104 (17.45%)	42 (11%)
Breast	92 (15.44%)	80 (20%)
Urinary system	50 (8.39%)	NS
Gynecological	11 (1.85%)	NS
Skin	9 (1.51%)	NS
Other	34 (5.7%)	74 (21%)
Sites of metastases		
Bone	475 (79.70%)	277 (70%)
Lung	150 (25.17%)	NS
Liver	135 (22.65%)	NS
Lymph	125 (20.97%)	NS
Brain	75 (12.58%)	72 (18%)
Other	106 (17.79%)	NS
Vital status at the time of analysis		
Alive/Lost to Follow-Up	424 (71.14%)	74
Dead	172 (28.86%)	321

*Inter-quartiles for age and KPS were not reported in the 1999 population
NS=Not Specified
KPS=Karnofsky Performance Status
GI=Gastrointestinal

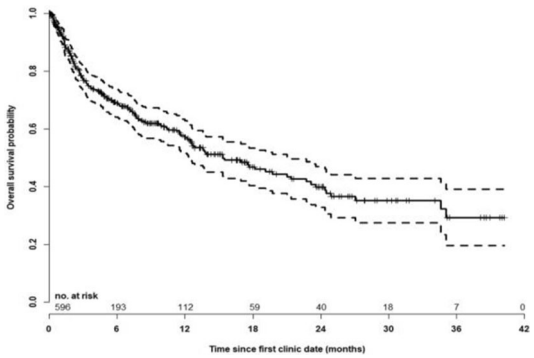
Table 2. Overall Survival from First Clinic Visit for Patients in 2014-2017

Time	Overall Survival (95% CI)
Actuarial Median Survival (95% CI) - KM estimates	15.3 months (12.5-21.4)
Actual Median Survival (95% CI)	2.1 months (1.7-2.7)
3 months	76.8% (72.6-81.1%)
6 months	68.9% (64.0-73.7%)
12 months (1 year)	57.1% (51.4-62.8%)
24 months (2 years)	39.9% (32.8-47.0%)
36 months (3 years)	29.3% (19.5-39.1%)

KM = Kaplan-Meier

CI = Confidence Interval

Figure 1. Kaplan-Meier Overall Survival Curve (Thick Line) in Patients from 2014-2017 (N=596) with the 95% Confidence Intervals (Dotted Lines)



Conclusions

The changing RRRP population is associated with visible increases in survival. This may reflect differences in the proportions of specific primaries and sites of metastases, with the 1999 population reporting a greater proportion of lung primaries (36% vs. 28%), which generally convey unfavourable outcomes. 2014-2017 reported a greater incidence of bone metastases (80% vs 70%), which convey greater longevity relative to other metastases. Improvements in systemic therapies may also have led to improvements in survival. The increasing availability of palliative radiation may affect patient demographics, although it would not change actual survival.

eP402

ARE WE BETTER A DECADE LATER IN THE ACCURACY OF SURVIVAL PREDICTION BY PALLIATIVE RADIATION ONCOLOGISTS?

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Introduction

Clinician-predicted survival (CPS) is a vital aspect of palliative care as it allows for the determination of treatment intent and setting best suited to the patient. The primary objective of the present study was to assess CPS accuracy in cancer patients referred to the Rapid Response Radiotherapy Program (RRRP) for palliative radiotherapy. Secondary objectives included an analysis of factors associated with CPS accuracy, an assessment of the accuracy of CPS over subsequent clinic visits, and a comparison to the previous study conducted in the RRRP in 2005.

Methods

From August 2014-March 2017, CPS was provided by one of four radiation oncologists. Karnofsky Performance Status (KPS), primary cancer, and site of metastases was recorded. Date of death was obtained from the Patient Care System and Excelicare. Mean difference between actual survival (AS) and CPS was used to determine the accuracy of survival predictions.

Results

172 patients were included for analysis. Survival was overestimated in most patients (n=135, 78.5%) by 19.0 weeks on average. KPS (p=0.2), primary cancer site (p=0.08), and site of metastases were not significantly related to CPS accuracy. Gender was significantly related to CPS accuracy upon multivariable analysis (p=0.04) but not after excluding prostate and breast cancer patients (p=0.2). The mean difference between AS and CPS did not significantly change over subsequent visits (p=0.5) and CPS accuracy was significantly lower compared to the previous RRRP study (p=0.04).

Table 1. Actual Survival (AS), Clinician predicted survival (CPS), and Accuracy of CPS

Survival Predictions and Accuracy	N = 172
AS (weeks)	
Mean ± SD	26.76 ± 30.49
(95% CI)	(22.17, 31.34)
Median (Inter-quartiles)	12.9 (5.9, 35.5)
Range	0.1, 152.4
AS categories	
≤12 weeks	82
13-26 weeks	31
27-52 weeks	28
>52 weeks	31
CPS (weeks)	
Mean ± SD	45.71 ± 38.77
(95% CI)	(39.87, 51.54)
Median (Inter-quartiles)	28.5 (13.0, 52.0)
Range	4.0, 208.0
CPS categories	
≤12 weeks	24
13-26 weeks	62
27-52 weeks	48
>52 weeks	38
Difference in AS – CPS (weeks)	
Mean ± SD	-18.95 ± 36.14
(95% CI)	(-24.39, -13.51)
Median (Inter-quartiles)	-14.0 (-36.4, -1.3)
Range	-150.4, 98.4
Survival estimation	
Overestimation	135 (78.49%)
Same estimation	1 (0.58%)
Underestimation	36 (20.93%)

CI=Confidence Interval
SD=Standard Deviation
AS=Actual Survival
CPS=Clinician-Predicted Survival

Table 2. General linear mixed model comparison of mean AS-CPS between visits

Comparison of Mean AS-CPS	p-value
Overall visits	0.5387
Visit 2 vs. 1	0.6638
Visit 3 vs. 2	0.1074
Visit 4 vs. 3	0.2137
Visit 5 vs. 4	0.5469
Visit 6 vs. 5	0.7787
Visit 2 vs. 1	0.6638
Visit 3 vs. 1	0.1797
Visit 4 vs. 1	0.7811
Visit 5 vs. 1	0.3807
Visit 6 vs. 1	0.6745

* Analysis was conducted on data up to visit six as less than 10 patients had visit data after the sixth visit.

Table 3. Univariate analysis of predictive factors

Predictive factor	Coefficient (SE)	p-value	AIC
Gender (F vs. M)	11.768 (5.612)	**0.0375**	1711.7
Bone Metastasis (Y vs. N)	2.315 (8.119)	0.7758	1715.2
Lymph Metastasis	-5.015 (6.783)	0.4607	1715.1
Liver Metastasis	8.001 (6.353)	0.2096	1714.2
Lung Metastasis	9.721 (6.500)	0.1366	1713.5
Brain Metastasis	8.832 (9.004)	0.3280	1714.1
Other Sites of Metastasis	6.187 (6.778)	0.3626	1714.8
KPS >40	-12.11 (6.432)	**0.0615**	1684.7
KPS >70	-1.020 (6.401)	0.8736	1688.2
KPS categories (Overall)		0.1536	1678.8
50-70 vs. 0-40	-13.304 (6.858)	0.0541	
80-100 vs. 0-40	-9.854 (7.813)	0.2090	
80-100 vs. 50-70	-	0.6101	
Primary cancer site (Overall)		**0.0835**	1644.0
Breast vs. Prostate	23.050 (9.249)	0.0137	
GI vs. Prostate	23.331 (8.646)	0.0077	
Lung vs. Prostate	16.100 (7.729)	0.0388	
Other vs. Prostate	15.848 (11.811)	0.1816	
Urinary vs. Prostate	14.983 (10.859)	0.1696	
Breast vs. GI	-	0.9773	
Breast vs. Lung	-	0.4442	
Breast vs. Other	-	0.5721	
Breast vs. Urinary	-	0.4968	
GI vs. Lung	-	0.3932	
GI vs. Other	-	0.5435	
GI vs. Urinary	-	0.4643	
Lung vs. Other	-	0.9827	
Lung vs. Urinary	-	0.9170	
Other vs. Urinary	-	0.9506	

*Bolded values with p<0.10 were included in the backward selection process

Conclusions

The survival estimates provided by radiation oncologists are inaccurate and overestimated. Further research should aim to validate prognostic models to improve accuracy.

eP403

ADDITIONAL STENTING IS EFFECTIVE AND SAFE FOR OCCLUSION OF SELF-EXPANDABLE METALLIC STENT PLACED FOR PALLIATION OF MALIGNANT LARGE BOWEL OBSTRUCTION

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Introduction
Self-expandable metallic stent (SEMS) is widely used for malignant large bowel obstruction as endoscopic intervention for bridge to surgery or palliation of the obstruction. However, occlusion of SEMS is one of common problems in palliative cases. In this study, we aimed to clarify current status of the occlusion of SEMS and evaluate the safety and efficacy of its re-intervention.
Methods
We retrospectively reviewed medical records of 31 patients with malignant large bowel obstruction who had undergone SEMS placement for palliation from May 2013 to October 2018 in Kurashiki Central Hospital.
Results
The average age was 83 years old, and 10 (32%) were female. Causes of the obstruction were colorectal cancer (n=25), gastric cancer (n=3), pancreas cancer (n=2), and ovarian cancer (n=1). Technical and clinical success rates were 96.7% and 87.0%, respectively. Adverse events during observation period of 63 days, 5-689 (median, range) were perforation (n=2, 6.4%) and occlusion of SEMS due to ingrowth or overgrowth of the tumors (n = 6, 19.3%); the median interval to occlusion was 89 days (range, 71-115). In 5 of the 6 patients with occlusion, additional SEMS placement was carried out, and clinical success was achieved in all of them without any complication; the median survival time after re-intervention was 89 days (range, 51-173).
Conclusions
Occlusion of SEMS may occur in about 20% in palliative treatment of malignant large bowel obstruction, but additional SEMS placement is effective and safe for the occlusion.

eP404

PLACE OF INTENSIVE CARE IN ADULT CANCER PATIENTS RECEIVING PALLIATIVE CARE : EXPERIENCE FROM A TERTIARY CANCER HOSPITAL IN INDIA

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Introduction
Inspite of structured palliative care services, many institutions do have a good number of advanced cancer patients admitted in the Intensive Care Ward challenging the principles of palliative care.
Aim: Exploring reasons for palliative care patients being transferred to intensive care ward and suggestions for change of practice.
Methods
100 palliative care patients of a tertiary cancer institute in India with 24 hour Palliative Care Services, who received treatment in intensive care over last 12 months were assessed retrospectively.
Results
Primary medical reasons for transfer in descending order - respiratory distress (70%), seizure (6%), sepsis(4%), uncontrolled hypertension(4%), hypotension(2%), delirium with restlessness (4%), severe intraoral bleeding (4%), hematemesis (2%), unconsiousness (2%), metabolic (2%). The major contributors were cancer lung (20%), GI (30%), breast (10%), hematology (8%). Patients transferred under pall care in last 30 days (44%) with interdiscipline transfer – medical oncology (35%), radiotherapy (24%), surgery (19%), hemato-oncology (16%) and direct MDT(6%). Median duration of stay in ICU (4 days). Late interdisciplinary referrals and lack of timely communication (51%), difference of opinion amongst clinicians (5%), patients and caregivers wishing to take anticancer treatment (19%), direct ICU admission (12%), transfer by the palliative care team (13%) were the chief causes for intensive care transfer. Primary cause of death being pulmonary symptoms (51%). Total no of patients Died 74, transfer to ward 24, leave against advice 6.
Conclusions
Respiratory symptoms still remain the primary cause of fear amongst caregivers, intensive care transfer and death of advanced cancer patients and should be better handled by interdisciplinary team action.

eP405

SURVIVAL OF TERMINAL CANCER PATIENTS BY THEIR DISEASE AND SOCIO-DEMOGRAPHIC DATA AFTER THEIR ADMISSION TO ONE HOSPICE CENTER IN KOREA

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Introduction
As cancer patients have been increasing, the necessity and demand of hospice care in terminal cancer patients have been also increasing. The prognosis of terminal cancer patients were usualy based on clinical data. But It is also necessary to investigate the correlation of survival period and survival period after admission with the characteristics of patients based on their disease and non-clinical features.
Methods
From May 2017 to April 2018, 200 terminal cancer patients were analyzed at hospice palliative center in university hospital. Based on the patient's medical record, the correlation of their age, gender, religion, kinds of primary tumors, numbers of metastasis, and treatment with the survival period (month) from the date of cancer diagnosis to the date of death, and the survival period after admission was analyzed
Results
The mean survival was 23.37 months(male) and 36.3 months(female) ($P<0.05$). In the female patients, the mean survival of gynecological and breast cancers was 71.4 months, lung cancer was 5.5 months, ($P<0.05$). The patients undergone anti-cancer therapy was 35.44 months. and patients not undergone anti-cancer therapy was 9.43 months, ($P<0.05$). The mean survival after admission was shorter in the male patients in their 30s and 40s ($P<0.05$). The mean survival after diagnosis was longer in the female patients without cancer metastasis ($P<0.05$).
Conclusions
In the female patients, the survival was longer than male patients after cancer diagnosis. The gynecological or breast cancers patients who undergone cancer therapy lived longer. The survival period after admission was shortest in the young male patients.

eP406

QUALITY OF DYING AND DEATH DURING THE LAST HOSPITALIZATION OF ADVANCED CANCER PATIENTS: A RETROSPECTIVE COHORT STUDY

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Introduction
Patients with advanced cancer are often cared for and die in hospitals in China. However, there is limited evidence about how end-of-life care is delivered during the last hospitalization before death in China.

Methods
A retrospective cohort study was done in three tertiary hospitals of Henan province, China. Data of advanced cancer patients during the last hospitalization, including patients' characteristics, symptoms and supportive measures, were collected by chart review since January 2016 to December 2017.
Results
427 cancer decedents were included in the study, of which most were from urban areas (95.1%), male (62.8%), married (90.2%), and over 65 years old (53.6%). The most frequent causes of death were lung, liver and gastric cancer (32.3%, 11.2%, 8.0%, respectively). Pain, loss of appetite and fatigue ranked the top three most common symptoms (70.4%, 43.6%, 40.8%, respectively). Morphine was the most frequent analgesic. However, only 44.7% of patients in pain were given morphine. No measures targeting fatigue were documented. Only 29% referred to psychological distress, of which depression was the most prevalent (55.6%). Psychological support was recorded in 39.8% (170/427) of patients, just referring to the terms of psychological guidance (42.9%, 73/170) or mental nursing (38.8%, 66/170) without any other detailed information. No spiritual information was found in all of the charts.
Conclusions
Quality of end-of-life care for cancer patients during the last hospitalization was not optimistic. More attention need to be paid to symptom control, such as pain and fatigue. Psychological or existential/spiritual needs need to be well documented and addressed in the future.

eP407
A STUDY ON THE ANTI-CANCER EFFECT OF TOTAL ALKALOIDS FROM NEW HERBAL COMBINATIONS (AH05) IN HEPATOCELLULAR CARCINOMA AS PALLIATIVE CARE

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Introduction
Herbal medicines are considered as part of palliative care. Although total alkaloids, which are extracted and isolated from Kusheng and gentian etc(AH05 herbal formula), have neurotoxicity, it could be used as palliative care medicine in advanced cancer in proper dose. In this study, inhibitory effect and mechanism on hepatocellular carcinoma was investigated.
Methods
The total alkaloids were identified by *High performance liquid chromatography* (HPLC). H22 and HepG2 cell lines models and H22 xenograft model were established. Cell proliferation and migration activity were measured by *MTT*, *Crystal violet* and *Wound healing assay*. For mechanism, cytoflow and western-blot were used to investigate immune environment and the expression of the mitogen-activated protein kinase (MAPK) and PI3K/AKT/mTOR pathway. For safety, tissue toxicity were tested by HE stain.
Results
In vitro, the total alkaloids, which consist of oxymatrine and matrine etc, were identified. It significantly inhibited cell proliferation and migration ability as a dose and time-dependent manner between 1.0mg/ml to 2.0mg/ml, respectively. In xenograft model, tumor volume and weight were smaller and lower compared to control group. Interestingly, in tumor microenviroment, the expression of p-ERK and p-MEK were activated, accompanied with expression of mTOR, NF-κB P50 and p-AKT were inhibited. Meanwhile, the percentage of CD4+CD8+ T cells in spleen was increased. For safety, slight intestinal mucosa edema was found without the lung, kidney and spleen injured.
Conclusions
Alkaloids from AH05 formula could inhibit liver cancer in proper dose by impacting on the PI3K/AKT/mTOR/NF-κB and MAPK pathway. It may be a potiental herbal extracted ingredients against cancer.

eP408
IMPACT OF SETTING UP AN ENHANCED SUPPORTIVE CARE SERVICE IN A CANCER UNIT IN AN ACUTE LONDON HOSPITAL TRUST

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Introduction
Enhanced supportive care (ESC) is a UK national initiative promoting earlier implementation of supportive care for patients with cancer in light of evidence that this can improve patient related outcomes. ESC was piloted in the cancer unit of an acute London hospital trust and its impact assessed.
Methods
Patients diagnosed with incurable lung (LCa) or urological cancers (UCa), proactively identified from multidisciplinary team (MDT) meetings, were reviewed by the specialist palliative care (SPC) team. Data on number of patients seen, time to review from diagnosis, integrated patient outcome scale scores (IPOS-5) and the number of unplanned admissions were collected and compared to a baseline audit completed prior to implementation of the ESC service.
Results
84% (92) of patients diagnosed in 2017/2018 with incurable LCa and UCa were reviewed by the SPC team compared to 51% in the baseline audit. Mean time to review by SPC team from MDT diagnosis decreased from 44 to 7 days (LCa) and 150 to 15 days (UCa), compared to the baseline audit. At diagnosis, patients with LCa were more physically and psychologically symptomatic than patients with UCa (mean IPOS-5 1.62 vs 0.8 respectively.) Unplanned admissions decreased by 59% (31.6/53) for LCa group and 30% (6.3/21) for UCa group.
Conclusions
Proactively identifying patients for ESC increased the percentage seen by SPC, reduced the time to first review and reduced the number of unplanned admissions, in a cancer unit. The reduction in unplanned admissions was greater than expected. Impact and need was greater in patients with LCa.

eP409
REFERRAL CHARACTERISTICS OF ADVANCED NON-SMALL-CELL LUNG CANCER TO PALLIATIVE CARE SERVICE IN A TERTIARY CANCER CENTER IN SHANGHAI CHINA

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Introduction
The American Society of Clinical Oncology (ASCO) recently recommends that patients with metastatic non-small-cell lung cancer (NSCLC) should be offered concurrent with palliative and oncological care from the time of diagnosis.. We sought to investigate the timing of palliative care referral of Chinese NSCLC patients at our center.
Methods
Retrospective medical data including demographic characteristics and referral information were collected for analysis. Overall survival (OS) was calculated as the time between the cancer diagnosis and patient's death. The time interval from PCU enrollment to a patient's death (PC-D) was

calculated. PC-D/OS (days) was calculated to illustrate the comparison of the duration of palliative care in the overall length of the disease.

Results

The mean age of 155 enrolled advanced NSCLC patients was 62.83 years. Before referral to PC, 128 patients received anti-cancer treatment including surgeon (46.5%). 63 patients (40.6%) died in PCU. The median OS of 144 patients with end cut-off was 19 months (mean=31.49, 95% CI=25.86, 37.12). The median PC-D was 41 days (mean=73.84, 95%CI=60.37, 87.40). The mean interval of PC-D/OS of 144 patients with definitely death time was 0.22. The shorter PC-D/OS indicated relatively late referral to inpatient PC services. A high proportion of patients reported loss of appetite (92.8%) and fatigue (91.4%) at the initial of referral to PC.

Conclusions

This retrospective study, in a population of patients with advanced NSCLC, gave detailed information about PC services in a Tertiary cancer center.

eP410
OPINIONS OF PALLIATIVE CARE PATIENTS AND NURSES REGARDING DIGNIFIED CARE

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Introduction

Dignity is an important issue for delivering high quality palliative care. This descriptive, methodological study was conducted to evaluate Turkish validity and reliability of The Patient Dignity Inventory (PDI) among palliative care patients and to explore the views of palliative care patients and nurses about dignified care.

Methods

Patient demographic form, Palliative Performance Scale and, Hospital Anxiety and Depression Scale (HADS) were used for data collection.
Ten palliative care patients and 10 nurses were interviewed. The semi-structured, face to face interviews were recorded digitally, transcribed verbatim and analyzed. Turkish validity and reliability study of the PDI was conducted with 127 palliative care patients with advanced cancer. Face validity, factor structure, concurrent validity, internal consistency and test-retest reliability analysis were performed.

Results

Cronbach's coefficient alpha for the PDI was 0.94 and test-retest reliability was r= 0.75. Concurrent validity tests demonstrated positive significant correlations between factors of PDI and HADS. Factor analysis demonstrated 5 factors accounting for 68.7% of the overall variance. The factors were labeled as symptom distress, existential distress, self-confidence, dependency and, support and care requirements. Three themes emerged through data obtained from palliative care patients: respectability, caring practices, and usefulness. Three themes emerged through data obtained from palliative care nurses: maintaining one's respectability; barriers and recommendations; benefits of care.

Conclusions

Turkish version of the PDI is a valid and reliable instrument among palliative care patients. Education may be useful for raising awareness of healthcare professionals about dignified care.

eP411
TIMING OF DO-NOT-RESUSCITATE ORDER AND AGGRESSIVENESS OF CARE NEAR THE END OF LIFE IN CANCER PATIENTS: A RETROSPECTIVE COHORT STUDY

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Introduction

Patients with advanced cancer are often cared for and die in hospitals in China. Do-not-resuscitate (DNR) order is crucial in end-of-life care for them. This study examined the association between the timing of DNR orders and the aggressiveness of end-of-life care.

Methods

A retrospective chart review was done in three tertiary hospitals in China. Data about cancer patients' characteristics, do-not-resuscitate (DNR) order, aggressive and comfort measures were collected during the last hospitalization since January 2016 to December 2017.

Results

252 patients were included in the analysis. The median and mean time intervals between signing the DNR order and patient's death was 1 day (range: 1-107 days), and 5.9 ± 12.4 days. 54.4% were signed within three days before death. Compared with patients who signed a DNR order within 3 days, those who signed beyond 3 days were less likely to transfer to intensive care unit (OR, 0.295; 95%CI, 0.137-0.638), undergo tracheal intubation (OR, 0.293; 95%CI, 0.116-0.740), ventilator use (OR, 0.186; 95%CI, 0.066-0.521) and cardiopulmonary resuscitation (OR, 0.090; 95%CI, 0.047-0.173), however, more likely to be given morphine (OR, 3.103; 95%CI, 1.773-5.431), and psychological support (OR, 2.540; 95%CI, 1.469-4.391).

Conclusions

We found that DNR orders were always signed late during the last hospitalization. Cancer patients who signed DNR orders beyond 3 days before death were less likely to undergo aggressive procedures but more likely to be given comfort measures, compared with those within 3 days. Further studies are necessary to better understand the optimum timing and promote early DNR orders in advanced cancer patients.

eP412
PALLIATIVE CARE AT HOME FOR CANCER PATIENTS WITH LOW RESOURCES BY A PALLIATIVE CARE CENTER, DHAKA, BANGLADESH

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Introduction

According to Bangladesh Cancer Society the economic burden of a new adult cancer patients was 250000/yr., and approximately 75% of the cancer patients who were admitted to receive treatment were incurable and they received treatment in palliative setting. 30-40% of these patients were in end days of life with substantial amount of sufferings and their admissions were refused by the hospital. Through palliative home care, we could reduce the frequency readmission in hospital.

Methods

This is a retrospective study based on cancer patient's record. The records of total 40 patients were reviewed who needed palliative care at home January 2018 to July 2018.

Results

Among the patients' 53% were females and 46% males. Prior receiving the home care majority of them received conservative treatment 50%, 32% patients received chemotherapy and 3% patients had surgery. However 14% did not receive any treatment. From beginning of the home care 39% patients were suffering from pain and breathlessness and others were hypotension (17%) and cough (3%). Those who died during the study period, 46% of them died at home and 21% in the hospital. 32% of our study patients were alive. The pain managed at home effectively (80%) and was reducing the hospital readmission (80%) and reduce the economic burden (60%).

Conclusions

The evolution and growth of palliative care service and hospice should be from the combined effort of both the public and the private sectors. There are a number of challenges, that still make access to palliative home care almost impossible despite the need.

eP413

A NURSING PROJECT ON THE IMPROVEMENT OF FUNERAL PREPARATION IN PALLIATIVE CARE

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Introduction
Well preplanning funeral arrangements is particularly significant in Chinese culture. It will be enhanced the bereaved family members' perceptions of a good death for the patient. The purpose is to improve the completeness of funeral preparations for palliative care nurses in a medical center in Central Taiwan.
Methods
Investigation through literature review, clinical observation and discussion indicated that the major causes.
Results
The major causes included (1) insufficient knowledge in funeral custom and heedless of dying signs, (2) lack of standard procedure of funeral preparation, and (3) a shortage of funeral instruction tools. Strategies included (1) conducting training courses to enhance nursing staff's education about signs of dying and funeral custom, (2) setting up standardized funeral arrangement instruction procedure, and (3) producing a booklet contains the dying process and funeral preparation. Results showed that the completion of funeral preparation record increased from 36.8% to 96.7% and the family satisfaction increased from 79.6% to 93.4%.
Conclusions
Palliative nurses need to aware patients with dying signs and symptoms of approaching death, as well as to remind family members to carry on with funeral preparations at appropriate time. It expected that can enhance the quality of a good death care and support families during the death of a loved one will be reached.

eP414

EXISTENTIAL VALUES AMONG CANCER PATIENTS WITH COGNITIVE DYSFUNCTION IN PALLIATIVE CARE

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Introduction
Cognitive dysfunction among patients with advanced cancer impacts experience of meaning, values and satisfaction in life. Knowledge regarding the influence of cognitive changes on patients' existential values may help to optimize palliative care (PC) and improve quality of life.
Methods
Interview-based investigation of 13 adult patients with cancer in PC assessed in a previous validation study of five neurological tests (Feb 2013 - Jul 2015). A structured interview guide conducted the assessments, exploring the relationship between cognitive changes, existential concerns and deeply held values. Analysis of cognitive dysfunction was performed considering the percentage of agreement between interview content (subjective experience) and neuropsychological tests (objective knowledge). Subjective experiences were analyzed through Interpretative Phenomenological Analysis (IPA) to identify interferences on existential values.
Results
Above 50% of the patients had low performance or reported issues regarding cognitive function. A high agreement was noted between the interview content and 3 neuropsychological tests (92% -100%), while a moderate agreement was observed with 2 tests (54% - 77%). Cognitive dysfunction prevented the patients to practice existential values related to meaning and purpose in life, influencing negatively on their quality of life. Reported difficulties to adapt, accept or being aware of cognitive changes may have influenced the practice of their existential values.
Conclusions
Cognitive dysfunction was detected by neuropsychological testing and a high/moderate agreement with patients' report was observed. Cognitive changes seemed to interfere with the practice of existential values and quality of life, which should be considered to optimize palliative care planning.

eP415

A CROSS-SECTIONAL STUDY ON THE ATTITUDES AND PERCEPTIONS OF OUTPATIENTS TOWARDS PALLIATIVE CARE AT THE HONG KONG QUEEN MARY HOSPITAL HOSPICE CENTRE

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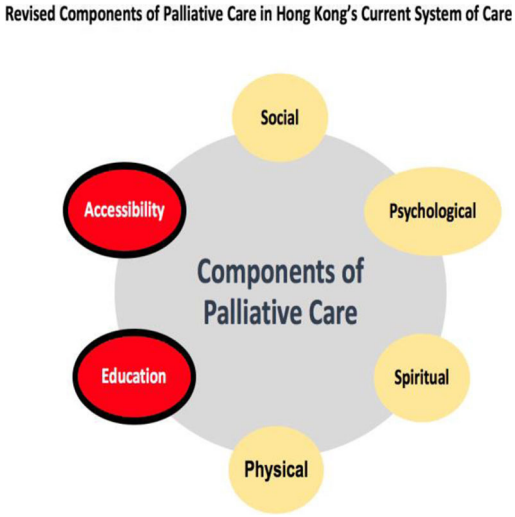
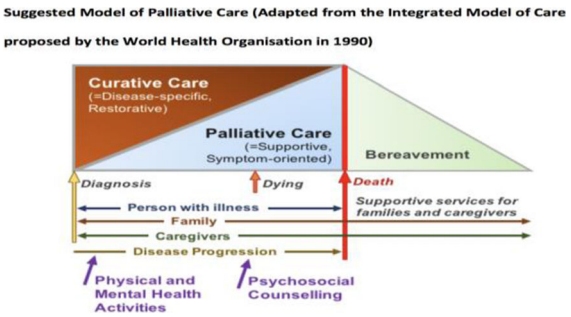
Introduction
Palliative care targets four aspects of health: physical, psychological, social, and spiritual. Current literature on palliative care is limited to the perspectives of health professionals. This study aims to investigate the views of outpatients receiving palliative care at the Hong Kong Queen Mary Hospital Hospice Centre (HKQMHHC).
Methods
This cross-sectional study was performed with the completion of an original questionnaire from December 2017 to February 2018 at the HKQMHHC. The questionnaire was designed to examine patients' perspectives; the Edmonton Symptom Assessment Scale was included. Descriptive and univariate analyses were performed.
Results
100 patients were included. All mean scores for aspects of care at HKQMHHC were above 8 (from 0-10 with 0 being extremely inadequate and 10 being extremely adequate). Each respondent identified an average of 1.82 of the 4 aspects of palliative care. 87% of respondents perceived the physical aspect of care to be of highest priority. A negative correlation ($p<0.05$) was found between the extent of symptoms experienced by the patient and their satisfaction towards services offered.
Conclusions
Current palliative services sufficiently meet patients' needs. However, their limited knowledge may restrict their understandings of palliative care to be targeting just physical health. The results imply that accessibility and education are crucial components to improve Hong Kong's current care system. It is suggested that World Health Organisation palliative care model reinforce a spectrum of services, including psychosocial counselling, to help patients throughout their journeys. The relationship between the extent of symptoms experienced and patients' satisfaction towards services is a new direction for study.





eP416
INITIATING THE DEVELOPMENT OF PALLIATIVE CARE SERVICE IN AN UNRECOGNIZED STATE

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Introduction
Palliative care in Moldova was started in 2000 by some non-governmental organizations. It was officially recognized at the state level in 2008 and included into the National Healthcare System. Transnistria is an unrecognized state which split off from Moldova in 1992 after the dissolution of the USSR. In this region palliative care is a totally new concept for both local medical society and general public.
Methods
Review of the reports on educational activities of the Foundation Hospice Angelus Moldova.
Results
In spring 2018, 15 medical doctors and one clinical psychologist from Transnistria took part in a 2-week intensive educational course on palliative care. The National Clinical Protocols and a Clinical Guideline were translated from Romanian into Russian. There was drafted further needs' assessment on palliative care in the region and further development of the home-based, inpatient palliative care services and stoma clinic.
Conclusions
After the successful 17-year experience of the palliative care development in Moldova there was made a significant step in the initiation of palliative care in the region, which before was an equal component part of the whole state, and incurable patients of the area finally could start getting access to the locally provided qualitative palliative care services.

eP417
CLINICIANS' PERSPECTIVES ON THE USE OF THE PROGNOSIS IN PALLIATIVE CARE SCALES (PIPS) PREDICTOR MODELS: A QUALITATIVE STUDY

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Introduction
Clinicians' predictions of survival in palliative cancer patients are usually based solely on clinical intuition, which is often inaccurate. The PiPS models use objective clinical data to predict whether patients with advanced cancer will die within "days", "weeks" or "months+". We are currently validating PiPS in a large sample of palliative patients (n=1884) with advanced cancer. This paper presents data from a nested qualitative study that explored clinicians' views on the acceptability and utility of predictor models in practice, and barriers and facilitators to their use.
Methods
We recruited a purposive sample of clinicians (n=32), which included palliative care specialists, oncologists, GPs and nurses. Clinicians' were asked about their experiences of discussing prognosis with palliative patients and carers, views and opinions of prognostic models and facilitators and barriers to the use of PiPS models within clinical practice.
Results
Overall participants considered the PiPS models to be acceptable and beneficial in three main ways: a) more accurate in predicting life expectancy, compared with clinicians' intuition b) a useful aid to help share prognostic information with patients and carers c) beneficial as an educational tool to improve clinicians' confidence in making accurate prognostic predictions. Barriers identified were: time and resource constraints, preferring to rely on own clinical judgement, clinicians' avoidance of life expectancy discussions.
Conclusions
Our study demonstrates the acceptability of PiPS models for use by clinicians. We identified a number of important facilitators and barriers to use, that need to be addressed if PiPS models are to be implemented into clinical practice.

eP418
MAXIMIZING SAFETY AND EFFICACY OF METHADONE DOSING IN CANCER PATIENTS

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Introduction
Methadone is an opioid with a unique mechanism of action, that offers several advantages in treating pain associated with cancer. Dosing and conversion calculations involving methadone can be tricky, and require close attention to detail. Results of a consensus-building process used to develop recommendations to maximize safety and efficacy of methadone dosing will be presented.

Methods
A panel of 13 providers (12 from USA, one from Canada) skilled in methadone dosing convened to develop guidelines. The American Pain Society guidelines for safe and effective methadone dosing were used as a starting point, and consensus was gained in the areas of selection of appropriate candidates for methadone therapy, opioid-naïve and opioid-tolerant dosing, and monitoring.
Results
Criteria to identify both appropriate and inappropriate candidates for methadone therapy were identified. Criteria for risk stratification were also developed prior to initiating methadone. Initial dosing of methadone for opioid-naïve patients (and patients receiving up to 60 mg oral morphine equivalents [OME] per day) is recommended to be between 2 and 7.5 mg oral methadone per day. Conversion to methadone from other opioids (> 60 mg OME per day) is 10:1 (oral morphine:oral methadone) up to 200 mg OME per day; 20:1 above 200 mg OME per day. Patients over 65 years of age default to 20:1 dosing. Monitoring parameters and dosing titration guidance was determined as well.
Conclusions
Methadone is a very effective opioid that can be used as monotherapy or adjunctively with other opioids. This consensus expert document provides guidance to providers caring for cancer patients.

eP419
ASSOCIATION BETWEEN MEANING IN LIFE AND QUALITY OF LIFE IN ONCOLOGIC PALLIATIVE PATIENTS AND THEIR EXPERIENCES WITH ILLNESS: A STUDY OF MIXED METHODS

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Introduction
Multidimensional palliative care offered to advanced cancer patients focus to improve and enhance quality of life. We analyzed the association between meaning of life, quality of life, anxiety and depression in palliative cancer patients and contextualized these data with their experiences of illness described from their own perspective.
Methods
It was a study of mixed methods with quantitative scales (Purpose in Life Test; EORTC QLQ; HADS; KPS) and qualitative data obtained from an open interview and analyzed in an exploratory way according to phenomenological aspect.
Results
51% from 146 screened patients had no knowledge about their palliative care status and were excluded. Analyzing other 54 patients we obtained a positive association between meaning of life and functional subscale of QLQ C30 ($p = 0.025$). Presence of a meaning of life reduced the risk of anxiety ($p = 0.012$, OR = 0.94) and depression ($p = 0.001$, OR = 0.88). Anxiety was associated with both worst index in functional subscale of QLQ C30 ($p = 0.029$) and overall quality of life ($p = 0.002$). We identified as part of the phenomenon of sickness due to terminal cancer: possibility of death; sensitization to life; faith; motivation to concretize plans; rotine life values; and connection with affective bonds as structures capable of sustaining hope and motivating existence.
Conclusions
We identify the existential dimension and the meaning of life as an essential part of comprehensive palliative cancer care, able to thrive in coping and to improve quality of life.

eP420
EFFICACY OF STEROID THERAPY FOR END-OF-LIFE TREATMENT IN PATIENTS WITH ADVANCED LUNG CANCER TRANSFERRED TO PALLIATIVE CARE UNIT

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Introduction
The various uses of corticosteroids (CS) in palliative care have many benefits. Many advanced lung cancer (ALC) patients are administered systemic CS since their diagnosis till the end-of-life. However, CS must be used considering the risks of higher side effects. In this retrospective study, clinical investigations among ALC patients, who underwent CS therapy after transfer from other hospitals to our palliative care unit (PCU), were conducted, and the therapeutic effects and side effects were evaluated.
Methods
In all, 75 ALC patients who were directly transferred from other hospitals for end-of-life care died in our PCU between January 2014 and December 2018. Their clinical background, dosage onset period, reason for use, type of medicine, and dosage were examined. Additionally, these cases were assessed to determine the effectiveness and side effects of CS administration.
Results
The median age of the patients was 75 (range, 54-93) years, and 22 patients (29.3%) were female. CS were administered for improvement of symptoms, to 18 patients before hospitalization, 12 patients immediately after hospitalization, and 12 patients sometime after hospitalization; however, 33 patients did not opt for the therapy. They were administered mainly for conditions such as dyspnea, general fatigue, anorexia, and/or pain. Irrespective of the type of CS administered to them, temporary improvements in the symptoms of 13 (31.0%) patients was observed before their deaths. However, it was observed that an early dosing tended to be more effective after hospitalization.
Conclusions
Although our sample was small, it was found that ALC patients can be successfully treated using steroid therapy.

eP421
MACHINE LEARNING APPROACHES TO PROGNOSTICATION IN SUPPORTIVE CARE IN CANCER

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Introduction
Survival prediction is an important aspect of supportive care, and especially palliative care. However, robust survival prediction remains elusive. Machine learning approaches offer the potential to identify novel prognostic indicators, and so to develop more robust prognostic algorithms. The objective of this feasibility study was to develop a prognostic algorithm using machine learning for testing in a definitive study.
Methods
50 patients with advanced cancer and an estimated prognosis of < 1yr were recruited. 149 variables were collected, including demographics, cancer diagnosis, ECOG performance status, cancer / other treatments, Memorial Symptom Assessment Scale Short Form (MSAS-SF) data, Pittsburgh Sleep Quality Index (PSQI) data, sleep diary information, wrist actigraphy parameters, and overall survival. A total of three regularised regression methods were applied / compared: 1) elastic net; 2) lasso; and 3) ridge. A leave-one-out cross-validation approach was used in the performance analysis. The accuracy of each algorithm was assessed by the R^2 statistic.

Results

The lasso-derived algorithm demonstrated the highest accuracy in predicting overall survival (R2 - 0.72). Fifteen variables were identified as most relevant for predicting survival, including nine negative predictors and six positive predictors. These included variables associated with venous blood samples (e.g. serum creatinine; neutrophil count; C-reactive protein), use of opioid analgesia, and various sleep parameters (e.g. wrist actigraphy – get up time; PSQI – sleep disturbance).

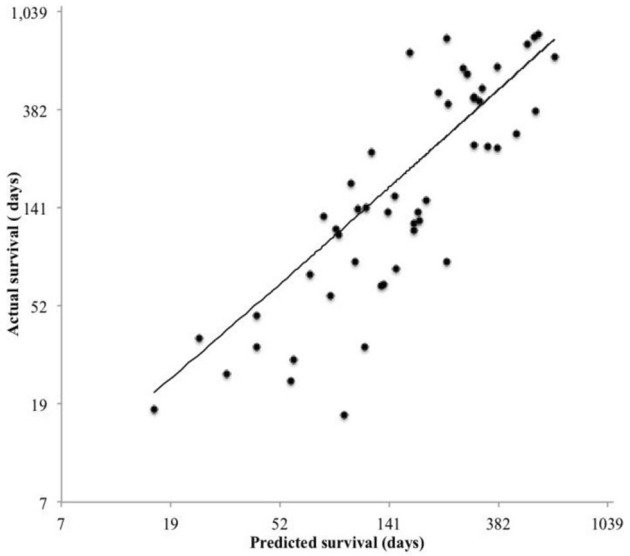

Figure 1: Scatterplot showing the correlation between actual survival and predicted survival days in natural log scale, derived from the cross-validated lasso-derived algorithm

Conclusions

Machine learning methods confirmed certain established, and identified some novel, predictors for survival in this group of patients. A definitive study is now planned to test the accuracy of this new prognostic algorithm.

eP422

TUMOR-SPECIFIC INTEGRATIVE PALLIATIVE CARE MODEL. EXPERIENCE WITH GYNECOLOGICAL CANCER PATIENTS.

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Introduction

Gynecological cancers (GC) represent an important burden for the health care systems around the world. In Mexico, most patients are diagnosed with advanced, incurable disease, however, the social protection insurance plan gives access to the newest disease modifying treatments (DMT). The integration of palliative care (PC) for has been a priority for the authorities, but referrals from the oncology team are late. To improve earlier referrals, for the last 2 years we have implemented a tumor specific integrative palliative care clinic that works in conjunction with the oncology team. The purpose of this report is to describe the results of the palliative care gynecological cancer clinic (PCGC).

Methods

Sociodemographic and clinical information from GC patients referred to PC before (July 2014-June 2016, A) and after the PCGC implementation (July 2016-June 2018, B) was obtained from the electronic chart. Variables were reported as relative frequencies, median, and interquartile range (IQR). Differences were evaluated using Wilcoxon and survival with Kaplan-Meier.

Results

During the period of July 2014 to June 2018, 719 patients were seen (310, A; 409 B). Median age 55 years, most patients were poor, uneducated. Initial referral was done during hospitalization (28.1%), patients had received at least 2 DMT. Pain was the most frequent symptom in both groups. An increased percentage of B patients died at home (44.0%). The number of patients referred has increased (25%). Median survival increased from 102 A, to 177 B.

Table1. Survival and referrals time in gynecological cancer patients

	Interquartile range		
Time (days)	25%	50%	75%
Survival			
A	28	102	377
B	31	177	313
Referrals			
A	87	407.5	937
B	89	368	931.5

Conclusions

The interaction PCGC with the oncologist was traduced in earlier referrals and symptom management.

eP423

PERCEPTIONS OF RELIGIOUS LEADERS ABOUT END-OF-LIFE SPIRITUAL CARE IN SUPPORT OF TERMINALLY-ILL CANCER PATIENTS

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Introduction

Religious leaders are well respected in most Nigerian communities and are often called in to provide support for terminally-ill patients. Many Nigeria communities still view cancer as a stigmatized disease. This study sought to elicit the perceptions of Christian and Islamic religious leaders and explore problems associated their involvement in end-of-life care for cancer patients.

Methods

Participants were recruited among religious leaders. Four focus group discussion sessions were then be conducted with open-ended questions on previous involvement in end-of-life care of cancer patients and whether they would like to do more. The discussions were audio-taped, transcribed and coded using the NUDIST software.

Results

Twenty-one respondents participated in the FGDs. The age ranged from 31 to 61 years. Seventeen (73%) of them had never heard of the term 'palliative care' in cancer care. Two out of the 4 (50%) who had heard about cancer care would be willing to convince others to use them when they are available. The fear of being labeled “soft” would be the greatest hindrance to accepting the patients. Comments include “you need to be careful about what people will say when the patients come’.

Conclusions

We observe that peer pressure would play an important role in the acceptability of end-of-life activities in this group. This could be used in the positive light in designing interventions.

eP424
EFFICACY AND COST-UTILITY OF THE EHEALTH SELF-MANAGEMENT APPLICATION 'ONCOKOMPAS' TAILORED TO PATIENTS WITH INCURABLE CANCER: STUDY PROTOCOL OF A RANDOMIZED CONTROLLED TRIAL

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Introduction
Patients with incurable cancer have to deal with a wide range of symptoms due to their disease and treatment, influencing their quality of life. Nowadays, patients are expected to adopt an active role in managing their own health and health care. Oncokompas is an eHealth self-management application developed to support patients in finding optimal supportive care, tailored to their quality of life and personal preferences. A randomized controlled trial will be carried out to determine the efficacy and cost-utility of Oncokompas compared to care as usual.
Methods
136 adult patients with incurable lung, breast, colorectal and head and neck cancer, lymphoma and glioma, will be included. Eligible patients have a prognosis of at least three months and no curative treatment options. Patients will be randomly assigned to the intervention group, which directly has access to Oncokompas, or the waiting-list control group receiving care as usual, having access to Oncokompas after three months. The primary outcome measure will be patient activation. Secondary outcome measures comprise self-efficacy, health-related quality of life and costs. Measures will be assessed at baseline, two weeks after randomization, and at three months follow-up.
Results
This study will result in knowledge on the efficacy and cost-utility of Oncokompas among patients with incurable cancer. This study protocol is registered in the Netherlands Trial Register (identifier: NTR7494).
Conclusions
The recruitment of patients in this trial started in January 2019 and is expected to be complete in January 2020.

eP425
PATIENTS' AND FAMILY MEMBERS' DECISION-MAKING AND INFORMATION-DISCLOSURE PREFERENCES:A SINGLE-CENTER SURVEY IN CHINA

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Introduction
Understanding patients' and family members' medical decision-making and information-disclosure preferences is important for quality of care. Factors that influence Chinese advanced cancer patients'/family members' decision-making and information-disclosure preferences have not been studied before. We aim to describe the preferences and intend to identify whether the preferences are related to various factors.
Methods
Two hundreds patients with advanced cancerand their family members were surveyed using questionnaires. The factors examined included the Decision-Making Preferences Questionnaire, the Information-Disclosure Preferences Questionnaire, the Satisfaction with Decisions and Care Questionnaire.
Results
The patients' median age was 56.5 year old, 28.5% female. Patients' preferences for decision-making were 30.5%for passive, 67.5%for shared, 2% for active. In univariate analysis, the religious belief (p=0.016) and the medical payment by patient (p=0.001) correlated with patients' decision-making. In multivariate logistic regression, increased percentage of payment by the patient was associated with a lower preference for passive decision-making (OR=0.97, 95% CI 0.96-0.99). Patient's with any religion belief is associated positively with a preference for passive decision-making (OR=3.452, 95% CI 1.304-9.138). In addition, all patients and family members wanted to receive information regarding the diagnosis and the chances of being cured, but 50% family members desired to hide the true information from the patients.
Conclusions
Majority of Chinese advanced cancer patients and family members prefer to make shared decisions. Their desires for active decision-making are associated with financial burden. The conflict on information disclosure between patients and their family members continue to present as an important ethical dilemma for Chinese physicians.

eP426
BEREAVED CAREGIVERS TO PATIENTS WITH HIGH-GRADE GLIOMA

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Introduction
Caregivers to patients with life-threatening brain cancer experience a process of crisis and grief because they live in a constant state of anxiety and fear of losing the patient. They experience a demanding shift in roles are at risk of developing symptoms such as depression. They tend to neglect their own physical and emotional needs during the disease- and treatment trajectory. This presentation relies on a study that explores the perspectives of newly bereaved caregivers to patients with high-grade glioma and a systematic literature review on informal caregivers' experience and how they manage their life situation as bereaved.
Methods
Individual semi-structured telephone interviews with bereaved caregivers to patients with high-grade glioma who deceased during participation in

the mixed-methods Neuro-oncological Rehabilitation study. Moreover, a systematic search was carried out in 2017 to explore how informal caregivers of patients with primary malignant brain tumour experience and manage their life situation after the death of the patient.

Results

Bereaved informal caregivers experience psychosocial consequences and emotional reactions after bereavement, resulting in feelings of isolation and loneliness. They experienced depressive symptoms and fatigue, resulting in a reduced work capability and social network. Some caregivers use coping strategies such as disavowal, both prior to and post-bereavement

Conclusions

There exists limited evidence on how the bereaved caregivers prefer to be supported, and further research is warranted. We suggest incorporating systematic information on bereavement in clinical practice and increased cooperation across sectors.

eP427

PALLIATIVE CARE CHALLENGES-ACCESS TO ANTICIPATORY MEDICATIONS IN RURAL AND REMOTE SETTINGS

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Introduction

Anticipatory medications (AM) have been widely used in various settings across many countries in people approaching end of life. Access to palliative care in rural and remote areas of Australia is lacking as are other medical services when compared with the metropolitan setting. Our aim is to identify challenges with the administration and access to AM in rural and remote communities with outcomes to guide improved delivery of care.

Methods

An online survey administered using Qualtrics, a secure survey platform was distributed to a total of 18 managers from 18 rural and remote organisations across the South East of Victoria in Australia.

Results

A total of 29 nurses completed the survey (response rate 28%). Almost a third of all nurses surveyed did not have specific guidance regarding the use of AM for their patients. Opioids (55%) were by far the most commonly used AM followed by anti-emetics (45%). The most common decisions taken by nurses to administer AM were cited as patient deterioration or in their terminal phase with a fluctuating level of anxiety and patients' agitation. Access to AM and lack of staff education were major challenges in rural and remote areas.

Conclusions

Provision of timely AM has the potential to improve the quality of life of patients and their caregivers. Key barriers to access AM can be overcome with community-level planning and nurses' education. Advanced nurses' roles have the opportunity to provide specialised care where access to specialist physicians is challenging.

eP428

UNDERSTANDING PATIENT AND CAREGIVER EXPERIENCES OF ADVANCED CANCER CARE IN ALBERTA: A QUALITATIVE STUDY

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Introduction

Palliative care is an approach that improves the quality of life of patients and families facing challenges associated with life-threatening illness. In Alberta, most people who received palliative care received it late (within last 3 months of life), which has negative implications for patient and caregiver experiences, greater emotional distress, and decreased quality of life. This study aims to understand patient and caregiver experiences of advanced colorectal cancer care to inform development of an early palliative care pathway.

Methods

Qualitative study that is embedded within a larger program of research on implementation of Palliative Care Early and Systematic (PaCES). Semi-structured telephone interviews with patients living with advanced colorectal cancer and caregivers were conducted to explore their experiences with cancer care services received pre-intervention. Interview transcripts were thematically analyzed supported by the qualitative analysis software, NVivo.

Results

15 patients and 7 caregivers from Edmonton and Calgary were interviewed over the phone. A total of 6 main themes generated: 1. Meaning of Palliative Care; 2. Communication (subthemes: communication of diagnosis, communication between patient and oncologist, communication amongst providers); 3. Relationship with healthcare providers (including oncologist, family doctor, and nurses); 4. Access to care; 5. Patient readiness for advance care planning; 6. Patient and family engagement in care.

Conclusions

Most participants misperceived palliative care to mean 'end of life care', suggesting a need for improvement in the delivery of palliative care information to patients and caregivers. Understanding the care experiences of patients and caregivers will inform the development of a care pathway for early palliative care.

eP429

A PROPRIETARY AMINO-ACID-MIXTURE AS DIARRHEA PREVENTION IN PATIENTS UNDERGOING AUTOLOGOUS STEM-CELL-TRANSPLANTATION (ASCT) FOR MULTIPLE-MYELOMA (MM) AND NON-HODGKIN-LYMPHOMA (NHL).

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Introduction

A proprietary blend of amino acids and electrolytes (enterade®) reduces post-irradiation gastrointestinal toxicity (GIT) in mice. It showed to reduce diarrhea in neuroendocrine tumor patients and may have a role in prevention/treatment of chemotherapy induced diarrhea, a very common toxicity in ASCT conditioning regimens containing high-dose melphalan.

Methods

This multi-center, double-blinded, randomized, Phase 2 trial enrolled 114 patients receiving Melphalan conditioning for ASCT between October 2016 and October 2017. Patients received two 8oz bottles of either enterade® or placebo daily from admission through Day +14. GIT was scored using CT-CAE v4.0. Compliance was arbitrarily set at consumption of 2 bottles/day for 11+ days.

Results

99 subjects (61 Multiple Myeloma, 38 Non Hodgkin Lymphoma) attempted consumption. No MM compared to 34.2% NHL patients (31.6% enterade® & 36.8% placebo) met compliance target. In this NHL cohort, the incidence of ≥ grade 2 diarrhea was 16% for enterade® versus 86% for placebo (p= 0.02). In NHL patients consuming >7 days of study product, compliance increased to 45% for enterade® and 55% for placebo. Diarrhea ≥ grade 2 incidence was 33% in enterade® versus 73% in placebo (p=0.08).

Conclusions
Eleven days of two 8oz bottles of liquid is difficult during ASCT, especially for MM patients with nausea, altered taste/poor appetite. For those NHL patients, compliant per protocol (>11 days), enterade® significantly reduced diarrhea. At >7 days of enterade® treatment there was also a signal for effect. The use of enterade® to prevent high dose chemotherapy associated-diarrhea should be explored further in populations capable of reasonable oral intake.

eP430
"ARE THEY SAYING IT HOW I'M SAYING IT?" PRELIMINARY FINDINGS OF A QUALITATIVE STUDY OF LANGUAGE, INTERPRETATION, AND DISPARITIES IN HOSPICE AND PALLIATIVE CARE

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Introduction
Studies show that language barriers and use of interpreters impact disparities in end-of-life care. However, the precise ways in which language barriers and interpretation affect hospice and palliative care services for diverse patient populations remain under-examined.
Methods
This qualitative, individual interview study was conducted with stakeholders in end-of-life care as part of a broader study examining multiple barriers to hospice enrollment in diverse patient populations. This study specifically focuses on how language barriers contribute to such disparities. One researcher conducted all interviews, which were audio-recorded, transcribed verbatim, and coded using NVivo11 software. Three researchers analyzed coded sections related to language barriers and interpreters, using the immersion/crystallization method, individually and during group analysis meetings until consensus regarding initial themes was achieved. Currently all three researchers are analyzing interviews in their entirety to ensure that no themes were lost in the coding procedure. IRB approval was obtained.
Results
22 participants included physicians, nurses, social workers, chaplains, nursing assistants, administrators, and patient caregivers, who self-identified from a variety of ethnic backgrounds. Initial themes regarding how language barriers impact hospice and palliative care: (1) precision of translation (medical terminology, word choice, and inclusion of cultural context), (2) manner of interpretation (intonation, body language, and rapport), (3) interpreter training level, and (4) structural barriers to accessing interpreters. While these themes are relevant across healthcare settings, the delicacy of end-of-life conversations heightens their impact.
Conclusions
Preliminary results suggest that interpretation quality impacts disparities in end-of-life care in multiple, interrelated, nuanced ways. Innovative solutions are required.

eP431
PREDICTORS OF 24-HOUR MORTALITY AFTER TRANSFER TO THE ACUTE PALLIATIVE CARE UNIT (APCU)

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Introduction
All patients are assessed by the palliative care consultation team before admission to the acute palliative care unit (APCU). Even so, patients may die within 24 hours of admission, causing distress to clinicians and to the patient's family. Risk factors associated with this sudden death are unknown.
Methods
A retrospective study of medical records of patients transferred to the APCU from October 1, 2013 to October 1, 2017 was performed to identify those who died within 24 hours after transfer. Characteristics of these patients were compared to a control group composed of a random sample of patients that were alive 24 hours after transfer to the APCU.
Results
A total of 79 patients died within 24 hours after transfer to the APCU. Compared to the control group, the patients that died within 24 hours were more likely to have a higher Memorial Delirium Assessment Scale (MDAS) score (P = 0.0001), a hematologic malignancy (P = 0.0002), to be transferred during weekdays (P = 0.0002), to be unresponsive (P = 0.0023), to be on oxygen therapy (P = 0.0395), and to have a higher Eastern Cooperative Oncology Group performance status (P = 0.0275). There was no significant difference in the Edmonton Symptom Assessment System scores between groups.

Table 1. Univariate and Multivariate Analysis of Predictors of Death in 24 hours After Acute Palliative Care Unit Transfer.

Variable	Effect	Univariate[1]		Multivariate[2]	
		OR (95% CI)	P-value	OR (95% CI)	P-value
MDAS	N/A	1.11 (1.07-1.17)	**< 0.0001**	1.11 (1.06-1.17)	**< 0.0001**
Cancer Diagnosis	Hematologic Malignancy vs Solid Tumor	8.44 (2.73-37.04)	**0.0009**	4.03 (0.99-16.44)	**0.05**
Day of Transfer	Weekday vs Weekend	4.21 (1.98-9.52)	**0.003**	5.72 (1.91-17.18)	**0.002**
Responsiveness	Response vs Unresponsive	0.26 (0.10-0.61)	**0.004**	N/A	N/A
Oxygen Therapy	High flow/Bipap vs None	2.77(1.22-6.54)	**0.02**	N/A	N/A
ECOG	3 vs 4	0.37(0.15-0.85)	**0.02**	N/A	N/A

Abbreviations: OR, odds ratio; CI, confidence interval; EOCG: Eastern Cooperative Oncology Group performance status; MADS, Memorial Delirium Assessment Scale; N/A, not applicable.
[1]Univariate logistic regression analysis was used to investigate variables as potential predictors of death in 24 hours after acute palliative care unit transfer. Variables included age, sex, MDAS (Memorial Delirium Assessment Scale), ECOG (Eastern Cooperative Oncology Group performance status), ESAS all items (Edmonton System Assessment Scale), place of transfer, day of transfer, responsiveness, and oxygen therapy.
[2] Multivariate analysis was performed using the backward method.

Conclusions

Patients with delirium, oxygen requirements, hematologic malignancies, low performance status, and unresponsiveness at the time of transfer are more likely to die within 24 hours of APCU transfer. A more thorough pre-transfer evaluation of these patients is required to minimize distress to patients, families, and staff.

eP432
SIMULTANEOUS HOME CARES (SHC) FOR FRAIL ADVANCED CANCER PATIENTS: A MODEL OF INTEGRATION BETWEEN NO-PROFIT AND PUBLIC HEALTH SYSTEM

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Introduction
Limited researches evaluate effectiveness of cancer patients home care management. Our project represents an opportunity for patients who may benefit from chemotherapy, but with physical and social problems that prevent day-hospital access, and a model of "no profit" contribution to the Public Health System.
Methods
Our Oncology Department, supported by a no-profit organization, conducted this project from 2014 to 2018. We included frail

patients selected with G8 score (<14), with advanced diseases, treated with oral or subcutaneous therapies and supportive cares, with limitations to day-hospital access, co-morbidities and at least six months life expectancy. A multidisciplinary team included 4 Nurses, an Anesthetist, a Psychologist, a Physiotherapist and an on call Oncologist. Satisfaction was evaluated with the FAMCARE scale.

Results

A total of 135 patients (median age 73 years) with metastatic disease and a median G8 score of 8.8 (range 3-13) were enrolled. They received supportive cares and anticancer treatment. Median duration of taking care was 162 days (range 7-853). We performed a total of 189 nursing and 145 medical visits per year, with an average of 1.5 and 1.8 visit per month, respectively. Median number of in-line patients was 20 (range 17-24). Hospitalization occurred in 18.4%. One third of them died at home. FAMECARE assessed a high patients and caregivers satisfaction.

Conclusions

Our experience shows the effectiveness of integration between supportive care and anti-cancer treatment in home setting. If confirmed in prospective pharmaco-economics studies, our data suggest that home cancer treatment provides high quality of assistance to frail patients.

eP433

PALLIATIVE CARE PRACTICALLY IMPROVED PHYSICAL AND MENTAL SYMPTOMS OF ADVANCED CANCER PATIENTS WHO ADMITTED TO PALLIATIVE CARE UNIT

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Introduction

In palliative care unit (PCU), palliative care team provide physical, psychosocial, and spiritual care to patients and their families. To improve quality of care, we must measure whether palliative care really improve their physical, mental and spiritual well-being.

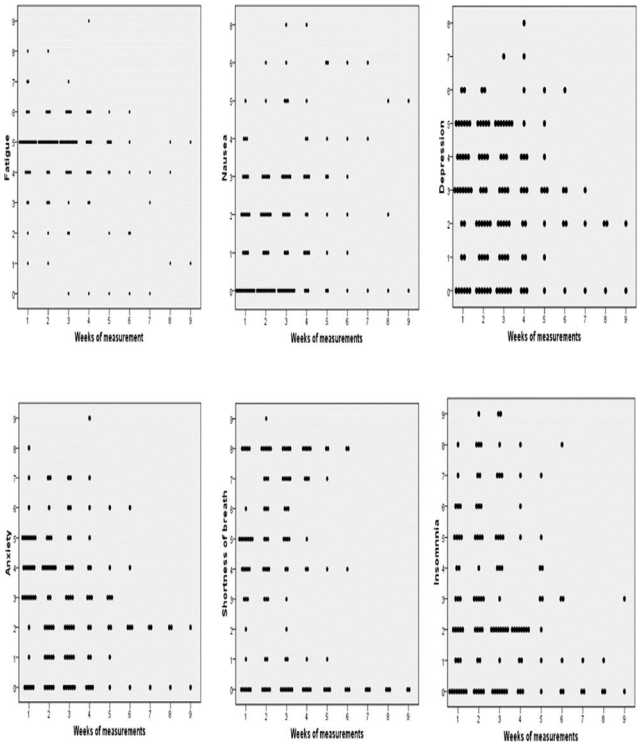
Methods

The Korean version of Edmonton Symptom Assessment System (K-ESAS) were filled out within 3 days from admission and weekly thereafter by advanced cancer patients in PCU of Pusan National University Yangsan Hospital. This study is retrospective analyses of the K-ESAS written from March 2018 to December 2018.

Results

Totally 173 patients were admitted in PCU. Among them, 97 patients (56%) could fill up 222 K-ESAS questionnaires. Median age is 62 years (33-90) and there were more male (n=55, 56.7%) than female. To evaluate the change of symptoms over time, we focused on K-ESAS of patients who filled-up three-times (three weeks) or more K-ESAS. There were 28 patients who met this conditions, and these patients completed total 130 K-ESASs. For each items of K-ESAS, the score of fatigue (p=0.001), nausea (p=0.011), anxiety (p=0.025), shortness of breath (p=0.004), and insomnia (p=0.045) showed gradually decreased (test of linearity by One-way ANOVA). For the each symptom scale, similarly, comparison of mean value of 1st to 3rd K-ESAS versus 4th to further of it showed that the score of fatigue, nausea, shortness of breath, and insomnia were significantly decreased (p=0.013, 0.010, 0.045, and 0.042 for respectively; t-test).

<Dotplot of representative symptom scale over time>



Conclusions

Some symptoms of terminal cancer patients measured by K-ESAS were improved over time in PCU.

eP434

EFFECTIVENESS OF ADVANCE CARE PLANNING TRAINING PROGRAMS FOR HEALTH CARE PROFESSIONALS - A SYSTEMATIC REVIEW

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Introduction

Advance care planning (ACP) is the process of ongoing communication among patients, family and healthcare professionals regarding what plans for future care are preferred. The present systematic review aims to evaluate the formats and effectiveness of ACP training programs for healthcare professionals.

Methods

A literature search for intervention studies was conducted independently by two reviewers in July 2018. Participants included healthcare professionals working with adult patients suffering from terminal illness. The Effective Public Health Practice Project appraisal tool was used to examine the quality of the studies included.

Results

A total of 4,025 articles were identified, and 10 eligible articles, covering 1,081 participants, were included in the review. A PRISMA flow chart of the study retrieval and selection process with reasons for exclusion at each stage will be presented. The overall quality of the intervention studies was moderate. All the studies included used instructional sessions in their interventions, while some contained group discussion, role-play and the use of advanced technology and decision aids. The training programs improved the knowledge, attitudes towards shared decision-making, perceived communication skills, confidence, and experiences concerned with discussing end-of-life (EOL) issues. Patient advocacy, job satisfaction and perceived level of adequate training for EOL care were also improved. The use of 'decision aids' were rated as acceptable and clinically useful.

Conclusions
Training for healthcare professionals in ACP has positive effects on ACP discussion. Appropriate use of decision aids should be used in clinical settings to assist the ACP discussion.

eP435
PILOT STUDY FOR PSYCHOMETRIC VALIDATION OF THE SHEFFIELD PROFILE FOR ASSESSMENT AND REFERRAL TO CARE (SPARC) IN KOREAN CANCER PATIENTS

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Introduction
To validate the Sheffield Profile for Assessment and Referral to Care (SPARC) as an effective tool for screening the needs of palliative care in Korean cancer patients
Methods
English version of the SPARC was translated by 4 Korean oncologists and merged by a Korean language specialist. Established the 1st version of the Korean-SPARC (K-SPARC) was back-translated into English was performed by a professional translator and bilingual oncologist. Back-translated version was reviewed by the original author (Ahmedzai SH) and some modifications were made (version 2). The second version of the K-SPARC was tested with other questionnaires including FACT-G and ESAS.
Results
A total of 15 patients was enrolled in the pilot trial. Nine were male and the median age was 58 years. Four had ECOG PS more than 2, while 10 received education beyond high school. All patients were receiving palliative chemotherapy in an in-patient setting. Mean score for each item was not significantly affected by gender. Internal consistency (Cronbach 's α score) for physical symptoms, psychological issues, religious and spiritual issues, independency and activity, family and social issues, and treatment issues were 0.852, 0.783, 0.567, 0.653, 0.729, and 0.801, respectively. Correlation coefficient of SPARC and FACT-G for physical domain was 0.697 (p=0.004) and social domain was -0.069 (p=0.808). Social domain showed difference per gender.
Conclusions
The Cronbach 's α scores in our pilot study indicate that K-SPARC might be a valid tool to screen for the needs of palliative care in Korean cancer patients. Further study is ongoing to validate our findings.

eP436
PALLIATIVE CARE EARLY AND SYSTEMATIC (PACES): ASSESSING PATIENT AND CAREGIVER PREFERENCES FOR EARLY PALLIATIVE CARE DELIVERY IN RURAL ALBERTA

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Introduction
Early access to palliative care (PC) improves patient/caregiver and health system outcomes. Rural PC is characterized by late referrals, limited access to specialized care, and poorer symptom control. The objectives of this patient/caregiver study were:

1. how they perceive early PC referral;
2. how to improve PC alongside cancer treatments;
3. how to transition from disease control/cure-focused treatment to palliative-focused care.

Methods
This qualitative study utilized interpretive description methodology (Charmazian Grounded Theory) to guide data collection and analysis.
Results
Participants interviewed comprised thirteen patients and nine caregivers living with advanced cancer in rural Alberta. The themes were:
1. Rural patients and families appear uninformed (unaware?) about the availability of PC treatment option, or as adjuvant care alongside curative and disease control therapies. Most recognize PC as focused on comfort and quality of life, and useful only at end of life.
2. Patients and families want PC to be introduced early, based on patient readiness, with information delivered in a straightforward manner.
3. Rural patients and families face challenges common to all those living with advanced cancer, exacerbated by long travel times and scarcity of specialized services.
4. Home care, nurse/patient navigators and satellite cancer clinics are critical services.
5. Support groups for patients and caregivers are crucial, but lacking.
Conclusions
The availability and benefits of PC remain largely unknown to rural Albertans. When PC is recognized as a supportive modality available throughout the disease trajectory, patients and caregivers reported they would benefit from early palliative interventions.

eP437
THE EFFECT OF ANAMORELIN ON BODY COMPOSITION OF PATIENTS WITH ADVANCED NON-SMALL CELL LUNG CANCER (NSCLC) AND ANOREXIA/CACHEXIA: POOLED ANALYSIS OF TWO PHASE 3 TRIALS

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Introduction
Anorexia/cachexia occurs in many patients with advanced NSCLC. In the randomized, double-blind phase 3 trials ROMANA 1 (NCT01387269) and ROMANA 2 (NCT01387282) in NSCLC patients with cachexia, the ghrelin receptor agonist anamorelin was well tolerated and significantly increased body weight, lean body mass (LBM), fat mass (FM), and reduced anorexia symptoms. A body mass index (BMI)<20 kg/m^2 is a diagnostic criterion for cachexia. This analysis assessed changes in body composition of anamorelin in people with BMI<20 kg/m^2 compared with those who had BMI≥20 kg/m^2.

Methods

Stage III/IV NSCLC patients with cachexia (BMI<20 kg/m^2 or a weight loss of ≥5% during the prior 6 months) were randomized 2:1 to 100-mg once-daily oral anamorelin or placebo for 12 weeks. A pooled post-hoc analysis measured changes from baseline to end of study (EOS) in body weight, LBM, and FM, in patients with BMI<20 kg/m^2 and BMI≥20 kg/m^2.

Results

In patients with BMI<20kg/m^2 at baseline (N=182), anamorelin significantly increased body weight, LBM, and FM at EOS (Table). This was also observed in patients with BMI≥20 kg/m^2, to a lesser extent, however.

	Anamorelin vs placebo, mean (SD), p value			
	Change from baseline to EOS (absolute values)		Percentage change from baseline to EOS	
	BMI<20kg/m^2 (N = 182)	BMI≥20kg/m^2 (N = 647)	BMI<20kg/m^2 (N = 182)	BMI≥20kg/m^2 (N = 647)
Body weight, kg	2.44 (4.87) vs −0.64 (3.47), <0.001	1.59 (4.45) vs −0.36 (4.09), <0.001	4.65 (9.22) vs −1.07 (6.43), <0.001	2.33 (6.29) vs −0.56 (6.00), <0.001
LBM, kg	1.25 (2.66) vs −0.46 (2.59), <0.001	1.13 (2.73) vs −0.34 (2.73), <0.001	3.26 (6.49) vs −0.85 (6.46), <0.001	2.57 (5.89) vs −0.60 (5.69), <0.001
FM, kg	1.20 (2.96) vs −0.46 (1.70), <0.001	0.51 (2.84) vs −0.28 (2.88), 0.002	14.52 (28.17) vs −4.44 (16.43), <0.001	3.86 (15.33) vs −0.40 (14.90), 0.001

SD, standard deviation.

Conclusions

In NSCLC patients with anorexia/cachexia and BMI<20kg/m^2, anamorelin produced a clinically relevant increase in each measure: body weight, LBM, and FM. These results suggest that patients with more advanced cachexia can still benefit from anamorelin treatment. Current phase 3 studies further evaluate the effect of anamorelin on body weight and anorexia symptoms in people with NSCLC and BMI<20 kg/m^2.

eP438

INFORMATION NEEDS ABOUT PALLIATIVE CARE AND EUTHANASIA: A SURVEY OF PATIENTS IN DIFFERENT PHASES OF THEIR CANCER TRAJECTORY

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Introduction

We assessed information provision and information needs about illness course, treatments, palliative care and euthanasia in cancer patients.

Methods

Cancer patients consulting a university hospital (N = 620) filled out a questionnaire. Their cancer related data were collected through the treating oncologist. This study is performed in Belgium, where "palliative care for all" is a patient's right embedded in the law and euthanasia is possible under certain conditions.

Results

Around 80% received information about their illness course and treatments. Ten percent received information about palliative care and euthanasia. Most information about palliative care and euthanasia was given when the patient had a life expectancy of less than six months. However, a quarter of those in earlier phases in their illness trajectory, particularly those who experienced high pain, fatigue or nausea requested more information on these topics.

Conclusions

Many patients want more information about palliative care and euthanasia than what is currently provided, also those in an earlier than terminal phase of their disease. Practice implications: Healthcare professionals should be more responsive, already from diagnosis, to the information needs about palliative care and possible end-of-life decisions. This should be patienttailored, as some patients want more and some patients want less information.

eP439

THE PERCEPTION OF PEOPLE WITH CANCER ON STARTING A CONVERSATION ABOUT PALLIATIVE CARE: A QUALITATIVE INTERVIEW STUDY

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Introduction

Communicative behaviours and patient-centered care are important determinants for timely initiation of palliative care. We aimed 1) to understand and explain the behaviour 'starting a conversation about palliative care with a health professional' from the perspective of people with incurable cancer by using behavioural theories (eg Theory of Planned behaviour) and 2) to formulate a behavioural model for the defined behaviour.

Methods

A qualitative study using semi-structured face to face interviews with 25 persons with incurable cancer: 13 not (yet) receiving palliative care and 12 already receiving palliative care. Identified determinants related to 'starting a conversation about palliative care with a health professional' were fitted in concepts of behavioural theories (eg 'attitude' of the Theory of Planned Behaviour).

Results

Both positive and negative stances towards starting a conversation about palliative care with a health professional were found. The oncologist and the family physician were the preferred health professionals. Factors facilitating and hindering the behaviour were identified such as awareness (eg perceived health threat); knowledge (eg about palliative care possibilities); attitude (eg association of palliative care with quality of life or death); social norm and influence (eg the relationship with the health professional); and perceived behavioural control (eg self-confidence) and modelled in a behavioural model applied to palliative care initiation.

Conclusions

The identified modifiable determinants of our behavioural model can be used to develop promising interventions promoting palliative care communication initiated by the patient and improving timely palliative care initiation.

eP440

THE PRESCRIPTION RATES OF ANTIPSYCHOTICS AND SEDATIVES IN THE MANAGEMENT OF DELIRIUM IN PALLIATIVE CARE IN SOUTH KOREA

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Introduction

Delirium is common in patients receiving palliative care, which reduces the quality of life of the patients. Although nearly half of the delirium among such population is reversible, the importance of early detection and timely management is often overlooked. In this study, we investigated the prescription rates of drugs administered for delirium management, using claims data from the Health Insurance Review and Assessment Service (HIRA) in South Korea.

Methods

We obtained information on palliative care among a nationwide cohort of 20,556 patients whose diagnoses were registered as palliative care from January 1, 2013 to December 31, 2016, based on HIRA claim data. The prescription rates of antipsychotics, benzodiazepines, opioid analgesics and other sedatives according to year, age, and hospital levels were analyzed by Cochran-Armitage test.

Results
The prescription rate of antipsychotics significantly increased from 19.8% in 2013 to 26.2% in 2016 ($p < 0.001$). As age increased, the prescription rate of quetiapine significantly increased (5.6% in ≤60 years to 11.5% in >80 years, $p < 0.001$) and that of benzodiazepines significantly decreased (35.7% to 25.4%, $p = 0.024$). As the level of the hospital increased from primary-level hospital to tertiary hospital, the prescription rate of antipsychotics significantly increased (17.1% to 33.2%, $p < 0.001$).
Conclusions
The prescription rate of antipsychotics in patients receiving palliative care increased during 2013-2016, indicating the improvement of physicians' awareness of delirium management. However, prescription rates of antipsychotics varied widely by hospital level, suggesting that education and palliative consultation on delirium management for palliative care providers may be required.

eP441
MASCC RECOMMENDATIONS ON THE MANAGEMENT OF CONSTIPATION IN PATIENTS WITH ADVANCED CANCER

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Introduction
The MASCC Palliative Care Study Group formed a sub-group to develop evidence-based recommendations on the management of constipation in patients with advanced cancer.
Methods
The recommendations were developed in accordance with the MASCC Guidelines Policy.
Results
Recommendations (category of guideline):
1. Patients should be regularly assessed for constipation [Suggestion]. 2.Management of constipation should be individualised [Recommendation]. 3.Patients should be offered adequate privacy/ appropriate equipment to promote defaecation [Suggestion]. 4.Lifestyle changes have a limited role [Suggestion]. 5.Reversible causes should be treated [Suggestion]. 6.Conventional laxatives should be considered as first-line treatment in functional constipation [Recommendation]. 7.Conventional laxatives should be considered as first-line treatment in secondary constipation [Suggestion]. 8.If patients with functional constipation/secondary constipation do not respond to first-line conventional laxatives, then consider adding or switching to another conventional laxative or specialist medication [Recommendation]. 9. PAMORAs should always be considered in patients with OIC [Recommendation]. 10. If patients with OIC do not respond to PAMORAs, then consider adding or switching to a conventional laxative or specialist medication [Suggestion]. 11. Patients prescribed opioid analgesics should be routinely co-prescribed laxatives/PAMORAs [Suggestion].12. Suppositories/ enemas should only be used in patients with evidence of stool in the rectum/descending colon that have not responded to other interventions [Suggestion]. 13. Other interventions should generally only be used in patients with "resistant" constipation [Suggestion]. 14. Patients with constipation should be regularly re-assessed [Suggestion]. 15. Patients with ongoing "resistant" constipation should be referred to a specialist for further investigation/management [Suggestion].
Conclusions
The management of constipation should be individualised.

eP442
A COMPARISON OF URGENT VERSUS ROUTINE REFERRALS TO AN OUTPATIENT ONCOLOGY PALLIATIVE CARE CLINIC

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Introduction
Ambulatory palliative care clinics are increasingly recommended for optimum early palliative care. However, little is known about the characteristics of patients referred urgently to these services, and how they may differ from patients referred for routine assessments. Our objective was to compare these two groups.
Methods
We retrospectively reviewed all urgent referrals between January 2016 and December 2017, comparing these to a random selection of patients referred for routine assessment in a 1:2 ratio. Data was collected on patient demographics, tumour site, referral source, reason for referral, and disposition after the clinic visit.
Results
A total of 113 patients were referred urgently to the palliative care clinic and were compared to 226 routine assessments. The mean age was 64±15 (vs. 67±13 for routine referrals, p=0.06) and 53% were female (vs. 48%, p=0.36). The most common tumour sites for urgent referrals were lung (23%) and gynecological (17.7%), compared to lung (17.3%) and gastrointestinal (20.4%) for routine assessments. A total of 79.6% of urgent referrals were for symptom management, while 20.4% required palliative care planning; medical oncology accounted for 58.4% of referrals. Sixteen percent of urgent referrals were admitted to hospital following their palliative care clinic visit, and 60.2% continued to be followed in the palliative care clinic.
Conclusions
There is a trend towards younger patient age for urgent referrals, most of which are for symptom control. Palliative care clinics need to consider how best to incorporate urgent referrals into their services.

eP443
HOSPICE USE AMONG OLDER PATIENTS WITH ADVANCED CANCER IN COMMUNITY ONCOLOGY PRACTICES

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Introduction
Hospice is crucial for providing high quality supportive care at the end of life. However, predictors of utilization of hospice by older patients with advanced cancer treated in community oncology practices are not well-described.
Methods
This is a secondary analysis of patients aged 70+ with advanced cancer who died within one year of enrollment from a nationwide cluster-randomized geriatric assessment (GA) (URCC 13070; PI: Mohile); patients had ≥ 1 GA domain impairment when enrolled (e.g. cognition,

function). Hospice use and place of death were captured. We conducted bivariate and multivariate logistical models to examine predictors of hospice use, including demographics, study arm, and clinical variables [cancer and total number of GA domain impairments].

Results

Among 541 patients (age 70-96), 178 (33%) died within one year, of these, 69% utilized hospice. Place of death were home on hospice (51%), hospice facility (14%), home not on hospice (7%), long term care facility (7%), inpatient hospice (4%), inpatient not on hospice (5%), and unknown (13%). On bivariate analyses, patients who were younger or received chemotherapy were more likely to utilize hospice while patients on hormonal treatment were less likely to utilize hospice (all Ps ≤.05). On multivariate analysis, only receipt of chemotherapy was associated with hospice utilization (Adjusted Odds Ratio 2.41, 95% Confidence Interval 1.06-5.52).

Conclusions

Approximately 70% of older patients treated at community oncology practices utilized hospice, most in the outpatient setting. Awareness that treatment type is associated with hospice use may help guide conversations to improve end of life care.

eP444

EARLY AND SYSTEMATIC INTEGRATION OF PALLIATIVE CARE INTO MULTIDISCIPLINARY ONCOLOGY CARE: THE EFFECT ON INFORMAL CARERS.

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Introduction

We evaluated whether early and systematic integration of palliative care (PC) into oncology care, which benefits people with advanced cancer in comparison with usual care, also has an impact on informal carers.

Methods

We randomly assigned advanced cancer patients with a life-expectancy of one year and their informal carers to early and systematic integration of PC into oncological care (n=60) or usual care (n=55). Eligible carers lived with or had in-person contact with the patient at least twice a week and were likely to accompany him/her to the hospital. Carers completed validated measures assessing quality of life [SF-36v2 Health Survey] at baseline, 12 weeks and six weekly thereafter until death.

Results

Carers from the intervention group reported greater improvement in the mental component score (MCS) of the SF36v2 Health Survey at 18 weeks than those with usual care. No significant improvements were found in the physical component score (PCS) (12 weeks: P=0.21, 18 weeks: P = 0.02) or MCS (P= 0.44) at 12 weeks. A terminal decline analysis also showed significant intervention effects on carers' QOL, with effects at one (PCS: P= 0.02, MCS: P= <0.001), three (PCS: P=0.02, MCS: P= 0.002) and six (PCS: P=0.02, MCS: P=0.02) months before patient death.

Conclusions

Early integration of palliative care into oncology care improves the quality of life of informal carers of people with advanced cancer, both soon after diagnosis and close to the patient's death.

eP445

DEATH IN THE PALLIATIVE CARE UNIT: WHAT MATTERS MOST IN THE LAST DAYS OF LIFE, WHY, AND HOW CAN WE REPLICATE IT IN OTHER CONTEXTS?

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Introduction

The majority of studies assessing goals, and quality of palliative care (PC) are about 'end of life' care in general. However, to improve care of the imminently dying, a focus on the 'last days of life' is essential. We aimed to better understand the needs of families during the last days of life of a dying family member.

Methods

After ethical approval, between 2017 and 2018, 16 family members representing 13 deceased patients participated in-depth interviews/focus groups. Data were thematically analysed.

Results

All the deceased had died of cancer. In the last days of life, six main themes were central: 1) the need for *taming* time, 2) the need for clearer and caring information, 3) the need for individualised support and companionship, 4) the need for interconnected, attentive and caring health professionals, 5) the need to *feel* in the *right* place of care, and 6) the need to create positive memories of the dying phase despite the circumstances. Within these themes several subthemes were identified.

Conclusions

Dying in an acute palliative care unit can be remembered positively but due to existing practices, including late referral, families are confronted with many time-dependent issues. At such a late phase, time is rarely negotiable but through the identified themes, treating teams can improve how people die and how families adjust to death. Most importantly, many of the identified aspects can and should occur outside PC, thus, our findings can enhance the support given in other settings of care, including hospitals, hospices, aged care and the home.

eP446

PHASE II CLUSTER RANDOMISED WAITLIST CONTROLLED TRIAL OF A MULTICOMPONENT NON-PHARMACOLOGICAL INTERVENTION TO PREVENT DELIRIUM FOR INPATIENTS WITH ADVANCED CANCER (ACTRN12617001070325P)

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Introduction
Delirium is a common and serious medical complication during hospitalisation. Multicomponent non-pharmacological strategies prevented delirium in one in three older hospitalized patients in previous studies, and require testing in inpatients with advanced cancer.
Methods
A phase II (feasibility) cluster randomised controlled trial of a multicomponent non-pharmacological intervention to prevent delirium for adult inpatients with advanced cancer at four Australian palliative care units, with control sites waitlisted to the intervention. The intervention included strategies to promote optimal sleep, vision and hearing, hydration, orientation, mobility, and family partnership. We collected data for the first seven days of enrolled patients' admission. Outcomes focused on delivery of care (with adherence the primary outcome); delirium incidence and severity; and adverse events. Data were analysed using descriptive statistics.
Results
Data were collected for 65 eligible patients (20 intervention, 25 control, 20 waitlist intervention) May-September 2018. Adherence was higher at waitlist intervention sites, where 28% of patients received *all* prevention strategies and 50% received *any* strategy within at least four domains for at least five of the first seven days of admission. Highest delivery of the intervention was by nurses (67%), then medical staff (16%), allied health (8.4%), family caregivers (7%) and volunteers (0.5%). There was 98% completion of delirium screening and 77% completion of diagnostic assessment. Delirium incidence was lower in the intervention (20%) and waitlist intervention sites (20%) compared to controls (32%). The intervention resulted in no adverse events or complaints.
Conclusions
Results from this feasibility study inform the development of a phase III trial of the intervention.

eP447
FEASIBILITY AND ACCEPTABILITY OF THE EARLY PALLIATIVE HOME CARE EMBEDDED IN CANCER TREATMENT (EPHECT) INTERVENTION

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Introduction
To support the early integration of palliative home care (PHC) in cancer treatment, the EPHECT intervention was developed and pilot tested with 32 advanced cancer patients in Belgium. The intervention consisted of systematic consultations with a PHC team, supported by a semi-structured conversation guide. Telephone-based contact was used to facilitate transmural collaboration between home and hospital, with the general practitioner (GP) as coordinator of care.
Aim: to determine feasibility and acceptability of the EPHECT intervention as perceived by the patients and healthcare professionals involved.
Methods
Interviews with patients (n=15), oncologists and GPs (n=9) and a focus group with the PHC team. Data were analysed using thematic analysis.
Results
Most intervention components were found feasible and acceptable, except for 'transmural collaboration' and 'GP as coordinator of care'. Healthcare professionals mentioned problems with being reachable and reported that it was difficult to estimate when contact was needed. According to GPs and the PHC team, the responsibilities and task allocations of the different professionals remained unclear. The intervention had no perceived effect on the involvement of GPs, according to patients, family carers, the PHC team and GPs.
Conclusions
Telephone-based contact seems to be insufficient to facilitate transmural collaboration in a model of early PHC embedded into cancer treatment. Furthermore, the role of the GP might have to be reconsidered, as most of them were rarely involved. Based on these results, we are able to further refine the intervention model before implementing it in a phase 3 randomized controlled trial for the evaluation of its effectiveness.

eP448
QUALITATIVE STUDY OF PATIENT, FAMILY, STAFF AND VOLUNTEER PERSPECTIVES DURING A PHASE II TRIAL OF A MULTICOMPONENT NON-PHARMACOLOGICAL DELIRIUM PREVENTION INTERVENTION IN ADVANCED CANCER

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Introduction
Delirium is a serious and common medical complication for people with advanced cancer during admission to hospital. During a phase II trial of a multicomponent non-pharmacological delirium prevention intervention for inpatients with advanced cancer, we sought patient, family, staff and volunteer perspectives of the feasibility and acceptability of the intervention and study measures.
Methods
An embedded qualitative study. Following implementation of the intervention (delirium screening, diagnostic assessment, and prevention strategies addressing sleep, vision, hearing, eating and drinking, orientation, mobility and family partnership) at four participating Australian palliative care units, we conducted semi-structured interviews with patients, family, staff and volunteers. Data were analysed using directed content analysis according to the Behavior Change Wheel (BCW) theoretical domains.
Results
Participants were multidisciplinary staff (n=28), patients (n=6), family members (n=4), and one volunteer. Influences upon intervention delivery aligned with the BCW core domains of 'capability', 'motivation' and 'opportunity', which we will report within seven sub-themes. Overall, participants generally believed the delirium prevention intervention was feasible and acceptable for patients with advanced cancer, and that adherence to the intervention in a phase III trial will be enhanced by i) simplifying the intervention; ii) aligning strategies to discipline roles; iii) modifying documentation and data collection processes; and iv) developing structured process to better engage family and volunteers in the delivery of patient care.
Conclusions
Findings informed both the processes and results of the trial, as well as the development of a phase III trial of the intervention.

eP449
OBSERVATIONAL STUDY UPON ENFORCEMENT OF THE LIFE-SUSTAINING TREATMENT DECISION ACT IN RECURRENT GYNECOLOGIC CANCER PATIENTS

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Introduction
Since the implementation of the Life-Sustaining Treatment Decision (LSTD) Act in February, 2018, end-of-life (EOL) care decisions have

become an urgent issue in Korea. However, the execution rate in clinical practice is still low due to lack of prior discussions and patients' perceptions. This study is to explore the incidence and timing of LSTD in recurrent gynecologic cancer patients after the initiation of the new legislation.

Methods

Retrospective observational study was performed of patients that were treated for recurrent gynecologic cancer at a tertiary hospital. Patients who signed the LSTD consent form during this study period were assessed. Cancer type, previous number of treatments, type and time from first recurrence to LSTD documentation, survival after consent and barriers to consent were analyzed.

Results

A total of 277 patients were treated for recurrent gynecologic cancer during the study period. Among them, 37 patients (13.3%) gave consent for POLST by themselves and decision of 7 patients' (2.5%) were made by the family due to physical inability of patient to sign. The median number of chemotherapy regimens before the consent was 3 (range 1-6). Eighty percent of patients were in the disease progression state and the median number of days from the POLST consent to death was 45 days (2-157). The most common cause of reluctance to decision making for EOL care was lack of information and insight on the disease status.

Conclusions

Findings suggested that family discussions on LSTD is needed in advance to resolve resistance to early hospice-palliative care.

eP450

FREQUENCY AND CHARACTERISTICS OF FIRST-TIME PALLIATIVE CARE REFERRALS DURING THE LAST DAY OF LIFE

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Introduction

Palliative Care referrals (PCR) improve symptom management, provide psychosocial and spiritual support, clarify goals of care and facilitate discharge planning; however, very late PCR do not allow patients and families to benefit from the full spectrum of interdisciplinary care.

Methods

Consecutive first-time inpatient PCR from September 2014 to August 2017 were reviewed to determine the frequency and predictors of PCR within 24 hours of death. Clinical characteristics were compared with a random sample of patients who were discharged alive or died >24 hours after first-time PCR.

Results

154/7322 first-time PCR (2%) died within 24 hours of referral. Patients with PCR within 24 hours of death were older (p=0.0029) and had higher scores for depression (p=0.0009), drowsiness (p=0.0190) and shortness of breath (p=0.0082). At the time of consultation, 147/154 (95%) had ECOG 4, 137/154 (89%) had delirium, 125/154 (81%) had a DNR code status, and 60/154 (39%) had hematologic malignancies versus 39/153 (25%, p<0.0001), 26/153 (17%, p<0.0001), 27/153 (17%, p<0.0001) and 24/153 (16%, p<0.0001) controls, respectively. In multivariate analysis, depression (odds ratio [OR] 1.397, p=0.0053), DNR code status (OR 0.0034, p=0.0034) and ECOG 4 (OR 9.756, p=0.003) were independently associated with PCR within 24 hours of death.

Conclusions

A significant number of patients receive a PCR for the first time during the last day of life. Patients with higher scores for depression, DNR code status and ECOG 4 are at increased risk. Special attention is needed for these sentinel events. More research is needed to understand how to minimize very late PCR.

eP451

AN EVALUATION OF NON-MEDICAL PRESCRIBING WITHIN A HOSPITAL SUPPORTIVE AND PALLIATIVE CARE TEAM (SPCT) IN THE UK

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Introduction

Registered nurses in the UK have the authority to prescribe for their patients (including controlled drugs) following successful completion of a recognised qualification. Evidence suggests that specialist nurses are not using their qualification due to various factors such as lack of confidence and limited support.

The SPCT within a district general hospital and cancer centre has 5.4 WTE clinical nurse specialists (CNSs) 3 of whom are NMPs. The team were interested to evaluate the prescribing activity of the NMPs including the scope of medications prescribed and to highlight any barriers.

Methods

A prospective review of all consultations and the prescribing activity of 3 non-medical prescribers (NMPs) between 1st August 2018 and 31st October 2018. Information was recorded and analysed using micosoft excel.

Results

A total of 493 consultations with 186 individual patients were carried out in the time period. 247 consultations resulted in a prescription; 209 – drug started; 23 - dose change; 15 drug stopped. 246 consultations with no change in prescription; 234 – no indication for change; 10 – advice given; 2 – advice sought. Table 1 shows the range of drugs prescribed No. of times prescribedStrong opioid123Antipsychotic57Conventional

eP488
BACK TO SCHOOL WITH ROBOT TECHNOLOGY

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Introduction
Children and adolescents with cancer experience social, psychological and educational difficulties, because of treatment-related absenteeism, once they return to school. This results in 20% of the children having to repeat a class. New technology may facilitate education by connecting the child to the classroom despite being physically absent. This pilot-study explores if and how telepresence-robots can support school-aged children with cancer to maintain socially and academically connected with their class during treatment, and thereby facilitate their social and educational development.
Methods
The intervention pilot-study, entails implementation and extradition of AV1-robots for children with cancer, during treatment. School-aged children (n=3, 12-14 years) diagnosed with cancer or cancer-related illness were included, along with their parents (n=3), teachers (n=2), classmates (n=15) and medical-professionals (n=4) in 2017-2018. Data were collected by semi-structured interviews and focus group interviews combined with participant observation in the classrooms.
Results
Three themes were found relating to sociality, learning, and technology. The study showed that telepresence robots can facilitate social interaction processes with classmates and inclusion in learning activities, which reduced the sense of loneliness and exclusion. However, the robot-intervention is influenced by multiple factors that determine whether the robot technology is inclusive or exclusive for the child, including; the technical functionality of the robot, the well-being of the child, and the expectations between the parties involved.
Conclusions
The telepresence-robots may provide new possibilities for school-aged children to continue their regular education, despite being hospitalized or isolated at home. However, technology improvements and further evidence-based research are needed.

eP489
CHARACTERISTICS OF PATIENTS UNDERGOING CHEMOTHERAPY WHO DO AND DO NOT EXERCISE

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Introduction
Undergoing chemotherapy can produce physical and psychological symptoms that lead to reduced physical function, activity, and quality of life (QOL). Exercise is useful to decrease fatigue and depression and improve function and QOL. Study purpose was to compare characteristics of patients based on the number of minutes per week they exercised during chemotherapy treatment.
Methods
Oncology patients completed questionnaires related to exercise, symptoms, over-all physical and mental health and QOL experienced in the week prior to the initiation of a chemotherapy cycle. Three exercise groups were created based on the amount of time the patients reported exercising in the past (i.e., 0 minutes (non-exercisers), <150 minutes (low-exercisers), and >150 minutes (high-exercisers). Analysis of variance was used to evaluate for differences among the three exercise groups.
Results
Of the 1033 respondents, 37.2 % were non-exercisers, 43.7% were low-exercisers, and 19.1% were high-exercisers. Compared to the two exercise groups, non-exercisers had higher BMI, lower Karnofsky Performance status score, and a higher number of comorbidities. Compared to the high-exercisers, non-exercisers reported more pain, lower attentional function, higher depression, poorer sleep, and higher morning fatigue. In addition, non-exercisers had poorer physical function, and reduced QOL.
Conclusions
Patients undergoing chemotherapy who do not exercise have poorer physical and mental health compared to those who exercised for any amount of time per week. Patients may experience health benefits by incorporating some physical activity into their daily routine while in treatment.

eP490
TAIWAN CHINESE VERSION OF THE SELF-REGULATION QUESTIONNAIRE FOR GYNECOLOGIC CANCER SURVIVORS IN TAIWAN: A PSYCHOMETRIC STUDY

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Introduction
To improve quality of life (QOL), these survivors must deal with treatment-related side effects through self-regulation (SR). This study evaluated the psychometric properties of a culturally adapted Taiwan Chinese version of the self-regulation questionnaire (TC-SRQ) for gynecologic cancer survivors.
Methods
A cross-sectional study. The TC-SRQ was adapted from a German version through translation and back translation. Pilot (N=37) and formal tests (N=287) of TC-SRQ with a sample of these survivors were conducted. Construct validity was evaluated by confirmatory factor analysis; convergent validity tested by using EORTC QLQ-C30 while discriminant validity using age, family support, health status, and sleep quality. Reliability was evaluated by internal consistency and test-retest reliability.
Results
Analying data fit for TC-SRQ measurement model found significant difference ($\chi 2=311.23$, $p=0.0$) failed to reject the null hypothesis but satisfied by popular fit indices (RMSEA=0.088; NFI=0.97, CFI=0.98, NNFI=0.97). SR correlated positively with QOL in overall and in partial of functional domains and negatively with fatigue and pain. SR also distinguished by age, family support, health status, and sleep quality. Thus, TC-SRQ demonstrated good convergent and discriminant validities. A Cronbach's α of .91 indicated good internal consistency; the test-retest reliability coefficient was .82.
Conclusions
TC-SRQ is valid and reliable for assessing self-regulation in gynecologic cancer survivors. With TC-SRQ, self-regulation of gynecologic cancer survivors can be measured clinically and regularly.

eP491
THE EFFECTS OF THE MINDFULNESS ADDED TO BODY-MIND-SPIRIT GROUP THERAPY ON IMPROVING DEPRESSIVE SYMPTOMS AMONG NON-SMALL CELL LUNG CANCER (NSCLC) SURVIVORS

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Introduction
This study aims to examine the long-term effects of mindfulness added to body-mind-spirit group therapy on improving depressive symptoms, physical distress (physical symptoms and functions), psychological well-being (mindfulness status, holistic well-being, meaning in life) among NSCLC survivors.
Methods
This study adopts the randomized controlled trial (RCT) design. Total 62 patients who are the stage 0-IIIA of non-small cell lung cancer (NSCLC). The subjects in a control group receive 120 minutes every week for 2-month education with supportive group. In the same period of time, in addition to contents of education provided in control group, subjects in an experimental group also receive 120 minutes every week for 2-month mindfulness added to body-mind-spirit group therapy (mindfulness with BMS) (mindfulness skills and boy-mind-spirit empowerment strategies).
Results
Total 62 patients participated in this study. For the baseline characteristics, except age, there were no significant differences between two groups. During the 5-month follow ups, while there were no significances in reducing depression levels in both groups, the greater reductions in emotions vulnerability and spiritual disorientation of BMS scale occurred in the experimental group than in control group. Moreover, the greater increases of global health scores and mindfulness levels were observed in the experimental group than in control group.
Conclusions
The results suggest BMS could decrease depression levels for the participants in both experimental and control groups during the 5-month follow ups. Additional mindfulness to BMS group therapy could reduce emotional vulnerability and spiritual disorientation, and increase global health status and mindfulness levels.

eP492
SUFFERING OF THE FEMALE CANCER PATIENT INFORMED OF WHO HAS MULTIPLE PROBLEMS FOR MOTHER AND CHILD RELATIONS

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Introduction
Traditionally, the relationship between mother and daughter is known to have many conflicts. A purpose of this study is to clarify the suffering of the female cancer patient who has a problem for mother and child relations.
Methods
This study was a descriptive qualitative-exploratory research, in which 5 participants were selected through purposive sampling and had semi-structured interviews about a current suffering. Interviews were recorded, transcribed and analyzed using an inductive approach to identify common themes.
Results
4 themes emerged about the meaning of suffering in female cancer patients who has a problem for mother and child relations: an invalid family coping, gave up already, avoid direct view, forced self-affirmation. But while i listening to their stories, the hope to the future life changed from negative to want to live.
Conclusions
It was revealed that female cancer patient had problems with parenthood relationships, family life, long-term planning, and self-identity. Nursing intervention for patients with family function problems is difficult. But, listening closely of life review is effective for people who have been deeply bruised feelings in the past.

eP493
SOCIAL FOLLOW-UP FOR PATIENTS IN A FRENCH CANCER CENTER : THE LILLE TEAM'S EXPERIENCE

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Introduction
Cancer is a chronic disease that generates social consequences in the short, medium and long term. What are the patients' social needs? What kind of social support for these patients?
Methods
At the Oscar Lambret center, there are two social workers. One social worker is dedicated to adults and the other one to children, adolescents and young adults. Their missions are based on the referential of the Francophone Association of Supportive Care in Oncology as well as the various Cancer Plans. Patients are assessed and supported regarding the different issues identified.
Results
Main patients' needs are related to access to care, disease recognition, family life, professional situation, financial aspects, housing issues and family organization. There are three main axes: technical-administrative work, help relationship and social mediation. The social worker works in a multidisciplinary team and in partnership, essential to a collegial reflection on patients' life project. Relying on patient's skills will guarantee a comprehensive and personalized care.
Conclusions
Our approach is systemic so that the norms, values, culture and history of the patient are respected and integrated in patient care path. For an always more qualitative support, two new projects are being investigated: collective interventions focused on professional integration and support for caregivers. The construction of an individual subject takes time, is not linear, is made of changes that must be supported, the aim is to get back autonomy

eP494
PREFERENCE OF HAIR WIG AND ITS INFLUENCE ON QUALITY OF LIFE AMONG CANCER PATIENTS RECEIVING CHEMOTHERAPY

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Introduction
The significance of alopecia and preference of hair wigs, which is highly tabooed and stigmatized in a culturally built country like India is under explored. This study attempts to investigate the awareness among patients about hair wigs, their preference and its impact on their quality of life.
Methods
Patients (N=294) with cancer, aged 13 and above, receiving chemotherapy were assessed for awareness and preference of hair wig, using an author-constructed interview schedule. Patients who preferred wigs were issued one, following the assessment of quality of life using Cancer Institute Quality of Life questionnaire, while 88 patients completed post assessment on completion of chemotherapy. The data thus obtained was analyzed using descriptive statistics, chi-square and Pearson's correlation.
Results
Majority (94.2%) of the patients were aware of alopecia and reported psychological (27.9%) and social (40.8%) as major area of concerns. While only 53.1% perceived hair loss to be highly significant, 65% preferred to have wigged. There was a significant association between education and awareness about wig ($p<0.01$) and preference for wig ($p<0.01$). Preference for wig was significantly correlated with age ($r=0.220;\ p<0.01$), perceived significance of hair loss ($r=0.380;\ p<0.01$) and awareness of wig ($r=0.341;\ p=0.000$). Similarly, there was

significant difference ($p<0.01$, $t=6.856$) in QOL of patients before and after usage of wig. Majority (64.7%) reported that the wig was very useful in attending social events, work and shopping.

Conclusions

Alopecia is perceived as highly significant by patients receiving chemotherapy, while the use of wig enhances body image, interpersonal relationships and better quality of life.

eP495

QUALITY OF LIFE AMONG LOWER-INCOME CAREGIVERS OF LUNG CANCER PATIENTS IN INDIA: A SINGLE-INSTITUTIONAL EXPERIENCE

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Introduction

Quality of life (QOL) among caregivers of cancer patients is often diminished. Lower-income caregivers in the developing world may face greater difficulty. We sought to evaluate QOL among caregivers of lung cancer patients undergoing management at a public referral center in Delhi, India.

Methods

We administered a Hindi-version of the Caregiver Quality of Life Cancer (CQOLC) Index to 100 regular caregivers of patients with advanced lung cancer. Mean CQOLC scores were correlated with baseline demographics using *t* tests and ANOVA for 3 or more variables. Scores were required to differ by at least 0.5 standard deviations in magnitude to confirm clinically meaningful difference (CMD). Individual items leading to the greatest impact on overall scores were identified.

Results

A majority (56%) of surveyed caregivers were over 40 years of age. The median annual income per capita was 24038.5 rupees, which is equivalent to $369.82 US. Worse CQOLC index scores were found for female caregivers ($p = 0.02$), caregivers who had provided care for more than 4 months ($p = 0.001$), and caregivers who had completed less than a 12th standard of education ($p = 0.05$). A CMD was observed for those who provided care for more than 4 months. The three individual items that contributed most to overall scores were related to positive adaptation.

Conclusions

Lower-income cancer caregivers in the developing world suffer deterioration in QOL. Psychological resilience is commonly reduced. Resourceful interventions designed to improve QOL among women, the lesser-educated, and those providing care for longer durations of time are warranted.

eP496

ONLINE SUPPORT FOR PATIENTS ON CHEMOTHERAPY USING ART-THERAPEUTIC METHOD NEUROGRAPHICA

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Introduction

The quality of life during chemotherapy decreases. Furthermore, it is important to patients to have a high quality of life. Patients have stress because of side effects of treatment, experiences associated with the expected outcome of treatment and an increased need for the support of loved ones. In this regard, there is a big challenge to help them to cope with a sharp increase in stress levels.

Methods

Art therapy has a noticeable positive effect. It was decided to use the new method of art therapy proposed by P. Piskarev, neurographica. Neurographica has a clear algorithm that consistently includes different levels of functions, according to the expressive therapies continuum by V.Lusebrink. One month program of 4 thematic sessions was developed and realised online.

Results

The classes were conducted online, in order to test the methodology for use in the conditions of a lack of psychological assistance to cancer patients during the medical treatment in Russia. As a result, it can be concluded that the quality of life in patients is increased by improving the general physical condition, role-playing, reducing the symptoms of nausea, sleep disorders, weakness, shortness of breath.

Conclusions

Neurographica allows in a short time to reduce the level of stress and to create the desired image of a healthy state, which is firmly fixed, forming a new unconscious dominant, according to Ukhtomsky's theory. Neurographica special program can be conducted by onco-psychologists trained in neurographica, as well as neurographica's specialists with minimal training in cancer patients support.

eP497

DEVELOPING PRECISION SUPPORTIVE CARE IN CANCER USING PATIENT REPORTED OUTCOMES (PROS)

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Introduction

We examined routinely collected PROs (Edmonton Symptom Assessment System (ESAS) and psychosocial needs) to determine symptom severity, and their predictors.

Methods

A population-based cohort in Alberta, Canada that completed PROs within +/- 60 days of diagnosis. Patients were divided into: breast (Br), lung (L), colorectal (CR), prostate (Pr), hematology (H), and others (O). Logistic and linear regression were used to evaluate predictors.

Results

We included 1310 cancer patients: 19% Br, 24% L,11% CRC, 8% Pr,12% H, and 26% O with equal numbers of early versus advanced stages. Median age was 65 and 56% had >/=1 comorbidity. Mean physical (14.8/60) and psychological ESAS sub-scores (4.5/20) were low, but symptom prevalence was high with up to 90% of patients experiencing some fatigue and >50% facing some anxiety, depression, or poor wellbeing. Physical, emotional, and informational needs were prevalent. Across tumor types, there were differences in symptom severity and prevalence, and in psychosocial needs. Predictors of moderate to severe fatigue included pain (OR 1.3), comorbidity (OR 1.2) or poor wellbeing (OR 1.3), while having Pr (OR 0.4) or Br (OR 0.5) cancers were protective (all $p < 0.05$). Predictors of high ESAS physical sub-score included comorbidity ($\beta=0.1$), psychosocial needs ($\beta=0.2$), advanced stage ($\beta=0.1$), psychological symptoms ($\beta=0.4$) or L ($\beta=0.2$), H ($\beta=0.1$), or O ($\beta=0.2$) cancers (all $p < 0.01$). Predictors of high ESAS psychological sub-score included psychosocial needs ($\beta=0.2$), female ($\beta=0.1$), or physical symptoms ($\beta=0.4$) (all $p < 0.001$).

Conclusions

Differences across tumor types underscore that designing tumor-specific interventions can inform precision supportive care.

eP498

IMPACT OF HURRICANE HARVEY ON ANXIETY, DEPRESSION AND DISTRESS IN CANCER PATIENTS

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Introduction
Psychological stress after any natural disaster is intense. Cancer patients may experience more stress as they fear uncertainty of medical care and social support. The purpose of this study was to evaluate the psychological impact of Hurricane Harvey on mood symptoms in cancer patients.
Methods
Adult patients seen in the MDACC outpatient psychiatric- oncology clinic (September 5, 2017-January 5, 2018) were included. The primary cohort included individuals who received an ICD code diagnosis for hurricane related stress. Comparative groups were contacted by phone and consented to participate in this study by answering two Yes/No questions about "being impacted by the hurricane", and whether they "experienced stress during this period". Depression was assessed using the PHQ-9 (scale 0-27), anxiety was assessed using the GAD-7 (scale 0-21), and distress was assessed using the NCCN distress thermometer (scale 0-10). Data are presented as mean±S.D.
Results
The study consisted of 3 groups: Hurricane diagnosis (Hd; N=28), Hurricane Self-Report (Hsr; N=25), No Hurricane Controls (NoHsr; N=15). There were no significant differences among groups according to age, sex, race or ethnicity. As compared to patients in the NoHsr group, patients in Hd and Hsr groups reported significantly higher levels of depression ($F2,65=4.2$, $p=.02$), anxiety ($F2,65=3.7$, $p=.03$) and distress ($F2,65=6.1$, $p=.004$).
Conclusions
The current data shows that cancer patients who had a hurricane diagnosis or self-reported hurricane related stress exhibited significantly higher levels of depression, anxiety and distress as compared to controls (self-report no impact and no stress). The data confirms the impact of natural disasters on mood symptoms.

eP499

A SMARTPHONE SELF-MANAGEMENT PROGRAM TO SUPPORT ORAL CHEMOTHERAPY ADHERENCE IN YOUNG AND ADULT CANCER PATIENTS: DESIGN AND DEVELOPMENT

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Introduction
Cancer patients are responsible for self-administering oral chemotherapy under limited hospital monitoring but adherence rates can be as low as 16%. Mobile phone-based interventions seem to increase medication adherence in other chronic diseases, but more evidence on whether these types of interventions support oral chemotherapy adherence is needed. Findings from the research-based process of development of a novel intervention are described.
Methods
The design process consisted of an extensive literature review of the main reasons for oral chemotherapy non-adherence, a scoping review to examine what was known about available oral chemotherapy adherence-enhancing interventions delivered via mobile phones, semi-structured interviews with 9 oral chemotherapy users (ages 20 to 71 y/o) to explore their preferences on the structure of the self-management program and collection of information from oncology health professionals (clinicians, nurses and pharmacists). The intervention design follows Darlow and Wen's 8 best practices for developing mobile health interventions.
Results
Main reasons for oral chemotherapy non-adherence were identified: side-effects, forgetfulness and poor treatment knowledge. The scoping review highlighted high acceptability and satisfaction with the available mobile phone-based interventions as well as the relevance of using a design framework, including end users engagement. Findings from the qualitative study and information collected from health professionals informed the structure of the program (e.g. timing, content, delivery methods).
Conclusions
The developmental process of the self-management program can be used as guide in the design of future medication-adherence mobile health interventions in cancer and other chronic diseases. A proof-of-concept study will follow the development phase.

eP500

A QUESTIONNAIRE SURVEY FOR PSYCHOSOCIAL EFFECTS OF APPEARANCE CHANGES DUE TO CANCER TREATMENT AND NEEDS FOR INFORMATION AND SUPPORTIVE CARE IN JAPANESE CANCER PATIENTS

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Introduction
This study aimed to quantitatively assess distress and difficulties related to appearance concerns in Japanese cancer patients using the Derriford Appearance Scale 59 (DAS59) and to reveal patients' information needs and care needs related to appearance.
Methods
We conducted a questionnaire survey using the DAS59 among cancer patients with a prior history of chemotherapy, molecular targeted therapy, or immunotherapy, who were recruited from the Kindai University Hospital.
Results
Responses from 114 patients were included in final analysis. Participants were patients with a mean age of 62.9 years; 70.2% were female, 86.0% had metastatic or locally advanced unresectable cancer. Among participants, 78.1% had concerns about some aspect of their appearance. Mean DAS59 full-scale score was 77.7±36.4. Younger and female participants had higher full-scale scores in univariate analysis ($p<0.05$ for both), and younger participants were found to have higher full-scale scores in multivariate analysis ($p<0.05$). The most frequently selected response about information needs was "explanation from doctor about appearance changes before starting treatment." When appearance changes occur, those who wanted support from doctors and those who wanted support from nurses were about the same proportion.
Conclusions
Young and female patients tended to have high full-scale scores of DAS59. Healthcare providers need to be aware of the potential psychosocial impact of appearance changes due to cancer treatment and provide basic information regarding appearance changes to all patients before initiating cancer treatment and care when appearance change actually occur. Because the amount of information and care to provide is large, a multidisciplinary approach is required.

eP501

PSYCHOSOCIAL SUPPORT FOR ADOLESCENT AND YOUNG ADULT PATIENTS WITH CANCER – A CLINICAL PRACTICE GUIDELINE

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Introduction

Cancer is a severe and acute life-threatening disease with long-term multimodal treatments. Adolescent and young adult (AYA) with cancer are in a vulnerable phase in life, experiencing psychological stress both as an individual and family. Thus, it is necessary to raise awareness to the young patient special psychosocial needs and to increase their psychological outcomes and quality of life. The aim was to develop an evidence-based guideline to ensure a comprehensive and structured psychosocial follow-up throughout the cancer trajectory.

Methods

The guideline development group consisted of a multidisciplinary team of health providers and three AYA patient representatives. A systematic literature search was made to identify the evidence. Relevant literature was read and critically evaluated by using checklists from The Critical Appraisals Skills Program. The findings were discussed with stakeholders before making recommendations from the evidence. Finally, the draft was sent to clinicians for comments that were processed before the guideline was completed

Results

The work resulted in a clinical guideline consisting of seven documents:
1. Psychosocial support for AYA patients with cancer
2. Checklists with interventions for each stage of the patient pathway
3. Interdisciplinary meetings
4. Network Meetings and supervisory group
5. Communication with young patients
6. Rights and support for AYA patients
7. Rehabilitation plan

Conclusions

Based on the evidence we recommend that clinicians use the clinical guideline in a structured manner. We hope that the guideline will improve the psychological outcomes for the AYAs and their families.

eP502

PATIENT QUALITY OF LIFE AND CAREGIVER LEVEL OF BURDEN IN AN OUTPATIENT CHEMOTHERAPY CENTRE IN SINGAPORE

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Introduction

The purpose of this study was to evaluate quality of life (QoL) of patients undergoing chemotherapy; and the level of burden and self-efficacy of their caregivers.

Assessments of psychosocial constructs have not been part of the standard care protocol in the local clinical context. The lack of systematic communication between healthcare professionals, and patients and their caregivers relating to these outcomes would lead to these being unaddressed.

Methods

A cross-sectional study was conducted in an outpatient cancer centre in Singapore. 92 patients diagnosed with cancer and undergoing chemotherapy; and 92 caregivers of the patients were recruited. Questionnaire administered to patients include the Functional Assessment of Cancer Therapy – General. Questionnaires administered to caregivers included the Zarit Burden Interview and General Self-efficacy Scale.

Results

39% of patients reported that they were at least "somewhat" bothered by side effects of treatment, and 75% indicated some degree of being worried that their condition may get worse. 60% of patients chose not to comment on their sex life.

There was significant difference in caregiver burden across caregivers' gender, age group, education levels, and relationship to patient. 20% reported that they at least "sometimes" felt strained. 61% reported that they felt they should be doing more, and 65% felt they could do a better job. More than 75% of caregivers reported high levels of self-efficacy.

Conclusions

These findings can help guide educational and psychosocial support interventions by healthcare professionals, in the aim of helping patients and caregivers adapt to lifestyle changes, enhance their coping, and improve QoL.

eP503

VALIDATION OF THE COMPREHENSIVE NEEDS ASSESSMENT TOOL (CNAT) IN PATIENTS WITH ADVANCED CANCER

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Introduction

The 59-item Comprehensive Needs Assessment Tool (CNAT) for cancer patients is an English language survey for needs assessment developed and validated in South Korean cancer patients. The objective of this study was to validate the English version of CNAT in advanced cancer patients in Singapore.

Methods

Cross-sectional survey: advanced cancer patients completed the CNAT in English. Confirmatory factor analysis was used to assess construct validity. For known groups validity, independent samples t-test was used to compare CNAT scores based on Karnofsky performance status and outpatient versus inpatient setting. Cronbach's alpha was used to measure internal consistency.

Results

Among the 328 advanced cancer patients recruited, the mean age was 59.6 years and 49.1% were male. Majority (68.0%) were Chinese, 20.4% were Malay, 7.9% were Indian and 3.7% were of other ethnicities. The 7-factor model previously established in Korea showed sufficient construct validity with Root Mean Square Error of Approximation 0.037 and Comparative Fit Index 0.944. All 59 items had a factor loading ≥0.5. Group invariance test showed no difference in pattern of factor loadings between ethnic Chinese and other ethnic groups (P=0.155). For known groups validity, there were significant differences in CNAT scores by performance status and outpatient versus inpatient setting. The CNAT total and factor scores showed good internal consistency with Cronbach's alpha of between 0.80 and 0.937.

Conclusions

The CNAT showed construct and known-group validity and internal consistency in our study sample and can be used to assess the level of unmet needs for advanced cancer patients in the Singapore context.

eP504

LONGITUDINAL ASSOCIATION OF DEPRESSION WITH NEOADJUVANT CHEMOTHERAPY INDUCED NAUSEA AND VOMITING IN THE FOLLOWING CYCLES IN BREAST CANCER PATIENTS

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Introduction
Chemotherapy-induced nausea and vomiting (CINV) has been commonly reported as a major adverse effect. Anthracycline-based regimen as the neoadjuvant chemotherapy is a high risk of emesis. We previously reported that late chronotype could be associated with development of CINV after initial cycle of chemotherapy. However, the factors associated with CINV in following cycles remain unclear.
Methods
In this single-institution, prospective, observational study conducted, we analyzed women with breast cancer treated with neoadjuvant chemotherapy. Candidate factors associated with CINV were assessed using the Munich Chronotype Questionnaire before initial cycle of chemotherapy, and Pittsburgh Sleep Quality Index and Hospital Anxiety and Depression Scale before 2nd cycle. CINV was assessed by using the Multinational Association of Supportive Care in Cancer Antiemesis Tool before each cycle of chemotherapy. CINV in following cycles was defined as CINV occurring after 2nd cycle and 3rd cycle repeatedly.
Results
Among 192 participants, 108 (56.3%) experienced CINV after 2nd cycle and 98 (51.0%) experienced CINV after 3rd cycle. And 85 (44.3%) experienced CINV in both following cycles. In the univariate analyses, CINV in following cycles was significantly associated with depression (odds ratio [OR], 2.50; p= 0.006) and CINV after initial cycle (OR, 6.69; p<0.001). Morning chronotypes (OR, 1.95; p=0.077) was marginally associated with CINV in following cycles. In the multivariate analyses, depression (OR, 2.22; 95% CI, p= 0.039) and CINV after initial cycle (OR, 6.72; p<0.001) remained significantly associated with CINV in following cycles.
Conclusions
These data suggest that clinicians need to assess and consider depression in the management of CINV.

eP505
FEAR OF CANCER RECURRENCE IN BREAST CANCER SURVIVORS

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Introduction
Despite of development of cancer screening and treatment, the recurrence rates of breast cancer is still high and lots of breast cancer survivors have fear of cancer recurrence (FCR). The purpose of this study was to develop a middle-range theory for explaining the factors related to FCR and the outcomes of FCR in breast cancer survivors.
Methods
This study used theory synthesis by Walker and Avant (2011); 1) specify focal concepts, 2) identify related factors and relationships and 3) construct an integrated representation. Firstly, FCR was defined as the fear about cancer returning or progressing. Secondly, the literatures published until November, 2016 were searched in PubMed, CINAHL, Web of Science and RISS. A total of 14 articles were selected. Finally, the factors related to FCR and the outcomes of FCR were categorized to make relational statements and hypothetical model was provided.
Results
Factors related to FCR were categorized controllable (psychosocial characteristics; anxiety, perceived risk, stress, disease perception, self-efficacy, social support) and uncontrollable (demographic characteristics; age, race, children, level of education / disease-related characteristics; length of diagnosis, stages, cancer screening, genetic predisposition, radiotherapy) ones. FCR led to positive (increase in cancer screening, use of supportive groups, and cognitive coping strategy) and negative (uncertainty, decrease in exercise, increase in attention bias for the words for cancer, functional impairment, unnecessary uses of medical services and self-accusing adaptation) outcomes.
Conclusions
The intervention to manage FCR should be developed, and the hypothetical model of this study should be revised and confirmed through empirical researches.

eP506
THE EFFECT OF SOCIAL SUPPORT OF FAMILY, FRIENDS, AND SPOUSE ON CHEMOTHERAPY RELATED SYMPTOMS OF BREAST CANCER PATIENTS

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Introduction
Social support is important in cancer treatment process. However, there are no studies on the effect of chemotherapy related symptoms according to the perceived social support (PSS) of the patient's family, friends, and spouse clinically. We examined the effect of PSS on chemotherapy related symptoms in family, friends, and spouses of patient with breast cancer.
Methods
This study is a prospective, observational study that periodically assessed chemotherapy related symptoms from the time of diagnosis of breast cancer to 6 months after the end of neoadjuvant chemotherapy. In 184 patients with breast cancer, Multidimensional Scale of perceived social support(MSPSS) subscale(family, friends, and spouses) was assessed before the first neoadjuvant chemotherapy, and M.D. Anderson Symptom Inventory(MDASI) was assessed 8 times before neoadjuvant chemotherapy. The MSPSS subscale scores were divided into the MSPSS low, moderate, and high group. The MDASI subscale score was analyzed by linear mixed model to determine the difference between the two groups until the end of the chemotherapy.
Results
In the MSPSS subscale family; insomnia (p<0.001), MSPSS subscale friend; nausea (p = 0.019), insomnia (p <0.001), distress and numbness (p = 0.007), MSPSS subscale significant others; insomnia (p <0.001) and sadness (p = 0.048) were higher in the low level of MSPSS subscale group than in the moderate to high level of MSPSS subscale group respectively.
Conclusions
In chemotherapy related symptoms, PSS related to friends showed more tolerable symptom than PSS related to family or significant others (spouse). Future research needs to be done on the effects of PSS on chemotherapy related symptoms.

eP507
EXISTENTIAL DISTRESS IN TERMINALLY ILL CANCER PATIENTS: A CONCEPT ANALYSIS

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Introduction
Existential distress in cancer patients is a vague but widely used concept in the medical field. However, there is no consensus on the concept of existential distress. The lack of a recognized conceptual framework may hinder further research further studies on existential distress.
Methods
The Walker and Avant's concept analysis approach was applied. Literature searches were conducted using PsycARTICLES, Cochrane, PubMed, EMBASE, Medline, CINAHL, China National Knowledge Infrastructure, China Science and Technology Journal Database and WanFang Data Knowledge Service Platform with a timeline from the establishment of the database to June 1, 2018.
Results
The analysis demonstrates that the concept of existential distress in cancer patients has four core attributes: (a) meaninglessness, (b) loss of autonomy,(c) lowered self-esteem, (d) hopelessness. Existential distress is a key factor that causes cancer patients to reduce the quality of life, adjustment and emotional state of cancer patients, and even end life prematurely. Its recognition is often underpinned by pain, serious psychological morbidity, lack of meaning for current life and future, the ability to fight problems of survival diminished.
Conclusions
This concept analysis may be used as a basis to advance understandings of the theoretical structures, meanwhile not only contributes to the development of research and practice, but also improves the mental health of patients.

eP508
EVALUATION OF A WECHAT-BASED LIFE REVIEW PROGRAM FOR CANCER PATIENTS:A QUASI-EXPERIMENTAL STUDY

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Introduction
Life review is effective in improving the psychospiritual well-being of palliative patients. However, traditional life review programs are limitedly applied in clinical practice.
Methods
This was a non-concurrent controlled quasi-experimental design study. 92 cancer patients were recruited from April 2017 to February 2018, with 44 patients in the control group receiving routine care and 48 in the experimental group receiving a six-week WeChat-based life review program(WBLRP) plus routine care. The WBLRP consisted of four-section e-life review interviews and four life review modules. The interviews covered each participant's entire life, including the present (cancer experience), adulthood, childhood and adolescence, and a summary of their life. The life review modules included Memory Prompts, Review Extraction, Mind Space, and E-legacy products. Compliance with the program, difficulty in participation, satisfaction with the program, anxiety, depression, self-transcendence, meaning in life and hope were measured.
Results
All experimental participants who completed the program used the WeChat platform. 39 participants had no difficulties in operating the platform, and 40 were satisfied with the program. Statistically significant effects were identified on anxiety, depression, and self-transcendence. An increase in the levels of meaning in life and hope was observed in the experimental group after the program.
Conclusions
The innovative WeChat-based life review program is a promising non-pharmacological intervention in improving psycho-spiritual well-being of cancer patients. It provides an alternative approach to deliver psychological interventions for cancer patients in community.

eP509
STEPPED CARE TARGETING PSYCHOLOGICAL DISTRESS IN HEAD AND NECK CANCER AND LUNG CANCER PATIENTS: WHICH GROUPS SPECIFICALLY BENEFIT? SECONDARY ANALYSES OF A RANDOMIZED CONTROLLED TRIAL

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Introduction
Stepped care (SC), consisting of watchful waiting, guided self-help, problem-solving therapy and psychotherapy/medication is, compared to care-as-usual (CAU), effective in improving psychological distress. This study presents secondary analyses on subgroups of patients who might specifically benefit from watchful waiting, guided self-help, or the entire SC program.
Methods
In this randomized controlled trial, head and neck and lung cancer patients with distress (n=156) were randomized to SC or CAU. Univariate logistic regression analyses were performed to investigate baseline factors associated with recovery after watchful waiting and guided self-help. Potential moderators of the effectiveness of SC compared to CAU were investigated using linear mixed models.
Results
Patients without a psychiatric disorder, with better psychological outcomes (HADS: all scales) and better health-related quality of life (HRQOL) (EORTC QLQ-C30/H&N35: global QOL, all functioning and several symptom domains) were more likely to recover after watchful waiting. Patients with better scores on distress, emotional functioning, and dyspnea were more likely to recover after guided self-help. Sex, time since treatment, anxiety or depressive disorder diagnosis, symptoms of anxiety, symptoms of depression, speech problems and feeling ill at baseline moderated the efficacy of SC compared to CAU.
Conclusions
Patients with distress but who are relatively doing well otherwise, benefit most from watchful waiting and guided self-help. The entire SC program is more effective in women, patients in the first year after treatment, patients with a higher level of distress or anxiety or depressive disorder, patients who are feeling ill, and patients with less speech problems.

eP510
STIGMA PERCEPTION AMONG WOMEN WITH OVARIAN CANCER: A QUALITATIVE STUDY

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Introduction
The aim of this study was to explore experiences and stigma perception of women with ovarian cancer.

Methods
A qualitative research was conducted at a private university hospital in Ankara, Turkey. A purposeful sampling was applied until data saturation was reached and 16 women with ovarian cancer were included. Five semi-structured questions on meaning of cancer diagnosis, how the diagnosis and treatment effected their lives and feelings including experiences of stigma were guided to the interview. Each interview was lasted about 20–40 min, audio-taped, transcribed verbatim and analysed thematically.
Results
Participants were aged 46-80 years, mean duration of diagnosis was 3 years (range 1-12). Main themes emerged from data were '*fear, sadness/inability to speak feelings, influence of life, guilt and struggle*'. Under the theme of fear; *'dependence on others, pain / suffering, fear of death, metastasis / progression of the disease'* were presented. '*Unable to do things due to fatigue, protective approaches at home, inability to meet with friends, lack of desire to do anything because of having cancer'* were grouped under influence of life theme. The theme of guilt was presented as '*being late in diagnosis and not paying attention to their health*'. The sub-themes for struggle were *'strong belief, trusting to doctor and believing to be healed*'.
Conclusions
The expressions of fear of death related to the disease and their unwillingness to receive social support suggest that internal stigma exists in these patients.

eP511
E-HEALTH SELF-MANAGEMENT APPLICATIONS TARGETING CANCER SURVIVORS – WHO DO WE REACH?

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Introduction
Oncokompas is an eHealth self-management application to monitor health-related quality of life (HRQOL) and to provide personalized information on HRQOL and supportive care. We used the RE-AIM framework to investigate the Reach, Effectiveness, Adoption, Implementation, and Maintenance of Oncokompas. The aim of this cross-sectional study was to investigate the reach.
Methods
Cancer survivors (breast, colorectal, head and neck cancer, lymphoma) treated with curative intent 3 months to 5 years earlier were invited to complete a survey on HRQOL and supportive care. Eligible survivors (those with internet and email) were invited to participate in a randomized controlled trial (RCT) evaluating the (cost-)effectiveness of Oncokompas. Reach was based on eligibility and participation. Multivariable logistic regression analyses were performed to identify factors associated with eligibility and participation.
Results
Of the 655 respondents, 444 had internet and email (eligibility rate 68%). Survivors who were male, younger, had lymphoma, lower level of unmet supportive care needs, higher fighting spirit, and higher health literacy were more likely to be eligible. Of the 444 eligible respondents, 201 agreed to participate (participation rate 45%). Higher education, more unmet sexual supportive care needs, higher belief in control of their health by powerful others, and higher fighting spirit were associated with participation.
Conclusions
Among cancer survivors, the reach of eHealth in general (estimated on 68%) and Oncokompas in particular (estimated on 45% among eligible survivors) is associated with several socio-demographic, clinical, and personal factors. These findings contribute to tailored strategies for implementation of eHealth applications among cancer survivors.

eP512
ARE THERE RESILIENCE RESOURCES THAT CAN BE HARNESSED TO MANAGE PSYCHOLOGICAL DISTRESS IN SPANISH-SPEAKING LATINAS WITH BREAST CANCER?

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Introduction
Latina breast cancer survivors are at higher risk of psychological distress than their white counterparts. We examined associations of intrapersonal and interpersonal resilience resources with psychological distress among Spanish-speaking Latinas with breast cancer.
Methods
Analyses used baseline data from a RCT study of a stress management intervention among 151 Latinas with non-metastatic breast cancer. Outcome measures were health distress and anxiety. Intrapersonal resources included spirituality (meaning/peace), stress management skills (assertiveness, coping confidence with general problems), and cancer self-efficacy (patient activation, positive attitude and coping with breast cancer treatment). Interpersonal resources were social support (emotional, tangible) and neighborhood cohesion. Linear regression analyses examined bivariate and multivariate associations of resources with health distress and anxiety. Resources associated with outcomes at p<.20 in bivariate models were included in multivariate models. Final models regressed each outcome on remaining resources, controlling for education, marital status, cancer stage, surgery type, and treatment.
Results
Self-efficacy for coping with breast cancer treatment was associated independently and inversely with both health distress ($p<0.05$) and anxiety ($p<0.05$). Coping confidence with general problems ($p<0.05$) and having a sense of neighborhood cohesion ($p<0.05$) were associated independently and inversely with health distress. Feeling a sense of peace ($p<0.05$) and having tangible social support ($p<0.05$) were associated independently and inversely with anxiety.
Conclusions
Interventions that enhance self-efficacy in coping with problems and managing cancer side effects, and that foster skills to identify sources of support or a sense of peace may decrease feelings of psychological distress for Latinas with breast cancer.

eP513
DECISION QUALITY AND FEAR OF RECURRENCE IN BREAST CANCER PATIENTS

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Introduction
Informed consent is an essential ethical and legal procedure in medical practice. However, recent studies highlight discrepancies between patients' need of complete and correct information and their desire to autonomously choose their treatment. Quality decision-making regarding treatment options impacts patients' health and resilience. The paternalistic approach towards patients is still prevalent in Romanian medical system. The present study aims to assess decision quality regarding cancer treatment in relationship to fear of recurrence in Romanian breast cancer patients.

Methods
73 patients with early stage breast cancer took part in the study. 43 patients underwent radical mastectomy and 30 had lumpectomy.
Results
Patients' answers show strong ambivalence regarding their decision even in post-treatment phase. Only one patient answered correctly all five questions assessing their knowledge about treatment and survival rates. 43% of women who underwent conservative surgery and 63% of mastectomy patients report no health care provider discussed with them about the other surgery option. Better informed patients worry less about cancer related death. However, patients with higher fear of recurrence discussed more about treatment options with their health care providers.
Conclusions
Our results indicate breast cancer patients are poorly informed about their treatment options. They show limited knowledge about surgery consequences and survival rates. Implications on post-treatment adjustment and resilience are discussed.

eP514
PHYSIOLOGICAL STRESS AND ILLNESS PERCEPTION IN BREAST CANCER PATIENTS

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Introduction
Psychosocial factors have become central concepts in oncology research since distress and quality of life have been called the sixth vital sign. However, the role of psychosocial factors in the prognosis of the disease is not yet well established. The results of studies on this issue are contradictory. We examined the relationship between psychosocial factors, stress hormones and inflammatory markers in breast cancer patients using 12 months longitudinal data.
Methods
Patients with stage I to III breast cancer (N=70) were assessed longitudinally, over a period of 12 months. They completed scales to measure quality of life and illness perception. Blood and urine samples were obtained to measure stress hormones (cortisol and ACTH) and inflammatory markers (CRP, ESR and fibrinogen).
Results
Patients who consider their illness to be chronical, unpredictable, with important negative consequences over their lives, report a lower quality of life. Patients who perceive their illness to be unpredictable and those who trust their treatment will help control its evolution, have a higher ESR at baseline and higher fibrinogen values one year later. Women who report a higher personal control over their illness, have higher levels of urinary free cortisol at baseline. No other significant relationships were found between psychosocial factors and inflammatory markers.
Conclusions
Illness perception factors show consistent high associations to reported quality of life. However, physiological measures show weaker, inconsistent relationships to psychosocial factors.
Acknowledgement: This work was supported by a grant of the "Alexandru Ioan Cuza" University of Iasi, within the Research Grants program, Grant UAIC, code GI-UAIC-2018-08

eP515
WHAT PREDICTS THE PUBLIC'S PERCEPTIONS OF CANCER SUPPORTIVE CARE?

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Introduction
Services designed to provide wide-ranging support to people diagnosed with cancer are increasingly available. Despite enhancement of the quality and quantity of these services, many cancer survivors are not aware of, or do not use, them. This may reflect poor knowledge or understanding of the importance of support that extends beyond disease treatment, both in the targeted population and in the community generally.
Methods
369 participants (221 females), aged 18-90 (M=40.1, SD=17.1) were recruited for an online survey. Measures included Awareness of Cancer Supportive Care, the Internal Locus of Control Scale (LoC), Health Self-efficacy (HSE), Attitude to Seeking Psychological Professional Help (ATSPPH), and the Perceived Importance of Supportive Cancer Care (0-100 analogue scale). Participants also rated the level of responsibility for supportive care of a number of different groups.
Results
Most participants were somewhat or very aware of supportive care services (64.8%) and indicated that they were important (M=74.4, SD=16.0). Support for emotional issues was rated most important (M=81.6). Support for each domain correlated positively with ATSPPH (p's<.01), and negatively with HSE, but was not associated with LoC. The impact of HSE was reduced to non-significance in regressions. Perceived responsibility for the provision of help differed in each domain, although the patient and their family/friends were deemed uniformly responsible.
Conclusions
The public hold positive views about the provision of supportive cancer care. Strategies for breaking down barriers to mental health support seeking may improve use of services. Attribution of responsibility may help explain reluctance to seek support.

eP516
PREOPERATIVE ANXIETY IN PATIENTS UNDERGOING OUTPATIENT CANCER SURGERY

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Introduction
Many types of cancer surgeries are almost entirely performed on an outpatient basis. As the number of outpatient surgeries increase there is less time for health care providers to support the anxiety of the peri-operative cancer patient, leaving a gap in our understanding about the impact of these anxieties on recovery.
The purpose of this study is to explore the prevalence of preoperative anxiety in patients undergoing outpatient cancer surgery and whether there is an association between preoperative anxiety and postoperative patient outcomes.
Methods
We conducted a retrospective cohort study to investigate the prevalence of preoperative anxiety and association with postoperative outcomes in patients undergoing outpatient cancer surgery. The analysis included 8,665 patients undergoing procedures at an outpatient facility over 16 months; 16.7% had preoperative anxiety. A multivariable logistic regression model was created to examine the association between preoperative anxiety and postoperative outcomes.
Results
In patients with preoperative anxiety, higher rates of adverse outcomes were seen, including PONV (adjusted difference 1.8%, 95% CI 0.12%, 3.4%, p=0.029), UCC visits within 30 days (adjusted difference 1.5%,

95% CI 0.44%, 2.6%, p=0.002) and readmissions within 30 days (adjusted difference 0.97%, 95% CI 0.13%, 1.8%, p=0.008).

Conclusions

Even assuming a causal relationship between preoperative anxiety and post-operative outcomes, preventing one instance of PONV would requiring treating 30 patients for anxiety, and preventing longer-term outcomes such as readmissions within 30 days would require treating even larger numbers of patients. Future studies should attempt to elucidate the causal pathway between preoperative anxiety and postoperative outcomes.

eP517

HEARING PATIENTS' CHILDREN: A SYSTEMATIC REVIEW OF THE CURRENT INTERVENTIONS FOR CHILDREN LIVING WITH PARENTAL CANCER

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Introduction

Children living with parental cancer are vulnerable to distress and developmental disruption. However, little 'voice' has been ascribed to patients' children, particularly regarding current intervention efficacy, with much of the research focusing on parent's perspectives. This review aimed to identify current interventions available for patients' children and summarise how children have responded to these.

Methods

Informed by the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines and Cochrane guidelines, a broad search strategy was conducted between 25 May 2015 and 6 August 2018. 7 databases were searched, and grey literature was also vetted.

Results

Twelve papers of varying design and quality which evaluated 8 interventions, were retained for analysis. Due to this heterogeneity, methods of narrative synthesis were employed to combine results. Five key themes were identified across qualitative outcomes, including reduced isolation, improved sense of normalcy, and enhanced communication. Quantitative results were less consistent. Results from a small number of studies suggested that current interventions can improve PTSD symptoms and depression. However, interventions are yet to demonstrate success at ameliorating other symptoms, particularly those of anxiety.

Conclusions

Findings indicate a growing body of research that is yet to sufficiently meet the methodological rigour, theoretical guidance, and reporting quality necessary to confidently interpret research results. Qualitative feedback suggests interventions are positively received by children, while quantitative results are yet to demonstrate efficacy. This review highlights the potential for further investigation regarding how children respond to their parent's cancer, and the possibility of conceptualising this in a theoretical model.

eP518

A QUALITATIVE SYSTEMATIC REVIEW EXPLORING SPIRITUALITY PERCEPTION AND EXPERIENCES OF CANCER PATIENTS

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Introduction

Understanding the roles and contexts of spirituality among patients with cancer allows us to develop better supportive care. The aim of the systematic review is to determine spirituality perception and experiences of cancer patients from qualitative studies**.**

Methods

Electronic databases (EBSCOhost, PubMed and WOS) were used for searching the studies with the following key words "spirituality", "cancer patient" and "qualitative study". The methodology used for this systematic review was based on the Preferred Reporting Items for Systematic Reviews and Meta-analyses (PRISMA) guidelines. Identified publications were screened by using the following inclusion criteria; qualitative studies and English language, full text journals, published in last 10 years. Reviews, conference abstracts, letters to the editor were excluded.

Results

The initial search identified 89 articles and 13 studies met eligibility criteria. Majority of the studies were from USA (4) and Iran (4) rest of them were from UK, Taiwan, Thailand, Brazil, Canada, New Zealand and China. In most of the studies semi-structured interview were used while self-report questionnaires were used in two studies. Participants in these studies were breast cancer (3), advanced cancer (3), brain tumors (2), HSCT patients/survivors (2), colorectal cancer and mix group of cancer patients. In most studies, spirituality was identified as religious beliefs and relation with god. In one study, patient felt receiving specialized spiritual care would have a positive effect.

Conclusions

Main focus of the studies was meaning of the spirituality, as a coping mechanism and spiritual care/support needs.

eP519

HOW ARE CHILDREN IMPACTED BY A PARENT'S DIAGNOSIS OF CANCER?: QUALITATIVE INTERVIEWS WITH ONCOLOGY HEALTH PROFESSIONALS, PARENTS, AND CHILDREN

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Introduction

Living with parental cancer can have a profound and ongoing impact on a developing child, rendering them vulnerable to a host of internalising and externalising problems. However, literature and clinical practise remain uncertain regarding how children are affected and how to support them. Past studies have relied on adult reports, thus missing crucial pieces of information only children can provide. From a multi-informant perspective that includes children, this study aimed to unpack how children are impacted by their parent's cancer diagnosis.

Methods

Semi-structured interviews were conducted with key informants, including health professionals (n = 12), parents (n = 10), and children (5 – 17 yrs, n = 11). Informed by guidelines outlined by Braun and Clarke (2006) and Pope and Mays (2006), thematic analysis was performed to identify preliminary themes. NVivo 12 Pro software was used to facilitate data organisation and analysis.

Results

Preliminary findings indicate several consistent themes across informants. For HPs, themes included accessibility, knowledge and expertise of children, pre-existing challenges, and recommendations. For parents, themes included coping, support networks, protecting, knowledge, and awareness. For children, themes included coping strategies, comprehending, support networks, communication, family dynamics, and lifestyle changes.

Conclusions

These preliminary findings demonstrate the impact that a cancer diagnosis can have on children. Our findings also highlight the difficulties and challenges regarding providing support to these children. There appears to be scope for the development of a model which conceptualises the complex nature of how children are impacted by their parent's cancer, to further inform research and future intervention development.

eP520

PERSPECTIVES OF LGBT CANCER PATIENTS AND THEIR CAREGIVERS REGARDING SEXUAL ORIENTATION AND GENDER IDENTITY DISCLOSURE

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Introduction
Cancer care guidelines from national and international organizations highlight that competent care for sexual and gender minority (SGM) patients should involve: 1) helping patients feel safe disclosing their sexual orientation and gender identity (SOGI) and 2) including SGM patients' caregivers in care. While organizations have addressed these recommendations by including SOGI in electronic health records and training providers, it is unclear whether these efforts have improved the experience of SGM patients and caregivers.
Methods
We conducted in-depth semi-structured qualitative interviews with 24 SGM patients seeking cancer care in upstate New York, along with their 24 caregivers (N=48 participants). Interview topics included SOGI data collection, inclusion of SGM patients' caregivers, and recommendations for improving cancer care. Interviews were recorded, transcribed, and analyzed using an inductive coding strategy by two independent coders. Codes were then refined to establish themes within and across patient/caregiver dyads.
Results
Five themes were identified: 1) Disclosure of SOGI in cancer care is typically initiated by SGM patients. 2) Providers vary in their competence when responding to SOGI. 3) Provider competence with SOGI is related to provider competence discussing sexuality. 4) Caregivers are invisible when disclosure of SOGI does not occur. 5) SGM patients and caregivers want to be treated with respect.
Conclusions
Despite efforts to address the recommendation to collect SOGI data, SGM patients often disclose identities themselves. Facilitating disclosures could improve cancer care for SGM patients, enhance the visibility of caregivers, and improve provider competence in general. Empirically-based interventions to increase provider comfort are needed to implement these recommendations.

eP521
CANCER-RELATED DISTRES: AN INSTITUTIONAL EXPERIENCE

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Introduction
Patients diagnosed with and fighting with cancer are facing multiple distressing factors that could adversely affect compliance with medical care and the outcomes of cancer therapy, and even the overall survival. Distress also significantly affects the quality of life a patient might have.
Methods
The Department of Supportive Care Medicine has developed the SupportScreen that is an automated touch-screen tool designed to identify biopsychosocial problem-related distress and to facilitate patient - physician and multi-specialist communication. Patient were asked questions about their physical and emotional symptoms they noted during their journey cancer.
Results
42,623 screenings were conducted, and 24,413 patients were interviewed with a less than 1% refusal rate. Data collection identified the most distressing factors (emotional, physical, social, communication, spiritual etc.) for our patient population with sleep, fatigue and fear of side effects from chemotherapy being the most prevalent. It was also noticed that the distress factors varied amongst various cancer diagnosis groups (GI, Breast, Lung etc.) and that the distress factors were not similar between the patients and their caregivers.
Conclusions
Careful screening of both patients and their caregivers and addressing the distress factors improves quality of life in patients with cancer and therefore screening for distress should be an integral part of patients' complete evaluation in any oncological practice. Literature review indicated that distress could be further reduced by a proper coordination of care, hence, the Department of Supportive Care Medicine developed a clinical triage algorithm to ensure that all distressing factors are appropriately addressed.

eP522
WHAT FACTORS CONTRIBUTE TO DISTRESS IN CARERS OF PATIENTS UNDERGOING RADIOTHERAPY FOR HEAD AND NECK CANCER?

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Introduction
It is well-known that up to 40% of carers of patients with head and neck cancer experience significant distress during treatment. This study aimed to examine the incidence and causes of distress over the course of treatment using an electronic, web-based screening tool for carers.
Methods
A longitudinal cohort design was used to investigate the incidence and factors contributing to distress among carers of patients undergoing radiotherapy treatment for head and neck cancer. Carers of patients with head and neck cancer undergoing radiotherapy were enrolled at radiotherapy planning, and completed an electronic, carer reported screening tool, "ScreenIT" weekly during treatment. Cohort data was analysed descriptively.
Results
From June 2015 – September 2018, 141 carers completed ScreenIT during their family members radiotherapy treatment for head and neck cancer. Across the 141 carers, 393 entries were recorded (m = 2.8, range 1-10). The majority of carers identified as spouses (n= 283, 72%) or son/daughter (n= 78%, 18%). More than half the carers reported distress at at least one timepoint during treatment (55% >4 Distress Thermometer). The factors contributing to distress included emotional (worry 32%, fears 12%, sadness 12%), patient's physical symptoms (eating/drinking 27%, fatigue 28%, sleep 13%), and practical (suitable food/drinks 20%, planning meals 14%, and preparation/cooking 10%). Only 4% of carers wished to discuss their concerns with a health professional.
Conclusions
During radiotherapy treatment, carers of patients of head and neck cancer commonly report distress related to emotional, physical and practical concerns, however very few wished to discuss their concerns with a health professional.

eP523
INCORPORATION OF THE PATIENT-REPORTED OUTCOMES MEASUREMENT INFORMATION SYSTEM (PROMIS) TO ASSESS QUALITY OF LIFE AMONG BREAST CANCER PATIENTS INITIATING CARE AT AN ACADEMIC CENTER

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Introduction

The Patient-Reported Outcomes Measurement Information System (PROMIS) assesses physical, mental and social health in clinical and research settings. Despite interest in using PROMIS in clinical trials, limited reference data on cancer populations exists.

Methods

At the UCSF Breast Care Center (BCC), new patients receive electronic intake questionnaires assessing self-reported medical history, demographics, and 8 PROMIS domains: depression, anxiety, fatigue, sleep-related impairment and disturbance, cognitive function, applied cognition and physical function. This information triages patients to appropriate supportive care resources. 2886 patients with a self-reported breast cancer diagnosis completed questionnaires and consented to research. PROMIS T-Scores were calculated using the Health Measures system and compared across patient groups.

Results

For all assessed domains except depression, cognitive function and applied cognition, BCC patients had clinically significantly (>3 point difference) worse PROMIS scores than the US population mean of 50. Compared to stage 0-III, stage IV patients had worse mean values for all assessed domains ($p<0.05$). Clinically meaningful differences were observed between Stage 0-III and Stage IV women < age 50 in depression, anxiety, and cognition (table 1). Patients with less than high school education suffer worse sleep impairment and disturbance at all stages, and Stage IV patients in this group experience higher depression and anxiety.

Table 1. UCSF BCC PROMIS Breast Cancer Reference Values By Stage, Age, Race, and Education

Mean Score [SE]

		Depression*		Anxiety*		Sleep Impairment*		Sleep Disturbance*		Fatigue*		Cognitive Function†		Applied Cognition†		Physical Function†	
	No. of Patients	Stage IV	Stage 0-III	Stage IV	Stage 0-III	Stage IV	Stage 0-III	Stage IV	Stage 0-III	Stage IV	Stage 0-III	Stage IV	Stage 0-III	Stage IV	Stage 0-III	Stage IV	Stage 0-III
Overall	2797	52.2 (0.6)	49.3 (0.2)	55.2 (0.6)	53.6 (0.2)	56.6 (0.7)	55.2 (0.2)	56.6 (0.7)	55.2 (0.2)	57.3 (0.6)	54.7 (0.2)	46.2 (0.7)	48.5 (0.3)	48.5 (0.7)	50.6 (0.3)	40.3 (0.5)	43.3 (0.2)
AGE																	
21-49	979	54.5 (1.2)	50.4 (0.3)	58.9 (1.0)	55.3 (0.3)	58.6 (0.9)	56.0 (0.3)	58.6 (0.9)	56.0 (0.3)	57.6 (1.1)	54.9 (0.3)	43.4 (1.2)	46.4 (0.5)	44.5 (1.1)	47.9 (0.5)	41.4 (1.1)	44.0 (0.4)
50-64	1357	52.4 (0.9)	49.1 (0.2)	55.0 (0.9)	53.3 (0.3)	55.7 (1.1)	55.0 (0.2)	55.7 (1.1)	55.0 (0.2)	56.7 (1.0)	54.7 (0.3)	46.4 (1.0)	49.5 (0.4)	49.2 (1.1)	51.5 (0.4)	40.4 (0.7)	43.4 (0.3)
>65	661	49.2 (1.2)	48.2 (0.3)	51.2 (1.1)	51.5 (0.3)	55.6 (1.3)	54.3 (0.3)	55.6 (1.3)	54.3 (0.3)	58.3 (1.4)	54.3 (0.3)	49.1 (1.4)	50.0 (0.5)	51.6 (1.5)	52.8 (0.6)	39.1 (1.2)	41.8 (0.4)
RACE																	
African-American	73	50.8 (3.6)	50.1 (0.9)	50.2 (3.8)	54.5 (0.9)	54.4 (2.5)	54.4 (0.8)	54.4 (2.5)	54.4 (0.8)	53.7 (1.6)	55.8 (1.0)	52.9 (5.1)	48.7 (1.7)	51.9 (4.4)	49.9 (1.7)	36.1 (1.8)	40.9 (1.4)
American Indian or Alaskan Native	54	51.9 (3.7)	49.2 (1.1)	55.3 (3.9)	54.9 (1.3)	53.6 (4.8)	56.6 (1.2)	53.6 (4.8)	56.6 (1.2)	61.5 (4.1)	57.4 (1.7)	44.2 (3.1)	47.9 (2.2)	47.0 (5.8)	52.9 (1.6)	40.1 (2.3)	41.3 (1.3)
Asian	437	56.5 (2.1)	49.3 (0.4)	59.7 (1.7)	53.0 (0.4)	61.1 (1.4)	55.4 (0.4)	61.1 (1.4)	55.4 (0.4)	59.2 (2.0)	54.3 (0.5)	44.8 (1.5)	48.8 (0.7)	46.1 (1.8)	50.8 (0.8)	38.9 (1.5)	43.6 (0.5)
Latinx	77	53.7 (2.2)	51.5 (1.0)	57.9 (1.3)	55.8 (1.1)	55.8 (2.0)	57.6 (1.0)	55.8 (2.0)	57.6 (1.0)	65.6 (1.6)	55.9 (1.1)	44.6 (3.6)	50.3 (1.9)	48.7 (3.0)	51.8 (2.2)	38.5 (3.5)	42.9 (1.1)
Pacific Islander	20	49.8 (NA)	48.6 (1.6)	68.8 (NA)	52.4 (1.7)	NA (NA)	55.2 (1.8)	NA (NA)	55.2 (1.8)	64.7 (NA)	51.7 (1.3)	40.2 (NA)	46.7 (1.0)	42.1 (NA)	56.3 (2.6)	35.9 (NA)	42.9 (2.3)
White	2136	51.4 (0.7)	49.3 (0.2)	54.3 (0.7)	53.6 (.2)	55.7 (0.8)	55.1 (0.2)	55.7 (.8)	55.1 (0.2)	56.6 (0.7)	54.6 (0.2)	46.4 (0.8)	48.5 (0.3)	48.9 (0.9)	50.4 (0.3)	41.1 (0.6)	43.4 (0.2)
EDUCATION																	
College	2174	52.2 (0.8)	49.3 (0.2)	55.8 (0.7)	53.5 (0.2)	56.7 (0.8)	55.1 (0.2)	56.7 (0.8)	55.1 (0.2)	56.7 (0.7)	54.8 (0.2)	46.1 (0.9)	48.8 (0.3)	48.8 (0.9)	50.9 (0.3)	41.1 (0.8)	43.5 (0.2)
Some College	499	51.2 (1.2)	49.4 (0.4)	53.3 (1.2)	53.8 (0.4)	57.2 (1.4)	55.5 (0.3)	57.2 (1.4)	55.5 (0.3)	57.6 (1.3)	54.3 (0.4)	46.1 (1.3)	47.7 (0.7)	47.0 (1.6)	49.6 (0.8)	39.9 (0.8)	42.5 (0.5)
High-School	88	52.7 (2.5)	49.0 (0.8)	51.4 (2.6)	53.9 (0.8)	53.2 (1.8)	55.4 (0.7)	53.2 (1.8)	55.4 (0.7)	60.5 (3.2)	54.8 (0.9)	48.5 (2.8)	46.4 (2.4)	50.0 (3.6)	49.5 (2.2)	39.0 (2.9)	41.4 (1.2)
Some HS	36	58.2 (3.8)	50.0 (1.5)	62.4 (2.3)	53.4 (1.6)	62.3 (5.1)	58.4 (2.3)	62.3 (5.1)	58.4 (2.3)	62.8 (4.7)	54.9 (1.7)	44.5 (2.5)	49.0 (1.8)	49.3 (3.8)	48.5 (3.4)	31.9 (1.8)	45.3 (2.0)

* Higher T-Score represents more severe symptoms

† Higher T-Score represents better functioning

Conclusions

PROMIS scores among UCSF BCC patients indicate impaired quality of life in multiple domains. While not directly comparable to population-based samples, these PROMIS scores provide insight into the physical, mental and social health of our patients and can serve as robust estimates for breast cancer trials and clinical care.

eP524

LONGITUDINAL COGNITIVE BEHAVIORAL EFFECTS ON SUBJECTIVE SLEEP OUTCOMES IN WOMEN WITH GYNECOLOGIC MALIGNANCIES AND INSOMNIA

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Introduction

Sleep disturbance is a critical cancer outcome associated with depression, diminished quality of life, and morbidity. Empirical evidence corroborates the effectiveness of Cognitive Behavioral Therapy for insomnia (CBTi) in breast cancer survivors. We previously demonstrated significant effects of CBT for insomnia and pain (CBTip) on Total Wake Time (TWT) in women with gynecologic malignancies. The current analyses explored CBTip effects on other subjective sleep variables in this sample.

Methods

Participants were 35 women with insomnia status/post-surgery for gynecologic cancer randomized to CBTip (N=18) or Psychoeducation (PE; N=17). Subjective Sleep Efficiency (SE), Sleep Quality (SQ), Sleep Onset Latency (SOL), and Wake After Sleep Onset (WASO) were assessed via 14-days of sleep diaries at baseline, post-intervention, and 2-month follow-up. Intent-to-treat analyses utilizing mixed linear modeling were conducted to examine longitudinal group differences on sleep variables controlling for age and advanced cancer (i.e., Stage III-IV).

Results

There were significant fixed effects of time and condition on SE and SOL, such that CBTip participants demonstrated higher SE (9.68, $p<0.01$) and lower SOL (-17.53, $p=0.01$) compared to Psychoeducation participants. Despite significant fixed effects of time on WASO, effects of condition on WASO and those of time and condition on SQ were non-significant. The study lacked power to demonstrate significant fixed effects of groupXcondition.

Figure 1. Effects of CBTi.p. on Sleep Efficiency (SE) Controlling for Age and Advanced Cancer

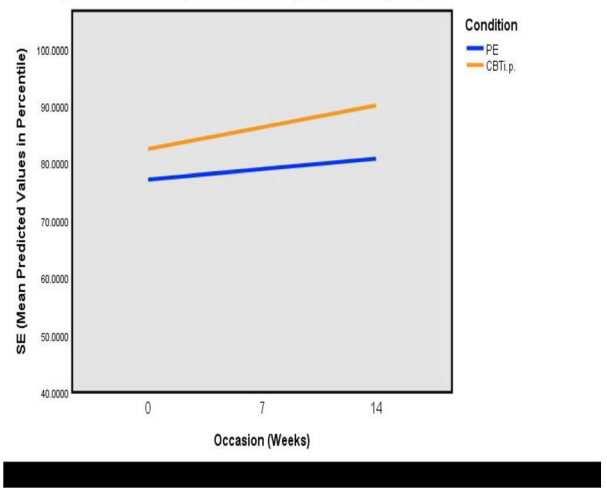
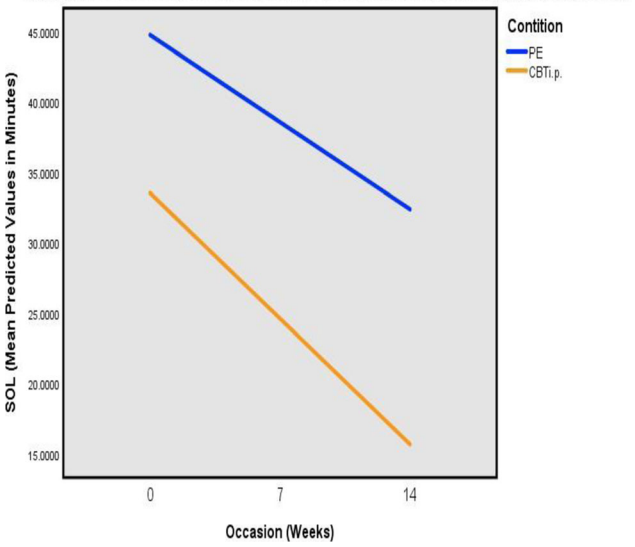


Figure 2. Effects of CBTi.p. on Sleep Onset Latency (SOL) Controlling for Age and Advanced Canncer



Conclusions
Gynecologic cancer patients with insomnia randomized to CBTip had higher subjective SE and lower SOL than those randomized to PE during acute post-surgical treatment phase. Future research will focus on the effects of CBTip on pain.

eP525
HOSPITAL CLOWNS ON PSYCHOLOGICAL STRESS AND CANCER-RELATED FATIGUE IN PEDIATRIC ONCOLOGY PATIENTS UNDERGOING CHEMOTHERAPY

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Introduction
Hospital clowns has been shown to enhance emotional and behavioral processes but few studies have comprehensively examined the effectiveness of this practice using biomarkers. Our purpose was to evaluate the effect of a clown intervention on the levels of psychological stress and cancer-related fatigue in pediatric oncology patients undergoing chemotherapy.
Methods
Sixteen patients who met all criteria from a pediatric oncology inpatient unit in a Brazilian comprehensive cancer care hospital participated in this quasi-experimental study. Eight saliva samples were collected, comprising 4 at baseline and 4 after clown intervention (+1h, +4h, +9h, and +13h post-awakening). Salivary cortisol and α-amylase levels were determined using high sensitivity enzyme-linked immunosorbent assay kits. Stress and fatigue were measured by the Child Stress Scale-ESI™ and the PedsQL™ Multidimensional Fatigue Scale respectively. Relationships among stress, fatigue and biomarker levels were investigated using non-parametric statistics.
Results
In comparison with baseline measurements, the total psychological stress and fatigue levels improved after the clown intervention at the collection time point +4h ($p=0.003$ and $p=0.04$, respectively). Salivary cortisol showed a significant decrease following clown intervention at the collection time points +1h, +9h, and +13h ($p<0.05$); however, α-amylase levels remained unchanged.
Conclusions
These findings provide preliminary evidence that clown intervention merits further study as a way to reduce stress and fatigue in pediatric cancer inpatients, and that self-report and biomarker measures are feasible to collect in this patient group.

eP526
ASSOCIATION OF POSTTRAUMATIC GROWTH WITH COGNITIVE EMOTION REGULATION AND SOCIAL SUPPORT IN LYMPHOMA SURVIVORS

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Introduction
The generation of posttraumatic growth (PTG) among patients with lymphoma was confirmed in previous research. The present study examined major variables that may influence PTG. Specifically, this study explored the association of PTG with cognitive emotion regulation and social support after individuals were diagnosed with lymphoma.
Methods
The Posttraumatic Growth Inventory (PTGI), Cognitive Emotion Regulation Questionnaire (CERQ), and the Social Support Rating Scale (SSRS) were used in this cross-sectional study to interview 384 lymphoma patients in a tertiary hospital from March 1, 2014 to March 30, 2016. Demographic and health-related variables, CERQ and SSRS were used as independent variables, while PTG was used as the dependent variable in univariate (t-tests and one-way analysis of variance), bivariate (Pearson's correlation) and multivariate analyses. The multivariate analysis employed stepwise linear regression.
Results
Among the 407 patients who agreed to participate in the study, 384 completed the survey (90.3% response rate). Three demographic variables (income, cancer stage, and religious preference), cognitive emotion regulation (i.e., acceptance and refocus on planning), and social support (utilization of social support) significantly predicted PTG in the stepwise regression.
Conclusions
Cognitive emotion regulation strategies and social support were independently associated with PTG. Clinical medical workers should pay more attention to promoting the mental health of lymphoma patients, which can help to improve their level of PTG.

eP527
PSYCHOLOGICAL TRAUMA IN CANCER AND ITS ASSOCIATIONS WITH OTHER PSYCHOLOGICAL SYMPTOMS AND QUALITY OF LIFE

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Introduction
The cancer experience is known to induce psychological trauma in a minority of cancer survivors, with rates for severe psychological trauma ranging from 5-22% (Abbey, Thompson, Hickish, & Heathcote, 2015; Chan et al., 2018). Psychological trauma may negatively affect emotional well-being and quality of life. Associations between trauma symptoms, other psychological variables, and quality of life have not been adequately examined. The purpose of this study is to examine relationships between psychological trauma, cancer distress, depressive symptoms, anxiety, resilience, and health-related quality of life (HRQOL) in persons undergoing cancer treatment.
Methods
This is a prospective, cross-sectional, descriptive study. Data will be collected on 100 participants who will provide data on psychological trauma, distress, depressive symptoms, anxiety, resilience, and HRQOL via iPad. An estimated minimum sample size of 85 participants will adequately power the study. Correlation coefficients and logistic regression will be used to identify the strongest predictors of psychological trauma.
Results
The study was approved by the IRB and we are currently enrolling participants. A total of 91 participants have provided data so far and we expect to finish data collection and analysis by May, 2019. We hypothesize that there will be a strong positive relationship between psychological trauma, cancer distress, depressive symptoms and anxiety, and that resilience and HRQOL will be negatively correlated with psychological trauma.
Conclusions
This data will provide important information related to relationships between psychological trauma, anxiety, depression, resilience and health-related quality of life, which will inform future research aimed at reducing psychological trauma and its associated psychological factors.

eP528

FREQUENT USE OF TOBACCO AND ALCOHOL BY FRENCH WOMEN WITH BREAST CANCER: NEED FOR SYSTEMATIC SCREENING AND BRIEF INTERVENTION.

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Introduction
To date, the use of alcohol and tobacco represent the two most important risk factors increasing the incidence of developing cancer and death of cancer, particularly for women suffering from breast cancer. However, data remains minimal regarding consumption profiles of women receiving treatment for breast cancer in France.
Methods
The present study aims to describe the frequency of tobacco and alcohol consumption and their relationships with patient's sociodemographic, medical and psychological characteristics within a sample of French women receiving treatment for breast cancer. In addition, all patients participated in a screening and brief intervention (SBI).
Results
In total, 120 women with breast cancer were included for this study. The majority of the patients were hospitalized for a primo cancer (80, 8%), type Invasive Ductal Carcinoma (IDC) (70, 8%) and received surgery as primary treatment (45%). Furthermore, 30.8% reported tobacco consumption and 38.4% a high-risk alcohol consumption (score AUDIT-C>3). Overall, no significant relationships were found between consumption scores and sociodemographic, medical and psychological characteristics. However, patient's age was associated with tobacco consumption.
Conclusions
Both tobacco and at-risk alcohol consumption are frequently reported during breast cancer treatment. The need for the implementation of risk reduction methods in breast cancer care is outlined.

eP529

SOCIAL MEDIA USE (SM), QUALITY OF LIFE (QOL), DISTRESS AND SOCIAL SUPPORT AMONG BREAST AND GYNECOLOGIC CANCER PATIENTS AND SURVIVORS (N=255)

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Introduction
Social media (SM) use is prevalent. However, little is known about its use among breast/gynecologic cancer patients and survivors. This study aims to explore SM use, purpose, and associated factors in this population.
Methods
196 breast (77%) and 59 gynecologic (23%) cancer patients and survivors were recruited in-clinic (14% declined). Participants completed questionnaires on SM usage (designed for this study), QOL (FACT-G), social support (Duke FSSQ), and distress (PHQ-4).
Results
SM users (76%) were younger (mean=53, SD=12) than non-users (24%; mean=58, SD=12; p=.023). There was no difference for overall QOL, social support, or distress between users and non-users. Reasons for use were "for social support" (35%), "when I feel lonely" (26%), and "for coping" (18%); followed by "to gather health information" (14%) and to "share my cancer diagnosis" (13.5%). Pearson correlations showed that patients more likely to use social media when feeling lonely had lower QOL (p<.001), less social support (p<.001), and more distress (p=.001). Those who reported using SM for coping also had lower QOL and less social support (all p-values<.05). Higher use of SM for social support was correlated with having less social support (p=.016). There were no associations between those who reported using SM to find health information or share diagnosis and QOL, social support, or distress.
Conclusions
Breast/gynecologic cancer patients and survivors reported differences in QOL, social support and levels of distress related to their reasons for SM use. Further research is needed to understand the psychosocial effects of SM use in this population.

eP530

RESILIENCE AND QUALITY OF LIFE OF CAREGIVERS OF PATIENTS WITH ADVANCED MALIGNANCIES

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Introduction
: Assessing resilience and Quality of life in Caregivers of Advanced cancer patients.
Methods
- **Study Design**: Cross sectional Observation study
- **Setting:** Department of Palliative Medicine, Tertiary Cancer Centre
- **Population:** Primary caregivers of patients with advanced cancer referred to Department of Palliative Medicine.

Results
75 caregivers were enrolled for study, 71 completed questionnaire. Mean age of patients was 54 years (SD – 15.92), Mean age of caregivers was 36.51 year (SD- 11.61). Mean Resilience Score was 70.17 (SD- 16.49, Range 19.31-100). WHO QOL (Quality of life) scores of different domains were Physical Health domain: 59.18, Psychological wellbeing domain: 57.84, Social relationship domain 68.89, Environmental domain 56.21, Overall domain 66.54. Pearson Correlation coefficient resilience score with different domains of QOL were 0.293 with Physical Health domain, 0.419 with Psychological wellbeing domain, 0.374 with Social relationship domain, 0.420 Environmental domain, Overall domain 0.461.
Conclusions
Resilience score of cancer patient's caregiver were lower than that of general population (US) (*Connor and Davidson (2003)*); were comparable with caregivers of Bipolar disorder (Jain A 2014) and better than care givers of Schizophrenia and Dementia. Correlation between resilience score with different domains of QOL was moderate to weak. The resilience of caregivers of advanced cancer patients is comparable to caregivers of other illnesses. Resilience is correlated with quality of life (weak to moderate).

eP531

THE NURSE PRACTITIONER-THERAPIST AND THE INTERNIST-PSYCHIATRIST: A NOVEL CO-LOCATED PSYCHO-ONCOLOGIC CARE DELIVERY MODEL

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Introduction
Given the prevalence of psychosocial distress in patients with cancer, screening and referral to psychosocial oncology services is advised and may be enforced. While the collaborative care model has demonstrated strong evidence, there are numerous care delivery models, secondary to institutional variability and the vast scope of expertise and practice of psychosocial care providers. We present a novel care delivery model delivered by a dually trained internist-psychiatrist and an oncologic nurse practitioner with certification in marriage and family therapy. We demonstrate the breadth and depth of psychosocial needs that are both explored and managed effectively to highlight the importance of attending to the developmental stages of individuals with cancers, caregiver distress, and indications for psychopharmacology.
Methods
We present 10 cases with variable demographics, cancer diagnoses and treatments, and psychiatric distress symptoms. Each of these patients was encountered by the aforementioned providers at different time-points. Outcomes were measured using screening tools, therapeutic alliance scales, patient testimonials, and provider satisfaction ratings.
Results
We demonstrate the positive outcomes of patients receiving psychosocial care from providers with knowledge and understanding of the disease process and also expertise in therapy practices and prescribing. We describe the benefits of working collaboratively in a co-located setting and optimizing the internal relationships to facilitate the care of our patients with cancer.
Conclusions
We conclude that patients, caregivers and providers benefit from a model of care that includes a range of professional expertise while also providing focused, well-coordinated, effective psycho-oncologic interventions.

eP532
TIMING OF URINARY CATHETER REMOVAL AFTER RADICAL HYSTERECTOMY. A SINGLE INSTITUTION STUDY.

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Introduction
Radical hysterectomy (RH) remains to be the primary surgery for selected early stage cervical and endometrial cancer. Functional disorders of the lower urinary tract are the most common complications following radical surgery necessitating catheterization. This study evaluated the average day of removal of urinary catheter after radical hysterectomy and assess the practicability of earlier removal of catheter without compromising the bladder function.
Methods
A descriptive retrospective study of patients who underwent RH for cervical or endometrial cancer. Medical, intraoperative and anesthesia records and results of the histopathologic diagnosis of each patient were reviewed. Demographic, clinical and histopathologic data needed in this review were recorded.
Results
Between January 2016 and July 2018, a total of 26 patients underwent RH (25 patients for cervical cancer and 1 for endometrial carcinoma), with a median age of 51. The average operative time is 2.48 hours and the average blood loss is 500 ml. The average size of cervix, length of vagina and lateral width of parametria were 3.0 cm, 2.2 cm and 4.2 cm, respectively. Catheters were removed between 3rd and 10th postoperative day. All patients had adequate (more than 100 ml) spontaneous void (SV) within 6 hours after removal.
Conclusions
Removal of catheter after RH from 3rd to 10th postoperative day resulted to adequate SV with no complaints of urinary retention. This outcome supports the hypothesis that an earlier removal of catheter seems to be a safe and practical option compared to long-term catheterization providing comfort to patients after RH without causing morbidity.

eP533
IDENTIFYING FEMALE PELVIC CANCER SURVIVORS WITH LOW LEVELS OF PHYSICAL ACTIVITY AFTER RADIOTHERAPY: WHICH WOMEN NEED ADDITIONAL SUPPORT?

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[2]*Karlstad University, Department of Health Sciences- Division of Nursing, Karlstad, Sweden*
[3]*Ersta Sköndal University College, Department of Health Care Sciences, Stockholm, Sweden*
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Introduction
We investigate the frequency of physical activity among female pelvic cancer survivors and if survivors who practiced physical activity less than once a week differed from survivors practicing physical activity at least once a week with respect to urinary and faecal leakage, clinical and sociodemographic characteristics, Quality of Life (QoL), depressed and anxious mood.
Methods
Female pelvic cancer survivors (n=578, mean age 64 years) answered a questionnaire 6-48 months after radiotherapy. A multivariable regression model analyzed factors explaining frequency of physical activity. We compared QoL, and depressed and anxious mood between women practicing physical activity at least or less than once a week.
Results
Of 568 women delivering data, 186 (33%) practiced physical activity less than once a week while 382 (67%) practiced physical activity at least weekly. Women who leaked a large or all volume of stools ($p=0.01$), had just elementary school ($p<0.001$), smokers ($p=0.049$), or had lymphedema without receiving lymphedema-treatment ($p=0.030$) were more likely to practice physical activity less than weekly (50%, 45%, 45% and 37%, respectively) compared to other women. Women practicing physical activity at least weekly reported better QoL ($p<0.001$) and lower frequency of depressed mood ($p=0.044$) compared to the others.
Conclusions
Female cancer survivors experiencing faecal leakage were less likely to practice weekly physical activity than survivors without leakage, and the survivors practicing weekly physical activity experienced better QoL and experienced depressed mood less frequently than the others. Cancer-care professionals may want to actively encourage survivors to engage in physical activity.

eP534
EFFECT OF POSTOPERATIVE AMBULATION ON THE QUALITY OF LIFE IN A TRANS-TIBIAL AMPUTEE

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Introduction
Quality of life of a trans-tibial (TT) amputee is not only determined by his functional rehabilitation but also social, economical and psychological rehabilitation. A number of studies have analyzed the influence of lower limb amputation on these factors. This study analysed the effect of functional recovery on other parameters of quality of life in a TT amputee.
Methods
This was a 10 years retrospective and 2 years prospective study. A total of 160 patients of trans-tibial amputation were followed. Their

postoperative ambulatory status was calculated using Pinzur's ambulatory level. Their quality of life was determined on the basis of answers to a five point questionnaire which included their social, economic and psychological aspects. These parameters were correlated to assess the influence of functional recovery on the quality of life

Results

All the amputees with Pinzur's 0-1 level of ambulation suffered loss of income consequent to loss of job. All of them felt increased level of depression and anxiety after amputation. 50% of the patients with postoperative 0-1 level of ambulation felt socially neglected. Comparatively much less percentage of amputees with 5-6 level of ambulation suffered economic, social and psychological crisis.

Conclusions

Quality of life of a TT amputee is determined not only by his functional rehabilitation but also social, economical and psychological factors. From this study we concluded that post operative functional outcome significantly affects the quality of life of an amputee. An amputee with better ambulation level fares better economically, psychologically and socially in comparison to an amputee with poor ambulatory outcome

eP535

THE PREVENTION OF SHOULDER PROBLEMS TRIAL (UK PROSPER): EXERCISE TO PREVENT SHOULDER PROBLEMS IN PATIENTS UNDERGOING BREAST CANCER TREATMENT

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Introduction

Shoulder dysfunction and pain following breast cancer treatment is common, impacting upon postoperative quality of life. There is some evidence to suggest that early postoperative exercise is safe and may improve shoulder function. However, there is uncertainty around the timing and dosage required for optimal results.

Methods

PROSPER is a pragmatic two-armed, multicentre RCT which aims to evaluate the clinical and cost-effectiveness of an early supervised structured exercise programme compared to usual care, for women at high risk of developing shoulder problems after breast cancer surgery. The aim was to recruit 350 women from 17 UK centres; postoperative follow-up was done at 6 weeks, 6 and 12 months post-randomisation. Participants received the exercise intervention or best practice usual care. The primary outcome was upper arm function assessed using the Disabilities of the Arm Shoulder and Hand (DASH) questionnaire at 12 months. Secondary outcomes included acute/chronic postoperative pain, complications, health related QoLand resource use. Painful symptoms are captured using VAS (0-10) and the Doleur Neuropathique (DN4) scale respectively. The physiotherapy-supported exercise intervention was developed using guidance for the development of complex interventions and incorporated behavioural strategies to encourage adherence. Qualitative interviews informed recruitment processes.

Results

To add

Conclusions

To add

eP536

CORTISOL, ALPHA-AMYLASE, CYTOKINES AND TREATMENT-RELATED SYMPTOMS IN BREAST CANCER SURVIVORS SUBMITTED TO A SWEDISH MASSAGE INTERVENTION: PRELIMINARY RESULTS

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Introduction

There is no evidence up to date to conclude that there is high certainty of the benefit of massage therapy, which is due to the fact that only a few rigorous trials have been conducted. Besides the negative impact on patients' QoL, cancer-related symptoms also play an immunosuppressive effect by changing levels ofbiological markers. We aimed toinvestigate the effects of a novel massage protocol on quality of life (QoL), sleep, stress, fatigue, cytokines, cortisol and α-amylase.

Methods

Females over 18 years diagnosed with breast cancer were invited to participate (IRB approval protocol #16-112). Twenty-four participants underwent 1 hour/week of massage for 8 weeks. Data was collected in three phases: (i) baseline (ii) during an 8-week intervention period and (iii) endpoint. Fatigue, sleep and QoL were assessed through validated questionnaires. Sleepwasmeasured with a Motionlogger Actigraph Monitor. Saliva was collected to quantify biological markers.

Results

A paired-samples t-test was conducted to compare if there was a difference between pre and post-intervention period. There was a significant difference in QoL scores between baseline and endpoint ($t(5)=-2.45$, $p=0.002$). Fatigue also significantly improved ($t(5)=-4.85$, $p=0.005$) from baseline to endpoint. Significant improvement ($t(5)=3.369$, $p=0.020$) was also observed in stress from baseline ($M=24.1$, $SD=5.7$) to endpoint ($M=20.3$, $SD=8.1$). There was a statistically significant improvement in systolic blood pressure following the Swedish massage - an improvement of 3.50 ± 1.16 mmHg. Sleep efficiency pre and post-intervention also showed improvement.

Conclusions

Our 8-week Swedish massage program showed potential benefits for improvement of CRS.

eP537

SHOULD BREAST CANCER PATIENTS BE THE FOCUS OF ANTI-SMOKING CAMPAIGNS IN TRANSITIONAL COUNTRIES?

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Introduction

Studies have shown that breast cancer patients who smoke during cancer treatment, along with a higher symptom burden, exhibit a dramatically higher risk of death (HR 3.52). Majority of studies report that only 8-14% breast cancer survivors smoke, although recent research shows low smoking

cessation in breast cancer patients in Western population after cancer diagnosis. Currently, although around 30% of females in Croatia are active smokers, no analysis regarding smoking cessation have been done.

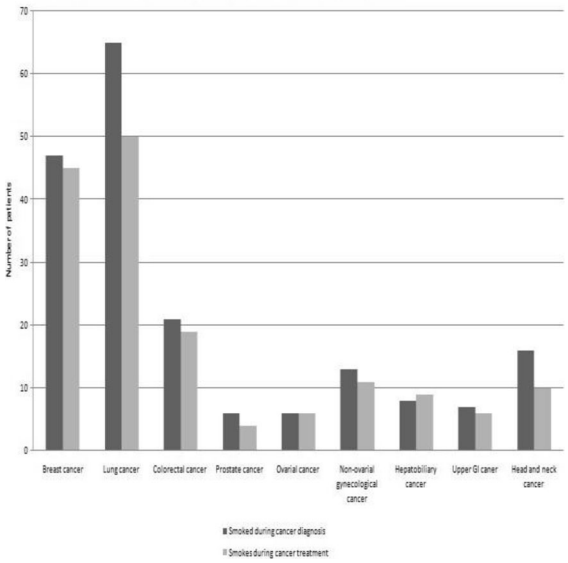
Methods

The study was cross-sectional research in two clinical hospital centers in Croatia and involved 168 breast cancer patients undergoing active treatment, using a questionnaire.

Results

Breast cancer patients are relatively young (57.6±11.31 years) and rarely metastatic (22%). Only around a quarter of breast cancer patients smoked at the time of cancer diagnosis. However, 96% of breast cancer patients continue to smoke after a cancer diagnosis, although the percentage of patients who smoke over ten cigarettes a day dropped from 70% to 36%. However, these numbers are higher compared to other patients and are much higher than previously reported for the Western population.

Figure 1: Comparisson of the number of patients smoking cigarettes at the time of cancer diagnosis and during cancer treatment based on cancer diagnosis



Conclusions

Although breast cancer patients are expected to exhibit relatively long survival compared to other cancers, they are one of the patient groups least likely to engage in smoking cessation during the treatment, possibly due to low perceived risk. With new research emphasizing the dangers of smoking during cancer treatment, breast cancer patients should be one of the focus groups, especially in transitional countries with a high number of female smokers.

eP538

OUTCOMES OF MULTICOMPONENT COMPRESSION BANDAGING FOR BILATERAL LOWER EXTREMITY EDEMA IN PATIENTS AT A QUATERNARY CANCER CENTER: A CASE SERIES

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Introduction

Lower-extremity edema is often multifactorial and poorly managed with diuretics alone. Long-term use of diuretics may induce chronicity of the edema by disturbing the renin-angiotensin relationship. Compression therapy, although effective against venous edema, is underused.

Methods

In this retrospective case series, 7 inpatients at a major cancer center who were referred to a lymphedema-certified therapist to manage refractory bilateral lower-extremity edema were identified. None had a diagnosis of lymphedema or chronic venous insufficiency for which compression therapy would be the standard of care. Their limb circumferences were measured by a lymphedema-certified therapist, and Functional Independence Measure (FIM) scores were assessed by a physical therapist. Limb circumferences were documented for all patients on first day before starting compression bandaging, and on last day, for those who completed the treatment sessions, after removing compression bandaging.

Results

The etiology of the patients' edema were multifactorial (Table 1). Compression bandaging was discontinued in 2 patients because of dyspnea. The other 5 patients underwent at least 3 consecutive days of compression bandaging. All 5 of these patients had improvement in limb circumferences (Table 2). The median FIM score for first day of compression bandaging was 1 and the median FIM score for last day was 3.5 with a change (improvement) of 2.5 FIM score.

Table 1. Demographic and medical characteristics of 5 patients who underwent compression bandaging for lower-extremity edema.

Patient	Age (y)	Sex	Disease Type	Reason for Hospitalization	Suspected Edema Etiology	Additional Edema Treatment
1	65	M	Chronic neutrophilic leukemia	• Recurrent chronic skin GVHD • Fluid overload • Failure to thrive • Fall	• Chronic skin GVHD • Fluid overload • Steroid myopathy	• IV furosemide (during compression bandaging)
2A*	72	M	Myelofibrosis	• Fracture to the left femoral neck after fall	• Steroid-induced edema • Steroid myopathy	• Oral furosemide (discontinued prior to compression bandaging)
2B*				• Skin GVHD	• Fluid overload • Steroid-induced edema • Steroid myopathy	• IV furosemide (during compression bandaging)
3	72	M	Squamous cell carcinoma of larynx	• Respiratory distress • Total laryngectomy	• Fluid overload • Steroid-induced edema • Steroid myopathy	• IV furosemide (during compression bandaging)
4	71	M	Myelodysplastic syndrome	• Gastrointestinal GVHD	• Fluid overload • Steroid-induced edema • Steroid myopathy	• IV furosemide (during compression bandaging)
5	61	M	Adenocarcinoma of Colon	• Colonic perforation and enterocutaneous fistula • Septic shock • Atrial fibrillation	• Fluid overload • Hypoalbuminemia	• IV furosemide • IV albumin (both during compression bandaging)

Abbreviations: GVHD, graft-versus-host disease; IV, intravenous

*Patient 2 underwent compression bandaging during 2 separate hospital stays.

Table 2. Bilateral lower extremity circumference measurements (cm) during compression bandaging

Patients 1-5*	Median, First Day	Median, Last Day	Median, Δ	(%)
R MTP	26.8	25.3	1.5	(5.6)
R ankle	30.4	27.5	2.9	(9.5)
R knee, 20 cm below	39.4	34.6	4.8	(12.2)
R knee	47.0	42.8	4.2	(8.9)
L MTP	27.0	25.4	1.6	(5.9)
L ankle	30.2	27.6	2.7	(8.8)
L knee, 20 cm below	37.4	33.8	3.6	(9.6)
L knee	46.5	43.3	3.3	(7.0)

Abbreviations: R, right; L, left; MTP, metatarsophalangeal joint.
*Patient 2 underwent compression bandaging during 2 separate hospital stays.

Conclusions

This case series demonstrated that multicomponent compression bandaging can be applied to manage refractory peripheral lower

extremity edema of various etiologies. It is encouraging to note that these patients had improvement in their overall limb circumferences as well as locomotion skills.

eP539

'I WANT TO KNOW WHY AND NEED TO BE INVOLVED IN MY OWN CARE…': AN INTERVIEW STUDY WITH LIVER, BILE DUCT OR PANCREATIC CANCER PATIENTS

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Introduction
Patients' involvement in their own care is important for those with upper abdominal tumours. Care is often conducted according to standardized fast-track care programmes (FTCP), and a shorter hospital stay is one of the goals. However, there is no research providing an in-depth perspective on patients' experiences of involvement in care. In this qualitative study, we explored experiences of involvement among patients who had surgery for upper abdominal tumours and were cared for according to an FTCP.
Methods
Qualitative face-to-face interviews about patient involvement in care were conducted with twenty patients who had surgery for liver, bile duct or pancreatic cancer using an open-interview guide.
Results
The most important findings are that customized information and active dialogue about care decisions stimulate patient involvement. We identified three themes from the analysed data: Involvement depended on the quality of information, communication and involvement during the care period and safety at discharge.
Conclusions
Individualized care and continuous information about treatment and care goals in the FTCP during the care process create trust between patients and healthcare professionals and increase patient experiences of involvement.

eP540

RELATIONSHIP PULMONARY FUNCTION AND PHYSICAL FUNCTION IN PATIENTS WITH MALIGNANT PLEURAL MESOTHELIOMA FOLLOWING PLEURECTOMY/ DECORTICATION.

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Introduction
Malignant pleural mesothelioma (MPM) is a rare cancer that affects the thin cell wall lining of internal organs and structures. In previous research, pulmonary function and physical function in surgically treated MPM patients have not been evaluated in detail. The aim of this study was to investigate the relationship pulmonary function and physical function of MPM patients following pleurectomy/decortication (P/D).
Methods
The subjects were 22 MPM patients (20 men) who completed P/D between December 2013 and March 2015. Pulmonary function assessed with forced expiratory vital capacity (FVC). Physical function were evaluated body weight (BW), knee extensor muscle strength, handgrip and 6-minutes walking distance (6MWD). The correlation between pulmonary function and physical function were analyzed using Pearson's correlation coefficient.
Results
Before operation, FVC correlated body weight ($P < 0.05$), knee extensor muscle strength ($P < 0.05$), handgrip ($P < 0.001$) and 6MWD ($P < 0.05$). After operation, FVC correlated body weight ($P < 0.001$), knee extensor muscle strength ($P < 0.05$) and handgrip ($P < 0.001$).
Conclusions
Before and after P/D, pulmonary function related physical function, especially muscle strength. Physicians, nurses, and rehabilitation staff should note these findings, which may provide insight into the development of customized rehabilitation strategies for patients with MPM who completed P/D.

eP541

THE RADIO FREQUENCY ABLATION AND TRANSCATHETER ARTERIAL EMBOLIZATION ON THE POSTOPERATIVE COMPLICATIONS TO QUALITY OF LIFE IN PATIENTS WITH LIVER CANCER

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Introduction
To improve quality of life for patients with the liver cancer is really needed, for the treatment of liver cancer, such as radio frequency ablation and transcatheter arterial embolization, do a comparison to understand the difference between. This study expects to understand the differences between the radio frequency ablation and transcatheter arterial embolization for patients with liver cancer in postoperative complications and quality of life, and looking forward to provide medical staff reference and to enhance quality of life for patients.
Methods
The study was conducted in the Chi Mei Medical Center, Liouying, Taiwan (IRB No: 10601-L07) by using the structured questionnaire, and the patients with liver cancer for population, convenience sampling to research objects (N=60).
Results
The survey found that more than 60% of patients rated their quality of life as a general. The results of the study found that the two groups of patients (each group respectively, N=30) with their lifestyle model reflect the postoperative complications did not have a statistically significant difference ($p > 0.005$). There was no statistically significant difference in the quality of life between the two groups ($p > 0.005$).
Conclusions
The results may make medical staff to understand radio frequency ablation and transcatheter arterial embolization for patients with liver cancer in postoperative complications and quality of life, although no statistics significant differences, but the relevant research results still need to be

further confirmed and to provide reference for future clinical data and improvement of their quality of life.

eP542
ARE WE FACING AN EPIDEMIC OF SMOKING-RELATED CANCERS AND TREATMENT COMPLICATIONS IN TRANSITIONAL COUNTRIES?

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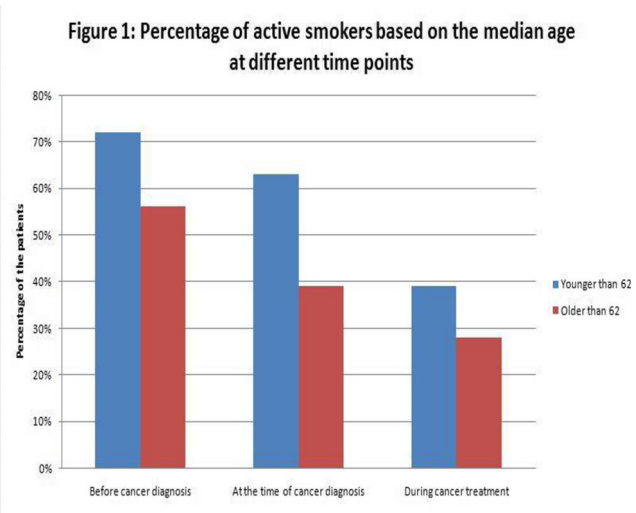
Introduction
Cigarette smoking is one of the most researched factors that cause cancer and is also associated with a higher total symptom burden during cancer treatment. Transitional countries such as Croatia exhibit a large number of smokers (around 30%), however, not much is known about the smoking habits of our patients during cancer treatment.
Methods
The study was cross-sectional research using a simple questionnair in two clinical hospital centers in Croatia and involved 441 cancer patients with history of smoking, who were undergoing active treatment.
Results
The median age of cancer patients was 62. Patients younger than the median age were more often previous smokers (72% *vs*. 56%), smokers at the time of cancer diagnosis (63% *vs.* 39%) and during the cancer treatment (52% vs 35%). Before cancer diagnosis, > 10 cigarettes a day was smoked by around 80% of patients, regardless of the age, while during the cancer treatment significantnly more younger patients smoke the same number of cigarettes (39% *vs*. 28).
Conclusions
There is a significantly higher percentage of younger smokers both before, during and after cancer diagnosis. Also, younger patients are shown to smoke a greater number of cigarettes during cancer treatment. We can expect a dramatic rise in the incidence of smoking-related cancers and treatment complications as the younger patients approach the median age of cancer incidence in Croatia. The data shows that urgent anti-smoking public health campaigns are of utmost importance for transitional countries such as Croatia.



eP543
IMPORTANCE OF MONITORING PHYSICAL FUNCTION FOR QUALITY OF LIFE ASSESSMENTS IN HEMATOPOIETIC STEM CELL TRANSPLANTATION PATIENTS: A PROSPECTIVE COHORT STUDY

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Introduction
We monitored serial changes of physical function in hematopoietic stem cell transplantation (HSCT) patients through the de Morton Mobility Index (DEMMI) score to determine the effect on quality of life (QoL) during the acute post-transplant period.
Methods
This prospective cohort study included 41 patients admitted for planned autologous or allogeneic HSCT. Physical impairment was defined as a decrease in the DEMMI score of more than 2 points after HSCT. The outcome variables for QoL included visual analogue scale (VAS), European Organization for Research and Treatment of Cancer Quality of Life Questionnaire (EORTC QLQ-C30), and Zung Self-rating Depression Scale (SDS) at enrollment and discharge.
Results
Based on DEMMI scores, 24.40% of all HSCT patients showed physical impairment, for whom the DEMMI score showed an overall decrease during hospitalization with significant differences in scores at 1, 2, and 3 weeks after HSCT, between 1 week before and 3 weeks after HSCT, and between 1 and 3 weeks after HSCT. There was no significant difference of VAS between admission and discharge between the groups. Each functional subscale of EORTC QLQ-C30 differed significantly between the groups, with lower scores in the physical impairment group. There was only a significant difference in SDS at discharge between the groups.

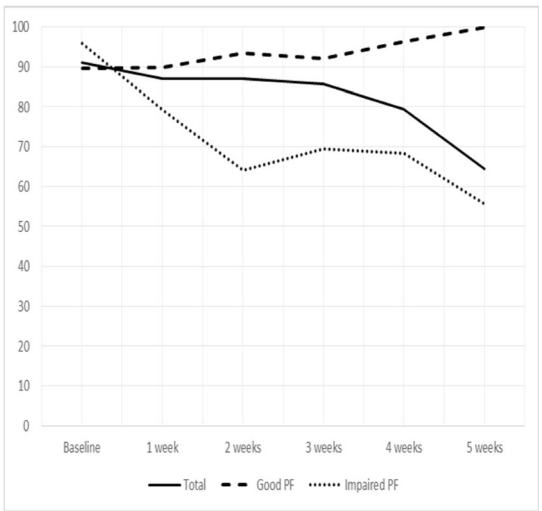

Fig. 1 DEMMI scores after HSCT
Conclusions
QoL pre-transplantation can be a predictive factor for physical impairment during the acute post-transplant period, which can be detected in the early period after HSCT. Therefore, monitoring of standardized functional outcome measures is important to prevent physical impairment following HSCT.

eP544
THE IMPORTANCE OF PHYSICAL FUNCTION IN PATIENTS WITH MULTIPLE MYELOMA FOR IMPROVING QUALITY OF LIFE

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Introduction
Multiple myeloma makes a heavy symptom burden and reduces quality of life (QoL). QoL and physical function of patients with multiple myeloma are deteriorated and there are still few studies. We tried to find out the relation between physical function and QoL in multiple myeloma patients.
Methods
Patient's data with multiple myeloma who were consulted to the department were reviewed. Physical function was evaluated with Mini-Balance Evaluation Systems Test (Mini-BESTest). EORTC QLQ-C30 and QLQ-MY20 for evaluation of QoL and Fatigue severity score and Beck Depression Index were assessed. Compare to normative value of mini-BESTest based on previous study, patients were divided into control group (N=32) and impaired group (N=25). Clinical features were reviewed to find out the contributing factors to physical function: age, sex, disease duration and stage, cancer type, duration after transplantation, and baseline and current laboratory findings.
Results
Positive correlation was present between mini-BESTest score and global health status and QoL score (r=0.279, P=0.035). Physical function and QoL score were decreased with lower albumin level, severe disease related symptoms, and depressed patients. The impaired group showed significantly lower hemoglobin and albumin. Furthermore, this group had shorter duration after stem cell transplantation (P=0.017), and shorter disease duration, though not statistically significant.

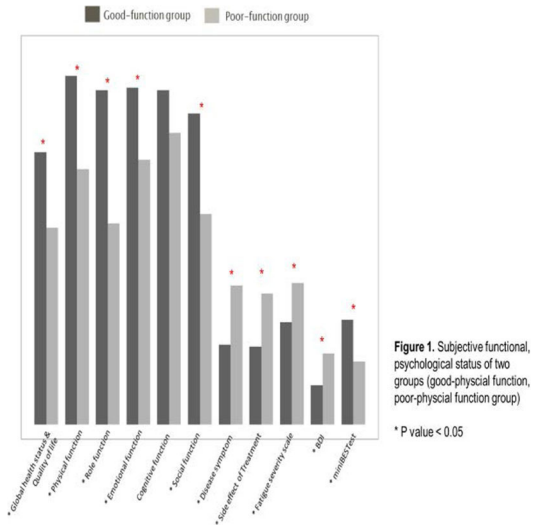

Figure 1. Subjective functional, psychological status of two groups (good-physcial function, poor-physcial function group)

Conclusions
In patients with multiple myeloma, QoL has a relationship with physical function. Low albumin level, severe disease related symptoms, and depression were related to decreased physical function. Not only phschosocial status but also object medical condition affects physical function, and it consequentially affects QoL in multiple myeloma patients.

eP545
SCREENING AND TREATMENT OF CARDIOVASCULAR COMORBIDITIES AMONG PATIENTS WITH PROSTATE CANCER WHO START ANDROGEN DEPRIVATION THERAPY

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Introduction
Androgen deprivation therapy (ADT) is associated with an increase in cardiovascular (CV) events among patients with prostate cancer (PC). CV comorbidities and risk factors screening is mandated according to international and local guidelines. Mexico has one of the highest rates of metabolic syndrome, and we lack local studies that evaluate compliance with these guidelines in our PC population.
Methods
Retrospective chart review of patients with PC who started ADT in a single institution from January 2013 to January 2018. We evaluated the screening of CV comorbidities and risk factors from the previous 12 months to the first 3 months since ADT initiation. Implemented therapeutic interventions based on abnormal findings in screening were also assessed.
Results
100 patients were included, baseline characteristics are described in Table 1: 68% had metastatic disease and GnRH analogs as ADT were used in 92%. Screening of CV comorbidities and risk factors is depicted in Figure 1: diabetes mellitus and overweight/obesity had the highest and lowest detection frequency, respectively. Compliance with international guidelines recommendations is shown in Table 2. 6% of patients had major CV adverse events: 1% myocardial infarction, 2% stroke and 3% pulmonary embolism.
Conclusions
Screening of CV comorbidities in this Mexican cohort with PC is suboptimal, although greater than reported by similar studies. Treatment adherence to guidelines recommendations contrasts with data from cardio-oncology clinics. This real-world setting report stresses the necessity to develop interventions to overcome the unmet needs in our PC population, as resources are scarce.

eP546
PHYSICAL ACTIVITY CAN BOOST EMOTIONAL QUALITY OF LIFE IN BREAST CANCER SURVIVORS: SUB-SET ANALYSES OF KROG 14-09 NATIONWIDE QUESTIONNAIRE STUDY

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Introduction
To investigate the relation between physical activity (PA) and quality of life (QoL) through nationwide multi-institutional questionnaires.
Methods
Data from 1156 questionnaires obtained from breast cancer survivors after adjuvant radiotherapy were analyzed. After screening uncertain information and heavy activity for PA (>900, minutes/week), 682 questionnaires were available and divided by three groups of inactivity (<150), regular activity (150–450) and moderate activity (<450–900). Global physical activity question, 5-dimensional questionnaire by EuroQol (EQ-5D), EORTC QLQ-BR23 and were used including clinical and socio-demographic information. A linear-to-linear correlation test and Spearman's test for each item of EQ-5D and summation of EQ-5D, respectively and multiple comparison by Tukey test after Kruskal-Wallis analysis for QLQ-BR23 were conducted.
Results
144 (21.1%), 309 (45.3%) and 229 (33.6%) survivors had inactivity, regular PA and moderate PA, respectively. There was no difference for age groups (P=0.246). The age distribution For EQ-5D, mobility (P=0.021), usual activity (P=0.049) and anxiety (P=0.022) were aggravated in inactive PA. The survivors showing scale 5 for summation of EQ-5D (the best score on all 5 items) were 24.8%, 32.1% and 39.0% for inactive, regular and moderate PA, respectively and the extent of PA was inversely correlated with summation of EQ-5D (P=0.004). For QLQ-BR23, systematic therapy symptom (P=0.010), and body image (P=0.048) and future perspective (P=0.004) for functional area were improved by regular and moderate PA. However, the differences between regular and moderate PA were insignificant in all areas.
Conclusions
Emotional QoL as well as physical QoL could be improved by PA and PA duration had only a minimal effect.

eP547
CHARACTERIZING PSYCHOBEHAVIORAL RISKS IN SURVIVORS OF MULTIPLE PRIMARY CANCERS

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Introduction
Growing numbers of cancer survivors with multiple primary cancer (MPC) diagnoses are at risk for negative outcomes. Previous studies of psychological factors in this population have lacked conceptual models to guide inquiry. Using an adapted psychobehavioral stress-response model, this study evaluated hypothesized conceptual relationships in adult MPC survivors. The model was tested through examination of associations among latent variables (perceived stress, psychological and behavioral responses, financial toxicity, social role, and physical health) and explored associations between individual characteristics and latent variables.
Methods
Adult MPC survivors (n=211) with first cancers (stages I-III) diagnosed within 1-10 years were recruited via tumor registry. Cross-sectional data included valid, reliable self-report questionnaires, tumor registry data, and medical record review. Structural equation modeling was performed to fit, test, and modify the hypothesized model.
Results
Following modifications, a four-factor measurement model provided a good fit to data including: self-management behavior, distress, financial toxicity, and functional health latent variables; modified linear relations among latent variables; and covariate adjustment, $\chi 2(200, N=206)=332.06$, $p<.01$; TLI=.95, CFI=.96, SRMR=.06, RMSEA=.06. Overweight BMI, higher education, less neuroticism, and higher social support predicted better self-management; poorer self-management, greater neuroticism, and lower social support predicted increased distress; greater distress predicted financial toxicity; and greater distress and financial toxicity predicted poorer functional health (all $p<.05$).
Conclusions
Self-management behavior and distress represent modifiable targets for future interventions to mitigate financial toxicity and improve functional health. MPC survivors with high BMIs, less education, greater neuroticism, and lower social support should be considered at risk for poorer self-management behavior and negative outcomes.

eP548
FINANCIAL NEEDS OF HOUSEHOLDS AFFECTED BY BREAST CANCER IN A MIDDLE-INCOME SETTING

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Introduction
Financial toxicity following cancer negatively impacts treatment adherence, as well as the quality of life, and future prospects of cancer-stricken families. We sought to gain an in-depth understanding on financial needs of households affected by breast cancer in a middle-income setting.
Methods
Twelve focus group discussions were conducted with women diagnosed with breast cancer at least one year prior to the study. Patients of various socio-demographic backgrounds and cancer stages were recruited from

five public and private Malaysian hospitals. Data were examined using thematic content analysis.

Results

Three major themes were identified. 1) Health costs; mainly covered conventional medical care including second opinions, reconstruction surgeries, adjuvant therapies, breast prosthesis, and outpatient consultations. Apart from having to "pay out-of-pocket" for many items that were not covered, participants with health insurance lamented on the burden of "paying first, then claim". Citing "the need to try", patients also reported spending on complementary medical goods and services including dietary supplements, organic food, and traditional medicine. 2) Non-health costs; included expenditures for transportation, parking, childcare, and hiring domestic helpers. 3) Employment and earnings; the loss of earnings by patients and their caregivers strained household finances. Returning to work remained a major challenge. Employed patients frequently voiced dissatisfaction over difficulties in accessing welfare support from the government-owned Social Security Organization.

Conclusions

Health insurance coverage in resource-limited settings must be tailored to meet the needs of cancer patients. Besides health insurance, national policies must focus on establishing efficient welfare support programs and income protection schemes for cancer-stricken households.

eP549

WEIGHT TRENDS AMOUNG WOMEN ENGAGING IN EXERCISE AND NUTRITIONAL COUNSELLING AS SUPPORTIVE CARE DURING ADJUVANT BREAST CANCER TREATMENT

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Introduction

Weight gain commonly occurs in women undergoing treatment for breast cancer. In addition to body image issues and psychological distress, weight gain is associated with an increased risk of cardiovascular disease and cancer recurrence, as well as poorer survival.

Methods

Women with early stage breast cancer were enrolled into the Nutrition and Exercise during adjuvant Treatment (NExT) study within the first half of their prescribed chemotherapy. Group-based, supervised aerobic and resistance exercise training was performed 3x/week during adjuvant treatment (chemotherapy +/- radiation) and 1-2x/week for 20 weeks post-treatment. Participants also attended a single group-based healthy eating information session with a registered dietitian. Weight (WT) and waist circumference (WC) were measured at baseline (n=73) and three additional timepoints including end of adjuvant treatment (T1) (n=57), end of program (T2) (n=59) and one-year follow-up (T3) (n=46). Each outcome was analyzed using a generalized linear mixed model and Bonferroni adjustment for multiple comparisons was used to detect significant differences ($p<0.01$) between timepoints.

Results

There was no increase in WT or WC observed from baseline to any successive timepoint ($p>0.05$). The WT trend from baseline was -1.1 kg(T1), -2.2 kg(T2) and -2.7 kg(T3). The WC trend was -2 cm(T1), -4 cm(T2) and -5 cm(T3) which reached statistical signifcance at end of program and one-year follow-up ($p<0.01$).

Conclusions

Women engaging in supervised exercise training and nutritional counseling as supportive care were able to maintain their weight during adjuvant breast cancer therapy. With continued exercise training following completion of cancer treatment women demonstrated significant reductions in WC.

eP550

NURSING EXPERIENCE OF CARING FOR A PATIENT WITH ISCHEMIC STROKE AND ESOPHAGEAL CANCER WITH DYSPHAGIA

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Introduction

This study describes a first-time acute stroke patient(a 66-year-old female), who was found to be suffering from weakness in the left hand and dysphagia, after combine Esophageal Cancer, underwent nasogastric intubation as a result, and subsequently refused rehabilitation as she was depressed and unable to accept her condition.

Methods

From December 29th, 2016, to January 7th, 2016, the author utilized a variety of methods, including direct care, physical assessments, face-to-face interviews, and Gordon's 11 functional health patterns, to collect and analyze data, which revealed that the patient was primarily suffering from impaired physical mobility, dysphagia, and body image disturbance.

Results

The patient's rehabilitation status was observed, nasogastric tube feeding and nursing guidance were provided, active care and listening were implemented, the patient was encouraged to express her feelings, cooperation with a cross-specialty team, a swallowing and upper-limb rehabilitation program was developed, and the patient's family members participated in her rehabilitation activities, resulting in the patient's nasogastric tube being successfully removed and the restoration of strength in her left hand.

Conclusions

It is hoped that this nursing experience can provide guidance to clinical nurses on the use of empathy and the provision of care to patients, such that patients will be able to face themselves and accept the changes they undergo and so that appropriate rehabilitation programs for patients can be designed, thus increasing their willingness to cooperate in their treatment and rehabilitation and, in turn, allowing them to regain their pre-illness status as soon as possible.

eP551

PERSPECTIVES OF SURVIVORSHIP CARE PLANS AMONG OLDER BREAST CANCER SURVIVORS: A PILOT STUDY

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Introduction

The Commission on Cancer's (CoC) Standard 3.3 requires that at least 50% of patients at CoC-accredited hospitals receive survivorship care plans (SCPs) by 2019. A focus on older breast cancer survivors is needed, as they are the majority of the breast cancer population, and their experiences and perspectives about SCPs are limited in the literature.

Methods
This pilot study utilized a mixed methods approach (focus groups and self-report questionnaire data) to gather information from breast cancer survivors age 65 years or older. Topics covered were cancer survivorship, communication with their healthcare providers, and the value of SCPs. Questionnaires were completed individually by the participants prior to the focus group, and contained items on their demographics and health status following cancer treatment.
Results
Only a minority of women who attended the focus groups actually developed a SCP. Those who developed a SCP in collaboration with their providers valued the personal care and attention received. However, some participants reported poor communication with their providers and healthcare team, resulting in frustration and confusion. Participants' suggestions for ideal SCPs included better education and personalization, particularly in appropriate nutrition and exercise, and managing side effects and comorbidities. Lastly, the women believed that additional long-term care resources, such as health coaches, were important in improving their survivorship.
Conclusions
These findings provide insight into enhancing the content, communication, and application of SCPs to improve the survivorship experience of older breast cancer survivors.

eP552
PRIMARY CARE PHYSICIANS' PERSPECTIVES OF THE SURVIVORSHIP CARE FOR OLDER BREAST CANCER SURVIVORS: A PILOT STUDY

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Introduction
Survivorship care plans (SCPs) should be coordinated with multiple healthcare providers including the survivor's primary care physician (PCP). Despite the growing consensus of the importance of PCPs in survivorship care, research examining PCPs' experiences and opinions regarding survivorship care and survivor outcomes under their care is limited.
Methods
This pilot study utilized a web-based questionnaire and semi-structured interviews to evaluate PCPs' role in survivorship care of older breast cancer survivors, their experiences and opinions of SCPs, and suggestions for improving care coordination and facilitation of SCPs among older (≥65 years) breast cancer survivors.
Results
Physician participants (n=29) had an average 13.5 years in practice. PCPs surveyed that their main role was to provide general health promotion and their least common role was to manage late-and/or long-term effects. Semi-structured interviews indicated that the majority of PCPs did not receive a SCP from their patients' oncologists and that communication regarding survivorship care was poor. Participants' suggestions for improvements to SCPs and survivorship care included regular communication with oncologists, delegation from oncologists regarding roles, and mutual understanding of roles.
Conclusions
Participants indicated that survivorship care and SCPs have room for improvement regarding communication and roles related to their patients' survivorship. These findings provide insight into enhancing the content, communication, care coordination, and application of SCPs to ultimately improve the survivorship experience of older breast cancer survivors. More attention needs to focus on the importance of PCPs, as they are an integral part of dual management for older breast cancer survivors post-treatment.

eP553
PROSPECTIVE ASSESSMENT OF QUALITY OF LIFE IN OVARIAN CANCER SURVIVORS

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Introduction
Ovarian cancer treatment consists of extensive surgery with multi-drug chemotherapy and such intensive treatment is associated with significant morbidity. As there is diversity in ovarian cancer survivorship, addressing the issue of Quality-of-life (QOL) is becoming important for themselves and their families. QOL has been used as an endpoint in clinical trials to identify the consequences of cancer treatment, assessment of rehabilitation needs and predict response to future treatment. Our goal was to assess the QOL in long-term ovarian cancer survivors and to identify the factors related to poor QOL.
Methods
In this prospective cross-sectional study, EORTC QOL questionnaires (EORTC QLQ-C30 and OV28) were administered in ovarian cancer survivors on an outpatient basis. All the clinical parameters were tested for association with QOL scores.
Results
A total of 84-women participated and completed the QOL questionnaire. The median age was 45-years (range; 17-72) with 86% having epithelial carcinoma and 14% having germ cell tumors and sex cord stromal tumors. Women with stage-I(50%), II(2.5%), III(43%) and IV(5%) were treated with primary treatment of surgery(16.7%) followed by chemotherapy(73.8%) and radiation(9.5%). Global QOL scores varied with age(p=0.019) and number of chemotherapy cycles(p=0.007). Clinical parameters; age, comorbidities, stage, and number of chemotherapy drugs were associated with significant EORTC scores in physical functioning(p=0.031), role of functioning(p=0.001), cognitive functioning(p=0.002), and social functioning(p=0.001) respectively.
Conclusions
In ovarian cancer survivors clinico-pathological factors; stage, histology, and comorbidities didn't have a significant impact on Global QOL. The number of chemotherapy cycles and drugs has significant impact on financial difficulty QOL scores.

eP554
COMPARISON OF QUALITY OF LIFE AMONG PATIENTS OF LUNG CARCINOMA TREATED WITH CHEMORADIOTHERAPY AND ACCELERATED RADIOTHERAPY

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Introduction
Lung cancer is the leading cause of cancer deaths. Though the use of combined-modality therapy is recommended for locally advanced NSCLC but majority of our patients do not tolerate this treatment and result in poor quality of life. With this study, we aim to find out whether

we can achieve better quality of life with comparable local control, tolerability and survival with Accelerated radiotherapy (ART) in comparison to that of conventional chemo-radiation(CRT). We did this study to compare the quality of life in patients recieving accelerated radiation (six fractions per week) and conventional chemoradiation in locally advanced non-small cell lung cancer.

Methods

Total 50 patients were enrolled and randomized into two groups the study(Accelerated Radiation n=25) and control group(Conventional CRT n=25). Quality of life assessment was done using Quality Of Life Questionnaire –Core 30(QLQ-C30).

Results

Our study showed comparable improvement in Qol parameters in both arms. The parameters which developed or worsened on treatment were: dysphagia, parasthesia, alopecia and sore mouth. Alopecia and sore mouth worsening was more in control arm and it was statistically significant.

Conclusions

Better QOL parameters scores were observed in ART arm. Hence ART may prove a good alternate to concurrent CRT in lung cancer patients who are not a suitable candidate for CRT.

eP555

NATIONAL CANCER SURVIVORSHIP NEEDS ASSESSMENT: A SCOPING REVIEW AND MAPPING OF CANCER SURVIVORSHIP SERVICES IN THE IRISH CONTEXT

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Introduction

Cancer is recognised as a most prominent healthcare condition with predictions of 21.7 million cases (excluding non-melanoma skin cancer) by 2030. Improvements in surveillance and treatments, has resulted in increasing numbers of individuals living beyond a cancer diagnosis. As a result, provision of care and support to individuals throughout cancer survivorship has become a key area of interest for policy makers, practitioners and researchers.

Objectives: To conduct a National Cancer Survivorship Needs Assessment to ascertain the most suitable model of survivorship health care for use in Ireland.

Methods

Three phases: (1) a scoping review (n=44 papers); (2) focus group interviews with healthcare professionals (n=49); and (3) an online survey distributed (n=184).

Results

Models of survivorship care were generally categorised by either the person who led the care or by the setting. Qualitative themes identified were: the needs of patients and their families, key survivorship principles and the requirement for a designated survivorship pathway. The most commonly cited available cancer survivorship services included: patients having an identified person whom they could contact (90%); informing patients about late/chronic effects (75%); and a follow up-care plan communicated to the general practitioner once treatment completed (67%). Healthcare professionals noted the need for a survivorship pathway underpinned by the key survivorship principles of Assess, Link in, Link out and onward, Inform, Empower, Support and Services abbreviated to "ALLIES during cancer survivorship".

Conclusions

There is substantial variation in the types of cancer survivorship care offered which can be rectified through having a clearly defined and resourced cancer survivorship pathway.

eP556

USE OF, INTEREST IN AND BELIEF IN EFFECTS OF ACUPUNCTURE IN INDIVIDUALS WITH CANCER AND IN NON-CANCER INDIVIDUALS

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Introduction

Patients ask for acupuncture for cancer-therapy induced side-effects and cancer care need to explore their interest to be able to meet their caring needs. The aim of this study was to explore the use of acupuncture and belief in acupuncture effects among patients with cancer and non-cancer individuals, and to compare beliefs in acupuncture effects between subgroups of study participants.

Methods

A total of 820 participants answered a study-questionnaire: 457 patients with cancer during radiotherapy and 363 non-cancer individuals.

Results

Of the patients with cancer, four (1%) had used acupuncture during their cancer therapy, 368 (83%) were interested in receiving acupuncture, and 289 (63%) believed acupuncture to have effect on at least one symptom. Of the non-cancer individuals, 33 (9%) had used acupuncture within the past year, 262 (78%) were interested in receiving acupuncture, and 308 (85%) believed acupuncture to have effect on at least one symptom. Women ($p<0.001$), individuals younger than 65 years ($p<0.001$), and non-cancer individuals ($p<0.001$) expressed higher belief in the efficacy of acupuncture than others.

Conclusions

Few patients used acupuncture during cancer therapy but two thirds believed acupuncture to be effective, and more than 80% were interested in receiving acupuncture. One of ten non-cancer individuals had used acupuncture within the preceding year, nine of ten believed acupuncture to be effective and three quarters were interested in receiving acupuncture. The observed subgroup differences in beliefs indicate the importance of collecting expectancy data in future acupuncture efficacy studies to be able to treat expectancy as an effect-moderator.

eP557

NORDIC POLE WALKING FOR INDIVIDUALS WITH CANCER: A FEASIBILITY STUDY

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Introduction

Individuals with cancer experience high symptom burden that impacts their quality of life. An individualized, community-based Nordic pole walking (NPW) program may help.

OBJECTIVES: Primary objective: assess the feasibility of a NPW program for individuals with non-small cell lung (NSCLC), prostate, colorectal, and endometrial cancer. Secondary objective:

determine the effects of NPW on physical function and health-related quality of life (HRQoL).

Methods

Eight-week multi-centred randomized controlled feasibility study: NPW (supervised and independent NPW sessions) or control (usual daily routine). The Thabane four-criterion framework (2010) assessed feasibility (Process, Resources, Management, Scientific). Descriptive and non-parametric comparative statistics assessed effects of NPW over time and between groups.

Results

N=8 were recruited, mean age 67 years. The study was feasible with recommended modifications: 1) recruit participants at hospital cancer centres; 2) individualize NPW and integrate behavioural change techniques; 3) use pedometers or accelerometers to measure physical activity levels; 4) organize NPW NSCLC programs alongside programs for other chronic respiratory diseases. Compared to baseline, the NPW group had a significant improvement in the 30-s chair stand test (median 10.5 to 14.3, $p<0.05$) and decreased thigh circumference (median right thigh: 49.4 to 48.5cm; left thigh: 49.0 to 46.3cm, $p<0.05$). There were no significant improvements between groups, though there was a trend toward improved physical activity and HRQoL

Conclusions

Examining the effects of NPW on individuals diagnosed with cancer is feasible with modifications, and may improve physical function. Further research with larger sample sizes should be completed to more conclusively determine the impact of NPW.

eP558

LIFE AFTER TREATMENT WITH EXTERNAL RADIATION THERAPY AND BRACHYTHERAPY, IN PATIENTS SUFFERING FROM CANCER IN THE BASE OF THE TONGUE

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Introduction

Brachytherapy is a treatment option for cancer of the base of the tongue. This includes external radiation- and brachytherapy in form of pulsed dose rated radiation. Brachytherapy is given every two hours during 24 hours via permanent catheters during 3.5 days. The aim of the study was to describe how people diagnosed with base of tongue cancer experience the time after combination therapy with external radiation therapy and brachytherapy.

Methods

The study has a qualitative method with a descriptive design. Data was collected by semi structured interviews. Eight participants who received brachytherapy against cancer of the base of tongue were interviewed. The analysis was conducted with qualitative content analysis.

Results

The patients described that they had a changed body that led to a new life that needed new solutions in their everyday life. Dry mouth affected their life to a greater extent than they ever expected. The relationship to food and taste changed, as it lost its pleasure and changed their social context. Their energy declined and the patients were unprepared for the increased inconvenience and the impact on life. Uncertainty about if the side effects would be permanent as well as an anxiety and fear that the cancer would return were present.

Conclusions

The results of this study highlights the impact of the treatment is greater than they expected. The result can provide insight into the problems that may arise for the patient after treatment as well as possibilities to tailor interventions targeting improvement in the information and care.

eP559

A CROSS-SECTIONAL POPULATION-BASED SURVEY LOOKING AT THE IMPACT OF CANCER SURVIVORSHIP CARE PLANS ON MEETING THE NEEDS OF CANCER SURVIVORS

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Introduction

In 2005, the Institute of Medicine endorsed survivorship care plans (SCP) with insufficient evidence under the assumption that SCPs would improve care. To date, there have been numerous studies on their effectiveness with mostly inconclusive results. The purpose of this study was to determine the impact of receiving a survivorship care plan (SCP) on meeting cancer survivors' overall, informational, physical, emotional and practical needs. It was hypothesized that those who received a SCP would have greater needs met than those who did not receive a SCP.

Methods

All Nova Scotia survivors who met specific inclusion criteria and unmet the exclusion criteria were identified from the Nova Scotia Cancer Registry and sent the 83-item survey to assess experiences and needs across five domains (overall, informational, physical, emotional and practical). Descriptive statistics (frequencies, percentages) and Chi-square analyses were used to examine and report survey findings.

Results

The response rate was 44.6%, with 1514 respondents. SCPs were significantly associated ($p<0.00001$) with receiving timely help and support to meet survivors' overall, informational, physical, emotional and practical needs post-treatment. For the most part, survivors' clinical characteristics, such as cancer type, time since treatment, chronic comorbidities and metastases, did not result in differences among the five outcomes.

Conclusions

Those who received a SCP reported higher agreement on all five outcomes in comparison to those who did not receive a SCP. Further work should evaluate the delivery of SCPs and the components of SCPs that are most likely to contribute to positive survivor outcomes.

eP560

EFFECTS OF LAUGHTER YOGA ON CANCER SURVIVORS' STRESS LEVELS

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Introduction

Cancer survivors usually experience considerable stress, which has depressive effects on their daily life. This study clarified whether laughter yoga helps in reducing the psychological stress of cancer survivors.

Methods

Participants were recruited through posters and newspaper advertisements; they had to participate in 50-minute laughter yoga sessions conducted by a yoga teacher. The participants were four female and one male cancer survivors; two had survived breast cancer; the remaining three were each gastric, lung, and prostate cancer survivors. Their saliva was taken to measure salivary cortisol and they completed the Center for Epidemiologic Studies Depression(CES-D) Scale and the questionnaire about relaxing state.

Results
The participants were aged 56-72 years. One participant was suspected to suffer from depression, considering the score of 35 points on CES-D; however, the other four participants scored less than 15 points The mean of salivary cortisol before and after the laughter yoga sessions was 0.170 ±0.044μg/dL and 0.118±0.049μg/dL, respectively; thus, the mean of salivary cortisol significantly decreased after the laughter yoga ($p = 0.042$). There were no significant differences in the mean of relax score ($p = 0.066$) before (27.2±6.4) and after (34.2±4.9) the laughter yoga sessions.
Conclusions
The results of the five participants indicate that the laughter yoga may have reduced psychological stress, yielding relaxing benefits.

eP561
THE RELATIONSHIPS AMONG AUTONOMY PREFERENCE, DEPRESSION AND QUALITY OF LIFE FOR THE GASTROINTESTINAL CANCER PATIENTS IN TAIWAN

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Introduction
Patient expectations about their role in choice and decision making have been influenced by living in a consumer society. The purpose of this cross-sectional study was to explore the relationships among autonomy preference, depression and quality of life (QoL) for the gastrointestinal cancer patients in Taiwan.
Methods
A total of 153 gastrointestinal cancer patients who know their cancer diagnosis were recruited by purposive sampling from the gastrointestinal wards and OPD in a medical center located in northern part of Taiwan. Questionnaires included: characteristic of demographic and disease-related information, Autonomy Preference Index, Taiwanese Depression Questionnaire, EORTC QLQ-C30, and EORTC QLQ-CR29.
Results
Subjects were characterized as: rectal cancer, stage III, male, lower educated, and unemployed. For API scale, the mean of overall score was 46+ 8.6. The mean of subscale _ "when face with physician" was 2.8 + 0.43 whereas the mean of subscale "when faced with family" was 2.9 + 0.64. The levels of "information seeking" subscale was moderate to high (mean=76 +13.1). A moderate level of QoL was reported with a highest satisfaction with "cognition" domain whereas "social" domain was the least satisfied one. A negative correlation was found between depressive symptoms and QoL. Only one vignette and preference in autonomy of information seeking and Information seeking subscale were correlated with certain dimensions of QoL.
Conclusions
Certain relationships existed within autonomy preference, depression and QoL for these subjects. These results could help the health care personnel understand the preference of decision-making and information seeking. Thus, individualized care could be provided.

eP562
TAKING A HOLISTIC APPROACH - SEXUAL HEALTH AND PHYSICAL RADIATION-INDUCED SYMPTOMS AMONG FEMALE PELVIC CANCER SURVIVORS

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Introduction
Radiotherapy is a life-saving treatment for pelvic cancers but may be associated with long-term adverse effects. When cured, many cancer survivors are left with unmet needs and intimate symptoms, which are often too embarrassing and shameful to disclose, and unfortunately seldom inquired about by health-care professionals. The aim of this study is to describe the development of a model that manages late effects among female pelvic cancer survivors in a nurse-led care setting.
Methods
A model for managing late effects in female cancer survivors was developed, and a nurse-led care clinic was established that offers education, medical management, dietary and sexual counselling, self-management and life-style interventions in accordance to evidenced based research. Women who received pelvic radiotherapy from 2007, were identified from 2011 and baseline data was collected by means of a self-reported questionnaire. The questionnaire also served as an inventory of health status and as a foundation to individualize the intervention prior to the visit.
Results
To date more than 900 baseline-questionnaires have been collected. The analysis of both baseline and evaluation data is ongoing.
Conclusions
The study outlined in this protocol present a holistic and person-centered health care approach that supports pelvic cancer survivors in managing late radiotherapy-induced effects. In contrast with previous research, our wide range of questions prior to the visit gives rich insights to the survivors' present physical status, especially concerning private issues such as sexual health and incontinence of feces. The unique data-set will contribute to future development of evidence-based management strategies in pelvic cancer rehabilitation.

eP563
COMMON CANCEROUS CAUSE OF DEATH IN NORTHERN CITY OF RAJSHAHI, BANGLADESH

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Introduction
Cancer is one of the main reasons of mortality in the world. Cancer is of huge concern for the world and is the cause of millions of deaths each year and most of the world's cancer cases are now in developing countries including Bangladesh.
Methods
It is a descriptive cross-sectional study. Our study population included all the diagnosed cancer cases in public and private pathology centers of northern city of Rajshahi, Bangladesh from January- August 2018. Sampling method was census. Descriptive statistics were used to state the results.
Results
All under study patients were 820 whom their cancers were diagnosed in pathology centers of northern city of Rajshahi. Stomach cancer is the most common cancer among patients; breast cancer and colon cancer are in the next ranks after it respectively. The first five cancerous causes of death among Rajshahi City population were as; neoplasm of stomach, gallbladder, liver, colon and lung respectively.
Conclusions
Generally, having ignored the observed differences in distribution of the frequency of cancers in Rajshahi City from global and country patterns, the most common diagnosed types of cancers in this city are related to stomach and breast which is congruent with country pattern. Local epidemiological information about most common cancerous diseases and most common cancerous cause of death in Rajshahi city can be used to evidence based decision making by health manager, and help them to more effective interventions toward primary, secondary and tertiary prevention.

eP564

SPEECH PATHOLOGY IN CANCER SURVIVORSHIP – SURPRISES AND LESSONS

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Introduction

Over the last 2 years, I had my first experience in working with people with cancer. After 25 years of clinical practice, a PhD, and 8 years working as an academic, I was suddenly immersed in a caseload I did not feel comfortable with. I did not feel like I was an "expert" in "cancer".

I soon learned the "experts" were my patients. I am a speech pathologist working in rural Victoria, Australia. After specialising in working with people with a neurological diagnosis, I now was also working with people with cancer.

I had a lot to learn.

Methods

Talking to people that had had treatment for cancer opened my eyes to the things that really mattered: "sounding normal", "having a beer", "being able to get up onto the tractor", "eating pork crackling", and "being OK with dying".

I received referrals from my team for people with breast cancer, lung cancer, prostate cancer, ovarian cancer, brain cancer, and other malignancies. Difficulties with word finding, being seen as "retarded", remembering names, swallowing, and wanting to be a "Jazz Singer" once again were recognised by my team as a flag to refer to speech pathology.

Results

The Speech Pathologist plays a vital role in the cancer survivorship team. From preventing aspiration pneumonia, to giving survivors a voice. A loud voice.

Conclusions

A Speech Pathologist should be a member of every Cancer Survivorship team.

eP565

PROMOTION OF LYMPHEDEMA TREATMENT IN JAPAN: EDUCATION AND TRAINING ACTIVITIES FOR LYMPHEDEMA THERAPISTS

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Introduction

The number of professional lymphedema therapists in Japan is small. In 2009, as a commissioned project by the Ministry of Health, Labour and Welfare, the Lymphedema Training Steering Committee (LTSC) was organized. The LTSC created "educational guidelines for professional lymphedema training". The training time was over 100 hours (33 hours of classroom, 67 hours of practical training). In line with these guidelines, as training for the classroom part, the LTSC started the classroom course in 2013. The aim of this study was to evaluate the effect of the lymphedema training program.

Methods

The classroom course program is based on lectures, case studies, and demonstration. Those who complete this course proceed to the accredited lymphedema therapist practical training school nationwide. In this study, the demographic data of all participants of the classroom course were analyzed.

Results

Seven courses were delivered from 2015 to 2017(1926 people qualified). The results of the questionnaire survey after the first classroom course in 2017 are shown below. Of the 294 people who participated. Concerning the degree of comprehension, 275 people (93.5%) answered "I understood enough or mostly". Regarding the satisfaction level, 287 people (97.6%) answered "very satisfied or satisfied". Regarding behavioral change, 290 (98.6%) responded that they would like to incorporate the contents of the training into future medical treatment.

Conclusions

This survey demonstrated that many multi-disciplinary health professionals have been educated by our classroom course. In order to foster professional lymphedema therapists whose quality is assured, we will brush up our classroom course.

eP566

FACTORS AFFECTING QUALITY OF LIFE IN CERVICAL CANCER PATIENTS

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Introduction

Apart from good clinical management of cervical cancer patients it is also important to take care of the quality of life (QOL) of these cancer survivors. To improve the QOL understanding of the factors which affect it is essential. The objective of this study was to find out these various factors so that by modifying these factors, the best quality of life can be provided to them.

Methods

This was a prospective cohort study which was conducted in the Department of Obstetrics and Gynaecology and Department of Radiotherapy, King George's Medical University, Lucknow. The cases were selected from patients visiting the OPD or who were admitted in the Department of Obstetrics and Gynaecology and Department of Radiotherapy, KGMU. The data information was collected in form of face to face interview using EORTC QLQ C30 and EORTC QLQ-Cx24 questionnaire.

Results
90 subjects fulfilling the set criteria were selected for the study. Subsequently out of 90 patients 5 cases were lost to follow up. 3 patients expired before the completion of the treatment while 1 was lost tofollow up and 1 developed vesicovaginal fistula. Finally data information was from 85 patients. Health related quality of life was separately studied in terms of overall General quality of life and cancer cervix specific quality of life and various factors affecting QoL were studied by multivariate analysis.
Conclusions
Education, tobacco use, degree of differentiation of tumor, size of tumor were independent factors found to have statistically significant effect on QOL of cervical cancer survivors.

eP567
THE FEMALE PERSPECTIVE - A CROSS-SECTIONAL STUDY ON CANCER REHABILITATION NEEDS, SOCIAL STIGMA AND QUALITY OF LIFE IN WOMEN WITH CANCER

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Introduction
Medical advances within oncology are resulting in greater nursing challenges and managing symptoms is the core of oncology nurses' role. Gynecological cancer and breast cancer has a mental connection to the female body, and may have a negative impact on the women's self esteem and quality of life.
Most societies value men higher than women. Living in a society where men and women aren't equal is likely to affect women's health. Even though men and women are at risk for the same endemic diseases, women may have an increased risk due to biological and social factors which may also result in reporting symptoms different.
Methods
The study population is adult female cancer patients living in the region of Örebro County, diagnosed with cancer during a one year period. Through the Information Network for Cancer, 521 women were identified. A cross-sectional survey study was conducted using postal questionnaires. Data were analyzed using descriptive and analytic statistics.
Results
One third of the women reported to have no or low interest in cancer rehabilitation needs (30.5%). Several rehabilitation interventions were wanted by more than 25% of the women. Most wanted intervention was *Information and supportive groups with people with the same diagnosis* (38%). Both *Avoidance scale* and *Distress scale* were found to correlate negatively with all items of the quality of life questionnaire.
Conclusions
Nursing should focus on individual needs, not solely patient characteristics. Further studies need to provide knowledge on the complexity of cancer rehabilitation needs. The authors welcome gender perspectives on future research.

eP568
INTERPRETATION AND ACCEPTANCE OF THE TERMS USED BY THE CATEGORIZATION: "CHRONIC", "LONG-TERM" AND "CURED". A PRELIMINARY STUDY.

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Introduction
Patients categorization aim to bring survivorship into personalized medicine era. People who have cancer develop different experiences of illness and therefore manifest different needs. We evaluated the impact of categorization that takes into account the stages of disease (acute, chronic, long-term, cured) in a cohort of cancer patients.
Methods
The monophasic and monocentric study was conducted on a sample of 50 patients, 26% male and 74% female, with at least 5 years from the diagnosis of breast cancer (48%), gynecological (12%), gastro-intestinal tract (30%), genitourinary tract (8%), other (2%); 32% of the sample consists of patients defined by the oncologist "chronic"; 4% "long-term" patients; 64% "cured". Through a semi-structured interview, they were asked if they believed that their experience of illness was due to a condition of recovery or a condition with or without disease; the interpretations of the terms were examined.
Results
72% of respondents accepted the use of the term used to define their own phase of illness. 12% believe that these terms represent a label, it is not so for 66%; 22% can not answer. Patients were also asked which other term would be suitable to identify the condition of the person who lives or lived cancer, 48% said "that's okay", 36% do not know which other term to indicate, the remaining 16% gave answers such as "lucky", "unlucky", "normal", "brave".
Conclusions
From the results that emerged, it is assumed that the terms "chronic", "long-term" and "cured" reflect the condition of the interviewees' without representing a label.

eP569
EXPERIENCE OF WOMEN WITH BREAST CANCER REGARDING CHEMOTHERAPY: A SYSTEMATIC REVIEW OF QUALITATIVE RESEARCH

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Introduction
The aim of this review was to systematically identify, appraise, and synthesize qualitative research evidence on the experience of breast cancer patients receiving chemotherapy.
Methods
A systematic search of the literature was performed in February 2018. Qualitative studies were included if they investigated breast cancer, chemotherapy and patient experience. Quality of the articles was appraised using a standardized critical appraisal instrument from the Joanna Briggs Institute System. Themes were identified using the meta-aggregation from Joanna Briggs Institute methodology.
Results
Thirteen articles presented findings generated by 211 patients who had all received chemotherapy. Sample sizes of the included studies varied from 7 to 30 patients; studies originated from 9 countries and were published between 2000 and 2017. Five analytical themes emerged: (1) prepare for chemotherapy, (2) side effect, (3) influence, (4) adjustment, and(5) adaptation.
Conclusions
Receiving chemotherapy for breast cancer patients is a challenging experience, so they struggled with their situation, mobilize all resources and capabilities to survive and finally reached a adaptive status. Research projects should focus on the experiences of breast cancer patients throughout the whole chemotherapy journey and researchers should develop evidence-based interventions to improve the quality of life, social participation, and functioning of breast cancer patients.

eP570
"HANGING ONTO MY JOINTS": A QUALITATIVE STUDY TO EXPLORE THE EXPERIENCE OF OSTEONECROSIS IN TEENAGERS AND YOUNG ADULTS LIVING WITH AND BEYOND CANCER.

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Introduction
Osteonecrosis (ON) is a painful, disabling and long-lasting side effect of cancer treatment in teenagers and young adults (TYAs, aged 16 to 24 years). It involves the degeneration and collapse of affected joints, and has no cure. However, little is known about the impact of ON on affected TYAs. This study therefore aimed to explore the experience of ON in TYAs living with and beyond cancer.
Methods
This single-centre study was based at a specialist centre for TYAs with cancer in England. Eligible individuals were those who had received (or were continuing to receive) treatment for any form of cancer between the ages of 16 and 24 years; had been diagnosed with ON of any anatomical region; and were aged between 16 and 30 years at the time of recruitment. Data were collected via semi-structured interviews, and analysed using thematic analysis.
Results
Eight young people with ON participated in the study. Thematic analysis produced four themes related to the experience of cancer-related ON in TYAs: loss, uncertainty, "juggling act" and psychological wellbeing. Participants found the impact of ON to be entirely negative.
Conclusions
This study is the first to explore the experience of ON in TYAs living with and beyond cancer. Findings suggest that ON has a wide-ranging, negative impact, producing additional challenges and uncertainties in the context of lives already disrupted by cancer. Future research into multiple aspects of cancer-related ON in TYAs is required, in addition to improvements in the information and support provided to those with the condition.

eP571
IDENTIFYING PSYCHOSOCIAL CLINICAL PRACTISE GUIDELINES FOR LYMPHOMA SURVIVORSHIP

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Introduction
Lymphoma cancer survivors are a rapidly increasing population with unique supportive care needs related to treatment effects and a demographic profile comprised of both adolescent, young adults, and older individuals. The purpose to this project was to identify the availability of clinical practice guidelines for psychosocial supportive care of lymphoma survivors.
Methods
We conducted a systematic literature search of bibliographic databases (Ovid MEDLINE, EMBASE) from database inception to Dec 2018. The search for grey literature included the Trip database and websites of international cancer care organizations, oncology-related professional associations, and guideline developers. An academic health science librarian verified the search and a clinical expert was consulted to identify any additional clinical resources not identified through the previous methods. Screening was conducted by a single reviewer and selected guidelines were reviewed by a second reviewer for consensus.
Results
Of 1806 citations screened, a total of two clinical practice guidelines met the eligibility criteria. Both guidelines were developed by the same organization but addressed different lymphoma subtypes. In both guidelines, recommendations for psychosocial supportive care were based on generalized survivorship care recommendations for all cancer survivors and lacked specificity related to lymphoma survivors.
Conclusions
Currently, a lack of available clinical practice guidelines addressing the psychosocial supportive care specific to lymphoma survivors exists. Moving forward, is it beneficial to lymphoma survivors and clinician stakeholders to establish clinical guidelines on psychosocial supportive care in order to address the increasing need for psychosocial supportive care for the growing lymphoma cancer survivor population.

eP572
DEVELOPING A FLEXIBLE SUPPORTIVE CARE/REHABILITATION FRAMEWORK TO ENSURE CONSISTENT CARE TO ALL PATIENTS ACROSS A NATION.

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Introduction
Icon Group is Australia's largest dedicated provider of cancer care with 28 departments across the nation delivering all aspects of cancer care. Our delivery of service is varied across the group and one size does not fit all. To ensure our patients receive the best possible comprehensive care as close to home as possible we have developed a framework for a flexible, scalable, sustainable model of supportive care/rehabilitation programs.
Methods
Identify key principles to underpin the model
Develop framework that accommodates common tumours streams at each department
Identify key local service providers and engage all stakeholders
Implement framework into existing workflows
Evaluate programme through patient and stakeholder feedback
Results
Supportive care and rehabilitation programs are now part of standard care for all patients attending Icon Cancer Centres. The flexible framework allows for innovation in care delivery e.g. telehealth-allied health providers in our remote centres and utilises local service providers where possible. Having a framework ensures consistency across the group and allows for scalability as services grow. Evaluation has seem improved patient experience, satisfaction and outcomes.
Conclusions
A flexible framework for supportive care/rehabilitation services ensures consistent cancer care is available to as many patients as possible as close to home as possible across the nation. Engaging local service providers allows each department to monitor and evaluate satisfaction with service and patient outcomes. has benefits for the patients, Icon Cancer Centres and the local communities'.

eP573
INDIVIDUALISED CANCER REHABILITATION: DEVELOPING A COORDINATED AND COMPREHENSIVE SERVICE MODEL IN A RURAL AUSTRALIAN HOSPITAL

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Introduction
In 2016, Castlemaine Health received a Victorian government grant to establish a cancer rehabilitation service. At the time it was common for clients with a cancer diagnosis to be overlooked for multidisciplinary assessment and intervention, and to be seen by clinicians without specific training in cancer care. The model of care sought to offer comprehensive, coordinated and tailored intervention to address the complex range of problems faced by cancer survivors.
Methods
Existing allied health and nursing resources were re-oriented into a new cancer-specific stream. A team of clinicians (Figure 1) were

upskilled to provide a coordinated outpatient cancer rehabilitation service, shaped by consumer input.

Clients participated in a comprehensive initial needs assessment that informed an individualised goal-directed care plan. The plans addressed a broad range of physical, emotional, social and practical needs often experienced by cancer survivors.

Figure 1

Results

During the first year, 60 people were referred to the service (Figure 2). Clients set an average of four goals, with 76 percent of goals attained at discharge. The most frequently reported problems at baseline were fatigue (73%), pain (49%) nervousness (46%) and poor memory/concentration (46%). Clients' health-related quality of life improved (Figure 3) and staff reported an increased confidence in their knowledge and skills.

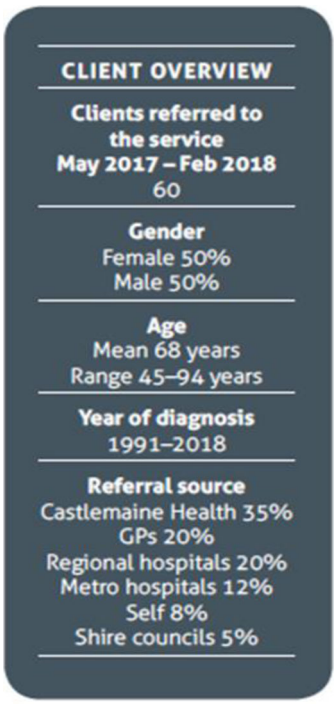

Figure 2

Conclusions

The service addressed a gap in local clinical expertise, reduced the burden of travel for rural survivors and improved their quality of life. The model of care enabled a broad range of concerns to be addressed for cancer survivors in a comprehensive and coordinated rehabilitation model.

eP574

THE ROLE AND FEASIBILITY OF A PRE-HABILITATION PROSTATE CANCER PRE-OPERATIVE EMPOWERMENT PROGRAM (PC-PEP) IN THE QUALITY OF LIFE OF SURVIVORS, SHORT- AND LONG- TERM

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Introduction

Each year over 20,000 men are diagnosed with prostate cancer (PCa) in Canada with the majority undergoing radical surgery and/or radiotherapy. Short- and long-term side effects of active forms of PCa treatment include urinary incontinence, sexual dysfunction, emotional distress and reduced physical function. In a feasibility study of a 28-day home-based program we assessed the adherence rates for the various components of the program (physical exercise, diet, meditation, sleep habits, social connection), program compliance, protocol feasibility, impediments that may restrict patient adherence to this program, the usefulness of technology in maintaining adherence to the program, patient use of this technology, and whether the use of social support was beneficial to participants.

Methods

30 PCa patients and survivors with email access, who did not have any health conditions that prevented them from exercising, participated in the study. Program compliance was assessed weekly, for four weeks. Physical and quality of life (QoL) measurements were performed pre- and post- intervention.

Results

Physical (BMI, heart rate variability, EEG) and psychological (QoL) changes from pre- to post- intervention assessment along with aspects of the program that were revealed to require changes, and an assessment of the use of technology for delivering a pre- habilitation program in this population will be revealed and discussed.

Conclusions

Results show that pre-habilitation – preventive life habits programs that can empower men and address many of the issues faced by men undergoing active forms of PCa treatments - are well received and adopted by patients and survivors.

eP575
QUALITY OF LIFE IN TREATED ORAL CANCER PATIENTS

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Introduction
India contributes to nearly one third of Oral Cancers in the world and is the most common cancer in males and third most cancer in females. The mortality due to oral cancer has decreased in the last two decades due to a number of reasons, which include better surgical techniques, newer chemotherapeutic drugs, better radiotherapy, and also due to low malignant potential. However, Surgery is ssociated with both functional and structural morbidities. Study was undertaken to assess the quality of life in Oral cancers (excluding tongue) following reconstruction.
Methods
The prospective study was done at the K G Medical University, from 2012 to 2017, in whom surgical extirpation was followed by reconstruction. All patients were assessed for quality of life at 6 months and 12 months. University of Washington – Quality of Life version 4.1was used. It encompasses physical attributes, functional status and mental parameters. Normative scores were collected from 50 patients who were attending dental out patient department.
Results
328 Patients were analysed individually and collectively. Comparisions were also made between distinct groups (like early staging vs late staging) or between Surgery only vs Surgery plus chemo/ radiotherapy. Type of reconstruction was also taken in relation to the outcome so as far health of the individual was considered.
Conclusions
The results showed an intersting and complex interplay of factors. Education and socioeconomic status also affected the quality of life. Type of reconstruction, post operative adjuvant therapy also affected the health of the individual.

eP576
PHYSIOTHERAPY FOR CHEMOTHERAPY INDUCED PERIPHERAL NEUROPATHY

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Introduction
Chemotherapy induced peripheral neuropathy (CIPN) is a frequent damage of drugs used in the treatment of cancer. This side effect can affect from autonomy, sensor or motor nerve. There are different physiotherapy techniques that can improve or reduce the symptoms of peripheral neuropathy induced by toxicity.
Methods
A systematic review was done in databases Cochrane Library, PEDro, Pubmed, Crown BioSicence, CEBP and ERIC.
Results
There are different physiotherapy techniques that can improve the symptoms of the CIPN, however, none is intended to prevent its appearance. Publications concerning adults and it does not specify if these techniques can be used for pediatric.
Conclusions
There are physiotherapy techniques such as manual therapy, TENS, massage for peripheral neuropathy, specific neuromodulation techniques, including acupuncture, which reduce the symptoms of CIPN in adults.

eP577
PROVIDER PERSPECTIVES ON THE SURVIVORSHIP CARE OF YOUNG AFRICAN AMERICAN BREAST CANCER SURVIVORS: IDENTIFYING NEEDS AND BARRIERS TO CULTURALLY-INFORMED CARE

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Introduction
Survivorship care may require adaptation to account for contextual differences of the intended population (e.g. differences in culture). This presentation describes provider perspectives on the survivorship care of young African American breast cancer survivors.
Methods
In a preliminary study exploring perceptions of a quality of life intervention targeted to young African American survivors, we conducted semi-structured interviews prompting providers to recall care of this population of survivors. Interview transcripts were analyzed using content analysis. Two reviewers independently coded the data. Reviewers iteratively reduced the coding structure until inter-coder agreement was met.
Results
Participants included ten interdisciplinary care providers (registered nurses, advanced practice nurses, physicians, and social workers) with 9-33 years (mean: 21 years) of experience in their professions. Most (60%) saw young African American survivors on a weekly basis. Providers perceived the needs of these survivors were similar to those of other racial/ethnic backgrounds. Providers indicated general ambiguity of culture and cultural needs that would influence the survivorship care provided, rather they addressed individual needs during their discussion of general survivorship topics. Consensus around potential cultural differences from other survivors were young African American survivors' references to the importance of spirituality and extended family for social support.
Conclusions
Care of young African American survivors is predominately need-based. Findings suggest that culture may not be integrated into the survivorship care of these survivors, potentially presenting barriers to optimal assessment and care. Provider cultural competency training may reduce these barriers, improving care acceptability and survivorship outcomes.

eP578
QUALITY OF LIFE AND CAREGIVER BURDEN IN MULTIPLE MYELOMA AND LYMPHOMA PATIENTS AND THEIR CAREGIVERS UNDERGOING OUTPATIENT AUTOLOGOUS STEM CELL TRANSPLANTATION COMPARED TO INPATIENT TRANSPLANTATION

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Introduction
The outpatient setting has now become a standard alternative to the traditional inpatient approach for autologous stem cell transplantation (ASCT) for multiple myeloma and lymphoma. Outpatient ASCT involves family/friends assuming round-the-clock caregiving responsibilities, and though it is perceived as potentially providing superior patient quality of life (QOL), supporting evidence is limited. Furthermore, little is known about caregiver QOL and lost opportunity costs (wages/travel time). Our objectives were to compare QOL of patients and their caregivers in the inpatient vs outpatient settings, and to delineate costs.
Methods
Patients completed 4 questionnaires (FACT-BMT, FACT-Fatigue, EQ5D, and distress impact), and caregivers completed 3 questionnaires (C-QOLC, distress impact, and financial impact). The timepoints were: D0 (baseline), D+7, D+14, D+28 and D+100.

Results
In total, 52 patients and 51 caregivers enrolled (21 inpatients/31 outpatients). Patients' median age was 57 (range: 18-70), and 67% male. Majority of caregivers were spouses (73%). In the overall population, FACT-BMT scores significantly declined at D+7, then increased to above-baseline by D+100. FACT-Fatigue worsened significantly at D+7, then improved to lower than baseline at D+100. Additionally, EQ5D scores (imaginable health status) significantly declined at D+7 and D+14, then increased to above baseline at D+100 (albeit p>0.05). QOL scores were insignificant when comparing inpatients vs. outpatients, though trends still existed. Caregiver QOL scores were consistently higher for inpatients, though insignificant. Average lost opportunity costs for caregivers was $4195.
Conclusions
There was significant deterioration of various aspects of QOL in the overall population. Inpatient caregivers report better QOL than outpatients, though sample size limits further analyses.

eP579
USE OF FUNDRAISING ON SOCIAL MEDIA TO OFFSET COSTS OF CHILDHOOD CANCER

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Introduction
Childhood cancer caregivers use social media (SM) to raise funds to offset cancer-related financial burden from diagnosis through end-of-life. However, the characteristics of SM users for fundraising are poorly understood. The purpose of this analysis was to examine relationships between socio-demographics (race, education level, income level) and SM fundraising among childhood cancer caregivers.
Methods
An online survey was distributed in two support networks by key stakeholders. Data about caregiver education, income, race, and SM use were collected. Frequency counts and Chi square analyses were used to uncover relationships between SM fundraising and race, education or income.
Results
N=209 caregivers responded to questions regarding SM use. Those who used SM for fundraising (N=145) were primarily white (91%) with ≥ a bachelor's degree (50%), and incomes ≤ 200% or less (42%) of the 2018 federal poverty level (FPL). Non-users (N=64) were also primarily white (83%), with ≥ bachelor's degree (63%) and incomes ≤ 200% (27%) of the 2018 FPL. The relationship between SM fundraising and income was significant (chi square=4.56, df=1, p=.033), therefore suggesting an association between income and SM fundraising. Race (chi-square 2.95, df=1, p=.086) and education level (chi square=2.64, df=1, p=.104) were independent of SM fundraising.
Conclusions
Previous research suggested that SM fundraising was more common among wealthier caregivers, however this difference was not significant. Our results support a relationship between income and SM fundraising and indicate that future work should identify the strength and direction of this relationship in order to better understand current coping mechanisms and give direction for future intervention.

eP580
CARING THROUGH MOVEMENT: A PALLIATIVE REHABILITATION PROGRAM IN PATIENTS WITH ADVANCED CANCER

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Introduction
Loss of functionality and symptomatic burden are significant problems in Palliative Care (PC) because of the sense of disability and greater vulnerability. The aim of this study was to evaluate the changes in functional status, symptoms and quality of life of palliative patients with advanced cancer after participating in a rehabilitation program.
Methods
Patients were invited to physical therapy sessions twice weekly during two weeks. Pre-and post-changes in functionality, symptoms and quality of life were measured using the Wilcoxon test and correlations between variables through Spearman test. P value of 0.05 or less was used to determine statistical significance.
Results
Twenty-two patients were included. Statistically significant changes were observed in functionality (6MWT distance p= 0.00008, Karnofsky$p$ = 0.001, ECOG p= 0.005 and FIM p= 0.0003); symptoms (fatigue p= 0.0003, wellbeing p= 0.006, dyspnea p= 0.017 and pain p = 0.011) and quality of life (perception of health status p= 0.0002). Inverse correlation was observed between functionality and depression p= 0.033 and a positive correlation between depression and fatigue p= 0.003.
Conclusions
Rehabilitation dignifies and improves functionality, symptoms and quality of life in patients with advanced cancer, even within the first two weeks of treatment. It should be included in PC as a feasible and potential intervention.

eP581
COMPARISON OF LIFESTYLE BEHAVIORS AND GENERAL HEALTH BETWEEN FEMALE BREAST CANCER SURVIVORS WITH AND WITHOUT DIABETES

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Introduction
Diabetes is associated with an increased incidence of breast cancer as they share some risk factors such as aging, obesity, diet and physical inactivity. But for breast cancer survivors, whether lifestyle behaviors and general health differ between women with and without diabetes is unclear.
Methods
We analyzed data from the 2016 Behavioral Risk Factors Surveillance System (BRFSS), which included a nationally representative sample generated using the multi-stage random sampling methods. Ten states/territories administered the cancer survivorship module. We included adult women diagnosed with breast cancer who had completed cancer treatment at the time of the survey. We excluded women who were underweight. The final sample included 1,106 participants. Variables included general health (poor/fair versus good to excellent), weight (normal versus overweight/obese), physical activity (exercised within the past 30 days), and sleep (<7 hours versus ≥7 hours).
Results
Nearly half of the participants were long-term survivors with more than a 10-year history since diagnosis of breast cancer (48.7%). Results are displayed in the table.

	No diabetes n=916 (82.8%)	Had diabetes n=190 (17.2%)	χ^2
No physical activity	25.4%	48.4%	29.08*
Overweight/Obese	64.0%	86.8%	37.76*
Sleep <7 hours	25.3%	36.8%	10.51*
Fair/Poor Health	19.3%	35.3%	23.25*
Income<35K	36.3%	62.2%	33.67*
Non-White	10.4%	24.7%	28.21*
High school or less	37.3%	51.1%	12.37*

*p<0.001

Conclusions

Among breast cancer survivors, women with diabetes had higher risks for physical inactivity, overweight/obesity, sleep less than 7 hours, and fair/poor health than those without diabetes. Lifestyle interventions are needed to target survivors with diabetes, especially those with low socio-economic status.

eP582

A MULTIDISCIPLINARY PATIENT CENTERED APPROACH TO HEAD AND NECK SURVIVORSHIP CLINIC

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Introduction

Head and neck cancer and associated treatments have significant effects on overall health. Co-morbidities may include dysphagia, odynophagia, changes in voice and communication, musculoskeletal impairments, weight loss, fatigue, constipation, and pain. Integration of cancer rehabilitation in the management of this patient population may improve outcomes.

Methods

Our head and neck outpatient center is affiliated with an academic medical program. A multidisciplinary clinical approach was developed with the goal of improving patient experience and outcomes through enhanced coordination of care.

Patients are evaluated by members of the clinic including a Head and Neck oncology surgeon, and rehabilitation team including a cancer rehabilitation physician, speech-language pathologist, dietitian and lymphedema specialist. Patient self-reported assessments evaluating quality of life and head and neck specific symptoms are completed by the patient before their cancer rehabilitation physician evaluation including the EORTC QLQ-C30 and EORTC H&N35. The cancer rehabilitation evaluation includes a functional assessment and education on topics including exercise and diet.

Results

Our center has been successful in embedding cancer rehabilitation as part of a multidisciplinary approach to supporting the health of this medically complex head and neck cancer patient population. We have been successful in having patients complete patient reported outcome assessments as part of the standard of care prior to their cancer rehabilitation evaluation with a physiatrist.

Conclusions

We have successfully integrated cancer rehabilitation in the management of head and neck cancer patients. We have more to learn about the effectiveness of such an intervention, including a planned analysis of treatment outcomes and patient reported outcomes.

eP583

ON THE PATH TO BETTER HEALTH - 3 STEPS 4 HEALTH

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Introduction

Annie Appleseed Project has been gathering evidence around simple natural steps that can make a big difference in the way people go through cancer treatment. We all agree that there is too much pain and suffering and it can start early on in treatment and sometimes last a very long time. Thus we suggest immediate acceptance and implementation of all 3 Steps.

Methods

Many epidemiological studies suggest that the Mediterranean diet is an excellent one for health. It is has been shown to reduce cancer risks, heart disease, diabetes, etc.

Physical activity/movement/exercise has been well studied and shown to be helpful in any stage of cancer, i.e. in treatment and through survivorship, but also shown to improve overall health. Exercise professionals stressed first 60 minutes a day, then 30 minutes of vigorous physical activity. Lately studies are showing that just ten minutes daily can make a difference.

Stress has been shown to be a major factor in both mental and physical health. It is how stress is handled that seems to matter.

Results

Step 1 of our plan is to eat ONE more fruit and ONE more vegetable each day. We start this so simply because asking people to make huge changes that may benefit their health in many ways, should begin with a step easily taken.

Step 2 of our plan is to take a walk. Start at 'your' level.

Step 3 is take 7 deep breaths before bedtime (sleep issues), before treatment or at any time needed.

Conclusions

This matters to Patients/Survivors.

eP584

CHANGES IN PATIENTS' QUALITY OF LIFE DURING RADIOTHERAPY AND 1 MONTH AFTER TREATMENT

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Introduction

The EORTC QLQ-C30 quality of life(QOL) questionnaire is designed to measure cancerpatients' physical, psychological, and social functions. There are few reports on the impact of radiotherapy(RT) on QOL; thus, we investigated QOL changesduring the RT period and 1 month after RT.

Methods

We scored EORTC QLQ-C30 (version 3.0) questionnaires from 66 patients. The questionnairecontained 30 items, including 1 item on financial concerns, a global health domain, 5 functional domains, 3symptom domains, and 5 single-symptom items. Assessmentswere performed before RT, at the end ofthe day after RT, and 1 month after RT. Correlationsbetween the patients' characteristics (e.g., age, sex, organ, RT response) and QOL change were evaluated.

Results

No specific patient characteristic significantlycorrelated with a QOL change during RT. In 15 QLQC30items, those items in which the change in score achieved statistical significance ($P < 0.05$) were the following:physical function was improved from the endof RT to 1month after RT; role function worsened fromthe end of RT to 1month after RT; and emotional functionworsened from the start of RT to 1 month afterRT.

Conclusions

The QOL was poorest at the end of RT. If treatment was completed, physical function improved, but role function and emotional functionworsened just 1 month after treatment. For role andemotional function, observation by medical staff isnecessary.

eP585

A LONGITUDINAL STUDY OF PHENOTYPIC AND SYMPTOM CHARACTERISTICS ASSOCIATED WITH INTER-INDIVIDUAL VARIABILITY IN EMPLOYMENT INTERFERENCE IN PATIENTS WITH BREAST CANCER

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Introduction

A cancer diagnosis and associated treatments have a substantial economic impact (i.e., direct and indirect medical expenses, indirect losses in

productivity through changes in employment). Study purposes were to evaluate for inter-individual differences in cancer's level of interference with employment and phenotypic and symptom characteristics that were associated with these inter-individual differences.

Methods

Breast cancer patients (n=387) were enrolled prior to surgery and followed for 12 months. Interference with employment was measured using a 0 (no problem) to 10 (severe problem) rating scale. Multilevel regression analysis was used to evaluate for inter-individual differences in trajectories of employment interference and characteristics associated with employment interference at enrollment and over 12 months.

Results

Patients were ~55 years of age and underwent breast conservation surgery (80.6%). Mean employment interference score was 3.2 (+3.7). Unconditional model for employment interference demonstrated a decreasing linear trend (-0.076). Characteristics associated with higher employment interference scores at enrollment included: younger age, lower household income, having an axillary lymph node dissection, and higher breast pain scores. Characteristics associated with both initial and ongoing employment interference scores included having a sentinel lymph node biopsy and higher sleep disturbance scores.

Conclusions

This study is the first to describe characteristics associated with higher levels of employment interference in a relatively large sample of breast cancer patients. Knowledge of these characteristics may help clinicians identify high risk patients and initiate appropriate interventions (e.g., social service referrals, information on legal rights, more effective symptom management).

eP586
OSSEOINTERGRATION IN RECONSTRUCTION OF HEAD AND NECK CANCER SURGICAL PATIENTS

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Introduction

Head and Neck cancer surgery can leave patients with large soft and hard tissue defects and significant aesthetic issues, especially if an ear, nose or eye is lost during surgery. Osseointegrated implants allow for the placement of implant supported dentures and prosthesis for eyes, noses and ears.

Methods

91 Patients who underwent head & neck cancer surgery at St Vincent's Hospital had 280 osseointegrated implants placed to facilitate reconstruction and restoration of dentition, prosthetic eyes, noses and ears

Most implants were placed at the time of surgery, allowing restoration of function and aesthetics to be carried out soon after completion of any post operative radiotherapy

Results

Osseointegration in our head & neck cancer patient population has a high success rate, greater than 90% allowing for restoration of function (dentures) and aesthetic (prosthetic noses, eyes and ears)

Conclusions

Osseointegration in our head & neck cancer patient population has a high success rate, greater than 90% and is an essential part of overall treatment of this patient population.

eP587
EXPERIENCES, PERCEPTIONS AND CONSIDERATIONS OF PATIENTS AFTER LUNG CANCER SURGERY CONCERNING NON-PARTICIPATION IN A RANDOMISED CLINICAL REHABILITATION TRIAL

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Introduction

Patients with lung cancer are difficult to recruit to and retain in rehabilitation trials despite the fact that participation in physical exercise by cancer patients has achieved good results in the past and is widely recommended by Danish health authorities. The purpose of this study was to explore experiences, perceptions and considerations of patients who declined participation in a randomised clinical trial involving exercise rehabilitation after surgery for lung cancer.

Methods

A descriptive, interpretive phenomenological research approach inspired by Dahlberg et al.'s reflective life-world research. Qualitative interviews were conducted with 15 patients who had declined to participate in the postoperative exercise rehabilitation trial.

Results

Patients' lived experiences, perceptions and considerations concerning non-participation in exercise revealed that there was a discrepancy between the freedom to act and make decisions, and the limitations of having to act in a certain way. The meaning of non-participation in exercise rehabilitation after lung cancer was thus affected by the contradiction between freedom and necessity as a general meaning structure in the analysis. The patients found themselves in a grey area between a healthy life and a good life, as influenced by societal norms and their responsibility for their own health and rehabilitation.

Conclusions

The patients' underlying narrative concerning values and the good life; their balancing of priorities in daily life; their social context and the norms embedded in their self-understanding are crucial to gaining insight into when to include patients in rehabilitation after lung cancer.

eP588
FEASIBILITY OF A SMARTPHONE APPLICATION AND TELEPHONE COACHING SURVIVORSHIP CARE PLANNING PROGRAM AMONG SPANISH-SPEAKING BREAST CANCER SURVIVORS

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Introduction

Survivorship care planning programs that are tailored for Spanish-speaking Latina breast cancer survivors could help address disparities in resources to manage their condition.

Methods

This mixed methods single-arm feasibility studyevaluated a 2-month intervention delivered via written survivorship care plan and booklet, mobile phone application with activity tracker, and telephone coaching. Acceptability and feasibility were examined via implementation tracking, debriefing interviews, and satisfaction surveys. Preliminary efficacy was assessed via baseline and 2-month structured interviews and average daily steps per the activity tracker. Primary outcomes were self-reported fatigue, health distress, knowledge of cancer survivorship care, and self-efficacy for managing follow-up care. Secondary outcomes were emotional well-being, depressive and somatic symptoms, and average daily steps.

Results

All women (n=23) were Spanish-speaking immigrants and had public health insurance. Nineteen of 23 participants (83%) completed all five

coaching calls. The majority (81%) rated the overall quality of the app as "very good or excellent." Compared to baseline, post-intervention fatigue (ß = -0.26, p <.05) and health distress levels (ß = -0.36, p <.05) were significantly lower, and knowledge of recommended follow-up care and resources (ß = 0.41, p <.05) and emotional well-being improved significantly (ß = 1.42, p <.05). Average daily steps increased significantly from 6,157 to 7,469 (ß = 1311.8, p <.05).

Conclusions

Preliminary results support further testing of the intervention, with significant two-month improvements in fatigue, health distress, and emotional well-being, and increased knowledge of recommended follow-up care and average daily steps among this group of vulnerable cancer survivors.

eP589

THE EFFICACY AND SAFETY OF EXERCISE IN METASTATIC SOLID CANCER: A META-ANALYSIS OF RANDOMIZED CONTROL TRIALS

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Introduction

People with metastatic cancers experience fatigue, decreased physical function (PF), and poor quality of life (QoL). Exercise improves these symptoms in the curative setting, but the efficacy and safety in patients with metastatic cancer is uncertain.

Methods

Studies were identified from 3 prior systematic reviews and updated using a PubMed search. Included studies were randomized trials of moderate/high intensity aerobic exercise or resistance training intervention versus control in patients with metastatic solid cancers. The mean and standard deviation (SD) for validated outcomes (QoL, PF, and fatigue) were extracted for intervention and control groups at baseline and post-intervention. The effect of exercise was evaluated as the pooled change between baseline and post-intervention. Groups were compared using the Mann Whitney test.

Results

Twenty-one trials met inclusion criteria and 7 were excluded due to incomplete data. Among patients with mean baseline scores, exercise was not associated with significant change in fatigue, PF or QoL. In those with baseline scores 2 SD below mean, there was clinical improvement in PF (0.44 vs 8.5) and avoidance of decline in 6-minute walk test (-29.75 vs -0.38m), without statistical significance. There was a statistical improvement in sit-to-stand (STS) at the mean and 2 SD below the mean (2.5 vs 6.5, p=0.029) for both groups. There were no differences in falls, fractures, or pain.

Conclusions

In patients with metastatic solid cancers, exercise interventions are associated with clinically meaningful improvements in PF, and statistically improved STS scores in patients with baseline score at the mean or lower.

eP590

INTRAVENOUS VITAMIN C(IVC) SYNERGY WITH MEHT SIGNIFICANTLY IMPROVE QOL AND PROLONG OVERALL SURVIVAL TIME IN LATE STAGE NSCLC PATIENTS

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Introduction

Intravenous vitamin C (IVC) and modulated electrohyperthermia (mEHT) are widely used by integrative cancer practitioners for many years. Our phase I clinical trial proved that IVC simultaneously with modulated electrohyperthermia (mEHT) were safe for non small cell lung cancer (NSCLC) patients.

Methods

A randomised phase II controlled trial was performed to compare supportive care with and without IVC + mEHT concomitant treatment (In the active arm: patients were allocated into 1 g/kg d, 1.2 g/kg d, 1.5 g/kg d dosage groups simultaneously with mEHT, three times a week for 25 treatments in total) on quality of life(QOL), progression-free survival (PFS) and overall survival (OS) in advanced Chinese NSCLC patients. Subsequently, 97 patients were analysed at the data cut-off (17th July, 2018).

Results

After a median follow up of 10 months, both the PFS and OS were significantly improved by IVC + mEHT compared to control (PFS: 3 month vs. 2 months, P<0.05; OS: 12 months vs. 8 months, P<0.05). The average scores for the functioning scales increased continuously, so that the QoL improved in the active arm despite the advanced stage of the disease(P<0.05). Both interleukin-6 and c-reactive protein were significantly decrease after treatments in active arm in comparison with control arm (P<0.05).

Conclusions

IVC + mEHT treatment significantly improves QoL, prolongs PFS and OS, and moderates cancer-related inflammation, and so is a feasible treatment for patients with advanced NSCLC. This trial is registered in ClinicalTrials.gov (ID: NCT02655913).

eP591

PATIENTS' EXERCISE ABILITIES AND PREFERENCES IN THE COMMUNITY PALLIATIVE CARE SETTING

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Introduction

There is limited information about palliative care patients' preferences for exercise despite its known benefits. We aim to describe the exercise abilities and preferences of patients with the ultimate aim to develop an exercise program.

Methods

A convenience sample of community patients from Sacred Heart Health Service, Sydney, was approached to complete a cross-sectional paper or electronic survey. The following information was collected: demographics, diagnosis, current physical activity and their preferences include types of activity and setting. Patients were approached either in the clinic or at home.

Results

Between May 2017-April 2018, 44 (17 Male: 27 Female) completed questionnaires was collected. The patient's median age was 71 years. The majority (84%) of patients had cancer as their main disease. Most patients (77%) were seen in the outpatient clinic. Most patients (59%) reported exercising at least once a week with 23% patients reporting that they exercise everyday. Of those who exercised, most people (39%) exercised between 15-29 minutes each session. Walking was the most common (66%) type of exercise patients were currently undertaking. Most patients (73%) preferred to exercise alone, with 41% of patients preferring to exercise unsupervised. About half of them (53%) would prefer to exercise at home. The top three barriers to exercise were related tiredness (57%), pain (55%), and dysnpoea (37%).

Conclusions

Palliative care patients are able and interested in participating in physical activity. In this study, patients are interested in exercising alone and at home. Adequate symptom control may increase patients' interest and abilities to exercise.

eP592

EXERCISE IN CANCER SURVIVORS CENTER FOR INTEGRATED REHABILITATION OF CANCER PATIENTS (CIRE) ILLUMINATES THE ROLE THAT EXERCISE AND SUPPORTIVE CARE CAN PLAY FOR CANCER SURVIVORS

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Introduction

There has been a significant interest in the role of exercise and supportive care following a cancer diagnosis to prevent disruption of physical, emotional and social capacity. Rehabilitation challenges vary across cancer diagnoses, treatment, age groups and lifestyle. The purpose of the CIRE program (2012-2019) was to optimize rehabilitation for patients with a variety of cancer diagnoses with emphasis on exercise and supportive care. The program consisted of six randomized controlled intervention trial (n=919) and based on the concept EEX-ACT: 1) Early initiation from time of diagnosis - during chemotherapy; 2) EXercise and supportive care (12 weeks, 2-9 hours/week; 3) patient ACTivation –daily life activities. Multimodal interventions were conducted by multidisciplinary clinical teams (physicians, nurses, physiotherapists).

Methods

Cross-cutting analysis; clinical, physiological, psycho-social outcomes and qualitative interviews with cancer patients.

Results

The program included children with leukemia and adults with lung cancer, breast cancer, prostate cancer, leukemia. Average adherence rate 70%; children with high adherence (97%) and lung cancer patients with low adherence (50%). The EEX-ACT concept was successfully integrated in clinical contexts at the hospital. Across studies, improvements in muscle strength (1RM), cardiovascular fitness (VO2 peak), physical activity level, fatigue and anxiety were observed. Interviews with 510 participants confirmed patients' perception of improved physical functioning, emotional wellbeing and strengthened social capital; attained by oncologist's recommendation, nurse counselling, group setting with peers and family involvement.

Conclusions

Exercise interventions initiated at time of diagnosis can improve and maintain the physical, emotional and social capacity of cancer patients during and after chemotherapy.

eP593

AGE AT DIAGNOSIS AND GENDER ARE ASSOCIATED WITH LONG-TERM DEFICITS IN DISEASE-SPECIFIC HEALTH-RELATED QUALITY OF LIFE OF COLON AND RECTAL CANCER SURVIVORS: A POPULATION-BASED STUDY

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Introduction

Despite the increasing number of younger individuals diagnosed with colorectal cancer (CRC), research on the long-term disease-specific health-related quality of life (HRQOL) of younger (<50 years) CRC survivors is scarce. We aimed to compare disease-specific functional deficits and symptoms of colon (CC) and rectal cancer (RC) survivors 5-16 years post-diagnosis, stratified by age at diagnosis and by gender.

Methods

We used cross-sectional data from the population-based *CAncEr Survivorship - A* multi-*R*egional (CAESAR) study in collaboration with five population-based German cancer registries. Respondents completed the disease-specific European Organization for Research and Treatment of Cancer Quality of Life colorectal cancer module (EORTC QLQ-CR29). Age at diagnosis was categorized as <50, 50-59, 60-69, and ≥70 years. Least square mean HRQOL scores, derived from linear regression, were adjusted for demographic and clinical variables, where appropriate.

Results

The sample comprised 697 CC and 479 RC survivors. In general, CC and RC survivors diagnosed <50 years of age reported lower functioning and higher symptom burden when compared with survivors diagnosed at an older age. When stratified by gender, female CC survivors tended to report more concerns with hair loss but less sexual problems when compared with male CC survivors of same age. Female RC survivors in all age groups tended to report lower levels of sexual interest than male RC survivors of same age.

Conclusions

Our results suggest that supportive care for CRC survivors to improve their self-management of symptoms should be adapted according to cancer type, age at diagnosis, and gender.

eP594

ACUTE INPATIENT REHABILITATION OUTCOMES OF CANCER PATIENTS WITH LEPTOMENINGEAL DISEASE

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Introduction
The incidence of leptomeningeal disease has been reported to be increasing perhaps due to more effective systemic chemotherapies which are unable to cross the blood brain barrier. Despite the significant rehabilitation needs of these patients, there are no published papers regarding the rehabilitation of leptomeningeal disease patients. The purpose of this retrospective descriptive study is to analyze the acute inpatient rehabilitation outcomes of LMD patients.
Methods
This descriptive retrospective study analyzed acute inpatient rehabilitation admissions of patients with a pathology confirmed diagnosis of leptomeningeal disease within 6 months of rehabilitation transfer admitted between 9/5/2014 and 7/30/2018. Demographic information, cancer characteristics, and inpatient rehabilitation admission data were analyzed.
Results
Of the patients who completed inpatient rehabilitation without return to the primary acute care service, mean ADL FIM, Mobility FIM and Motor FIM subscores changes from admission to discharge were 5.10 (p<.001), 4.76 (p<.001) and 11.67 (p<.001), respectively. Twenty five out of 30 (83.3%) patients were noted to have neurologic symptoms and 13/30 (43.3%) were noted to have cognitive deficits. Five out of 30 patients (16.7%) received intrathecal chemotherapy and 4/30 (13.3%) received radiation during acute inpatient rehabilitation for leptomeningeal disease treatment. Discharge dispositions including 20/30 (66.7%) to home, 9/30 (30%) transferred to the primary acute care service, and 1/30 (3.3%) skilled nursing facility.
Conclusions
This study is the first to examine acute inpatient rehabilitation outcomes of cancer patients with leptomeningeal disease. Patients made statistically significant improvements on multiple FIM scores. These patients should be considered for acute inpatient rehabilitation when medically and functionally appropriate.

eP595
EFFECTIVENESS OF A GUIDED SELF-HELP HEAD AND NECK EXERCISE PROGRAM FOR PATIENTS TREATED WITH TOTAL LARYNGECTOMY: RESULTS OF A MULTICENTER RANDOMIZED CONTROLLED TRIAL

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Introduction
This study aimed to investigate the effectiveness of a guided self-help Head and Neck exercise program on swallowing, speech, and shoulder problems in patients treated with total laryngectomy (TL).
Methods
This randomized controlled trial included patients treated with TL in the last 5 years. Patients randomized into the intervention group received a self-help exercise program and a self-care education program, whilst the control group received a self-care education program only. Both groups completed patient-reported outcome measures before randomization, at 3 and at 6 months follow-up. The primary outcome was swallowing problems (SWALQOL). Secondary outcomes were speech problems (SHI), shoulder problems (SDQ), patient activation (PAM) and health-related quality of life (HRQOL: EORTC QLQ-C30/H&N35). Adherence was defined as moderate to high in case the patient exercised >1 per day. Linear mixed model analyses were conducted to investigate the effectiveness of the intervention group compared to the control group and to investigate whether severity of problems and neck dissection surgery moderated the effectiveness.
Results
Adherence to the exercise program was moderate-high (59%). Patients randomized to the intervention group (n=46) reported less swallowing problems over time compared to the control group (n=46) (p-value two-way interaction=0.013). Also, less communication problems were reported over time (p-value two-way interaction=0.004). No difference was found in speech, shoulder problems, patient activation and HRQOL. Severity of problems and neck dissection surgery did not moderate the effectiveness of the exercise program.
Conclusions
The guided self-help exercise program improves swallowing and communication in TL patients.

eP596
EFFECT OF DIGNITY THERAPY ON QUALITY OF LIFE IN ADVANCED CANCER PATIENTS RECEIVING PALLIATIVE CARE AT AGAKHAN UNIVERSITY HOSPITAL: A PARALLEL GROUP RANDOMISED CONTROL TRIAL

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Introduction
Key in addressing causes of suffering for cancer patients, is Dignity therapy, a form of psychotherapy. The primary aim of this study was to evaluate the outcome of dignity therapy (compared to usual care only) on quality of life of advanced cancer patients undergoing palliative care using parameters stipulated in Edmonton symptom scale (Quality of life tool). Secondary objectives were to determine the most common types of cancers and comorbidities in this population
Methods
The study population was 144(72 in each arm) patients with advanced cancer. The intervention group received dignity therapy (in addition to usual care) while Group 2 received usual care only. Baseline ESAS scores were determined. Data, collected through taped interviews and written forms (Legacy documents), was edited and legacy documents presented to group one participants after the study. They reviewed the legacy document at least once after which post intervention ESAS scores were then determined in both groups after 6 weeks.
Results
Tthe mean symptom distress score was significantly lower in the intervention group (Mean difference= -8.60; 95% CI -15.29 to -1.90, p=0.022). Dignity therapy group showed a trend towards statistical improvement in anxiety (p=0.059) between the two groups. The largest positive effects were seen in appetite improvement, anxiety and increased wellbeing (Cohen effect size 0.3, 0.5 and 0.31 respectively)

Conclusions
There was symptomatic improvement after dignity therapy which was mainly in anxiety with a trend towards statistical significance. This form of therapy can therefore be used to improve the quality of life of cancer patients

eP597
COMMUNITY PHARMACY: AN INNOVATIVE WAY TO DELIVER CANCER SURVIVORSHIP INTERVENTIONS

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Introduction
Prostate cancer and its treatment can have a negative impact on men's health and quality of life. Despite evidence of the benefits of physical activity, only 10-32% of people living with and beyond cancer engage at recommended levels. Support for healthy lifestyle behaviours is increasingly important but innovations are needed.
Methods
This mixed-methods, multi-site UK study tested a novel 3-month community pharmacy lifestyle intervention for prostate cancer survivors. Outcomes assessed at baseline, 3 and 6 months post-intervention included physical activity (accelerometry) and patient reported outcomes (European Prostate Cancer Index Composite, EPIC-26; EuroQOL 5-dimension, EQ5D-5L).
Results
Invitation letters were sent to 403 eligible men and 172 (43%) expressed interest. A socio-economically representative sample of 116 men (mean age 70.4±7.2 years, range 50-85) commenced the intervention in nine pharmacies. 99 men completed the intervention (15% withdrawal), and 88 men provided 3-month and 6-month accelerometry data (24% attrition). From baseline to three months, moderate to vigorous physical activity (MVPA) increased significantly by 34±152 minutes (p=0.018), but this was not sustained at six months (p=0.509) (Table 1). Although no statistically significant change was recorded in global quality of life at six months, there was a significant improvement in sexual and hormonal domains (Table 2).

Table 1. Change in accelerometry data during the community pharmacy lifestyle intervention

Accelerometry data	Increase from baseline to three months				Increase from baseline to six months			
	Mean change	Lower 95% CI	Upper 95% CI	*P*-value	Mean change	Lower 95% CI	Upper 95% CI	*P*-value
Counts per day (/1000)	3.3 (48.3)	-5.6	12.2	0.466	-4.6 (72.7)	-18.0	8.8	0.499
MVPA per week (minutes)	34 (152)	6	62	0.018	14 (220)	-27	54	0.509
MVPA in bouts ≥ 10 minutes per week (minutes)	-2 (59)	-12	9	0.756	3 (70)	-9	16	0.603

Conclusions
To our knowledge this is the first study to test a lifestyle intervention for men with prostate cancer delivered in community pharmacy. This study shows that community pharmacies could have an important role in supporting cancer survivors. Innovative approaches are needed to provide long-term monitoring and support sustainability of health behaviour improvements.

eP598
DEPRESSION IN LONG-TERM BREAST CANCER SURVIVORS COMPARED TO FEMALE POPULATION CONTROLS IN GERMANY

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Introduction
Depression is more prevalent in breast cancer (BC) patients and survivors than in general population. However, little is known about depression in (very) long-term survivors. Study objectives were to compare the prevalence of depressive symptoms (1) in BC survivors vs. female general population controls, (2) in disease-free survivors vs. survivors with progression, (3) to test for determinants of depression in BC survivors.
Methods
3045 BC survivors (5-16 years post-diagnosis, mean age 65 years), and 1005 cancer-free controls (mean age 59 years) were recruited in German multi-regional population-based studies. Depression was assessed via Geriatric Depression Scale, short form (GDS-15). Prevalence differences between subgroups were assessed via multiple regression, controlling for age and education. Proportional odds logistic regression was used to assess determinants of depression in BC survivors.
Results
A GDS-15 score suggestive of mild or severe depression (cut-off: ≥5) was found in 31.3% of BC survivors and in 25.0% of cancer-free controls (p=0.0002), a score suggestive of severe depression (cut-off: >10) in 5.5% of BC survivors and 4.3% of controls (p=0.1780). At age 30-49 and 70-79 years, prevalence of mild/severe depression was significantly higher in BC survivors than controls. BC survivors with progression showed significantly higher prevalence of mild/severe depression than disease-free survivors and controls. Age, education, progression, and partnership were significant predictors of depression in BC survivors.
Conclusions
Long-term BC survivors report slightly but significantly higher depression prevalence than controls, which can be explained by disease progression. Clinicians should refer survivors to psychological care when needed, especially in the case of a progression.

eP599
TRANSLATION OF A STRESS MANAGEMENT INTERVENTION FOR RURAL SPANISH-SPEAKING LATINA BREAST CANCER SURVIVORS: THE NUEVO AMANECER-RURAL TRIAL

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Introduction
We describe the process of adapting and testing a stress management program, *Nuevo Amanecer-Rural*, for rural Spanish-speaking Latina breast cancer survivors, including methods for conducting the RCT (study design, measures, baseline characteristics) in rural communities.
Methods
We used formative research and applied a novel translation model to engage community members in the adaptation of the original *Nuevo Amanecer* program and design of the study for rural settings. We tracked recruitment and assessed baseline demographics and outcomes via interviewer-administered surveys.
Results
Based on community members' input, program adaptations included: simplifying language, adding visuals, developing stress management videos, and expanding from 8 to 10 sessions to increase skills practice and healthy lifestyles information. We trained community recruiters to enroll, collect biospecimens, and randomize women to intervention or wait-list control groups. We trained breast cancer survivors to deliver the 10-week in-person *Nuevo Amanecer-Rural* program. Of 231 women approached, 24% refused, 10% were ineligible, and 66% were randomized (76 to program, 77 to control). Participants' mean age was 54.8 years (range 28-88); 81% had < high school education; and 48% reported financial hardship in the past year. Baseline FACT-B mean scores were: Total Score, 96.7 (possible range 0-144); Emotional Well-being, 17.3 (possible range 0-24); Functional Well-being, 18.2 (possible range 0-28); Social/Family Well-being, 18.2 (possible range 0-28); Physical Well-being, 20.4 (possible range 0-28); and Breast Cancer Concerns, 22.7 (possible range 0-36).
Conclusions
Using a translational model designed specifically for implementation of community-based behavioral trials to reduce disparities enhanced congruence with community contexts and recruitment and retention.

eP600
SUPPORTIVE CARE PRIORITIES OF LOW-INCOME LATINA BREAST CANCER SURVIVORS IN LOS ANGELES

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Introduction
Low-income Latina breast cancer survivors are disproportionately at risk for poor health outcomes. Supportive care services can reduce health disparities and increase quality of life. However, little is known about the supportive care needs of this population. This study investigated the supportive care needs of a sample of low-income Latina breast cancer survivors.
Methods
99 Spanish-speaking breast cancer survivors who self-identified as Latina and reported an income below the U.S. Census Bureau low-income threshold were recruited from the oncology clinic of a major public safety net hospital. Eligible participants completed the Supportive Care Needs Survey (SCNS-SF34) and a demographic questionnaire.
Results
92% of respondents had unmet needs. The majority of frequently-reported unmet needs involved 1) access to and delivery of health-related information, and 2) physical function. These findings appear to contrast with those of other studies of supportive care needs in heterogeneous cancer survivors, most of which indicate describe a high prevalence of psychological concerns as most urgent.
Conclusions
Participants espoused information-related needs with a higher frequency than many other samples of cancer survivors. This study population may also require a particularly high level of assistance with overcoming participation restrictions. Further research is needed to understand these discrepancies and to address unmet needs across all domains.

eP601
MENOS4 TRIAL: TRAINING NURSES TO DELIVER CBT FOR MENOPAUSAL HOT FLUSHES AFTER BREAST CANCER IS EFFECTIVE FOR HOT FLUSHES AND ENHANCING QUALITY OF LIFE

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Introduction
Hot flushes and night sweats (HFNS) are frequently a problem in women after breast cancer and can have a significant impact on daily life. It is known that Cognitive Behavioural Therapy (CBT) is effective for the alleviation of hot flushes. Breast care nurses (BCNs) are well placed to deliver this intervention, but it is not known whether they will be able to do this effectively within the NHS setting. This study assessed whether BCNs can be trained to effectively deliver a CBT intervention to alleviate HFNS in women with breast cancer.
Methods
Multi-centre phase III RCT in UK women experiencing troublesome HFNS after breast cancer, comparing 6-session group CBT versus treatment-as-usual (TAU). Nurses were trained in a two-day workshop with manual and materials provided. The primary outcome was the HFNS problem rating scale (max 10) at 26-weeks. Secondary outcomes included HF incidence, PSQI (sleep), PHQ-9 (depression) and GAD-7(anxiety).
Results
127 women completed the study (61 CBT, 66 TAU): mean age 54yrs, 96% white British. At 26-weeks mean HFNS dropped by 3.0 in CBT and by 0.8 in TAU (mixed model adjusted difference [95% CI,p]: -1.955 [-3.678 to -0.233,p=0.039]). Improvements were also found for total HFNS frequency (difference [95% CI,p]: -20.222 [-34.458 to -4.987,p=0.010]); sleep (-0.570 [-0.810 to -0.330,p<0.0001]); anxiety (-2.137 [-3.611 to -0.663,p=0.005]); and depression (-2.857 [-4.732 to -0.982,p=0.003]).

Conclusions
Breast care nurses can be trained to effectively deliver a group CBT intervention for the alleviation of hot flushes in women who have had breast cancer.

eP602
MOVING CANCER CARE ONTARIO'S EXERCISE FOR PEOPLE WITH CANCER GUIDELINES INTO ONCOLOGY PRACTICE: USING THE THEORETICAL DOMAINS FRAMEWORK TO VALIDATE A QUESTIONNAIRE

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Introduction
Evidence supporting the benefits of exercise surrounding cancer treatment has led to internationally published guidelines, with minimal uptake by oncology care providers (OCPs). There is a need to understand how to implement research evidence into practice.
Methods
We developed a questionnaire to assess OCPs' knowledge of exercise guidelines and barriers / facilitators to exercise counseling and program referral. We validated the questionnaire using the Theoretical Domains Framework (TDF), a knowledge translation (KT) framework used to implement evidence-based guidelines into practice. Each questionnaire item was mapped to its relevant TDF domain. Statistical analyses were used to confirm appropriate grouping (inter-item correlations and means). Reliability was tested by calculating Cronbach's alpha between items within each domain. Construct validity was assessed by examining associations between variables conforming to expected patterns.
Results
Nine out of 14 TDF domains were considered relevant to this context. Chronbach's alpha for questions mapped to these domains were high (see Table 1), with the exception of "beliefs about consequences" and "intentions." OCPs who reported meeting Canada's Physical Activity guidelines were more likely to report good knowledge on how to provide exercise counseling ($\chi 2 = 6.44$, $p = 0.011$) and OCPs tested guideline knowledge was associated with self-reported ability to provide exercise counseling ($\chi 2 = 8.28$, $p = 0.004$).
Conclusions
The *Clinicians Perspectives on Exercise in Patients with Cancer (CliPEC), is a validated instrument that* can be used by cancer programs and researchers to inform the design and implementation of interventions to promote exercise discussion & referral in oncology practice.

eP603
FACTORS AFFECTING QUALITY OF LIFE IN PATIENTS WITH LOWER LIMB LYMPHEDEMA

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Introduction
Lower limb lymphedema (LLL) has a negative effect on quality of life (QOL). However, it is unclear which patient characteristics or background factors lead to lower QOL. The aim was to clarify factors affecting QOL in LLL with the life measure for limb (LYMQOL).
Methods
In this cross-sectional, prospective study, patients with secondary LLL due to gynecological cancer were recruited from lymphedema outpatient clinics at Keio University Hospital from January to November 2018. We assessed the International Society Lymphology (ISL) stage, symptoms, neurotoxicity with FACT/Gynecologic Oncology Group-Neurotoxicity, and LYMQOL, which consists of the domains 'function', 'appearance', 'symptoms', 'mood', and 'overall QOL'. Potential factors affecting QOL using LYMQOL were evaluated by multiple linear regression analysis.
Results
A total of 56 female patients with a mean age of 65.5±7.4 years were enrolled. Significant factors affecting the LYMQOL score were history of cellulitis and severity of neurotoxicity. Of the domains of the LYMQOL, 'function'was related to fall history and severity of neurotoxicity, 'appearance'was related to history of cellulitis and ISL stage, 'symptoms'was related to history of cellulitis and severity of heaviness, 'mood'was related to history of cellulitis and severity of neurotoxicity, and 'overall QOL'was related to severity of neurotoxicity; all were significant.
Conclusions
QOL in LLL patients was not only determined by the stage of lymphedema, but it was also affected by various background characteristics and symptoms, and it depended on the domains of QOL. Therefore, supportive care to manage symptoms and maintain activities of daily living is important in patients with LLL.

eP604
DIFFERENCES IN DISTRESS, EMOTION REGULATION, AND QUALITY OF LIFE AMONG ASIAN/ASIAN AMERICAN AND WHITE BREAST CANCER PATIENTS

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Introduction
Asian/Asian American breast cancer survivors report poorer psychological well-being compared with Whites. Little is known about whether this disparity begins during treatment or in survivorship. This study examines distress, emotion regulation, and quality of life (QOL) in newly diagnosed Non-Hispanic, Asian/Asian American breast cancer patients compared to Non-Hispanic, Whites.
Methods
From a large, prospective study of women with Stage 0-III breast cancer receiving adjuvant chemotherapy, we examined data from 119 self-identified White (n = 87) or Asian/Asian-American (n = 32) women. Participants completed distress (CAD), emotion regulation (DERS), and cancer-related quality of life (EORTC QLQ-30) questionnaires.
Results
Consistent with literature on breast cancer survivors, significant correlations were found between more distress symptoms, greater difficulties in emotional regulation, and lower QOL among all patients undergoing chemotherapy. Moreover, Asian/Asian American patients experienced lower overall QOL ($t(117) = 2.50$, $p = .014$), more difficulties in regulating their emotions ($t(117) = -3.03$, $p = .003$), and higher distress ($t(117) = -2.13$, $p = .035$) compared to Whites. Asian/Asian Americans (Mean = 46.25, SD = 8.62) were younger than Whites (Mean = 51.32, SD = 11.48); $t(117) = 2.27$, $p = .025$. However, age was not correlated with any of the measures evaluated.
Conclusions
Our findings suggest that more distress, greater difficulties in emotional regulation, and worse QOL occur during chemotherapy, and are more

prominent in Asian/Asian American breast cancer patients. Further research should replicate the findings in a larger sample and discern factors explaining these reported differences in psychosocial distress in Asian/Asian Americans compared to Whites.

eP605
SURVIVORSHIP IN THE COMMUNITY SETTING: DEVELOPING A MODEL FOR CHRONIC DISEASE MANAGEMENT

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Introduction
The recent Sustainable Health Review Interim Report to the Western Australia Government (2018) made a strong case for healthcare transformation and emphasized the need for sustainable programs that are cost effective and patient centered. With chronic disease (including cancer) representing a significant portion of the healthcare budget, cost effective interventions in primary care and education within the community need to be developed and implemented to help reduce healthcare costs.
Methods
Development of a sustainable program that is cost effective, patient centered and Nurse Practitioner (NP) led that will improve health outcomes, keep people healthy, and in their communities. Interventions focusing on (1) clinical practice, (2) education opportunities for students, and (3) building an evidence base for models of innovative chronic disease management in primary health care will be described.
Results
The team expects a new NP led model for chronic disease survivorship to be implemented that is patient-centric, family centered and technology-enabled that, generates evidence for best practice in Western Australia. This program will create new research opportunities and NP education in the community setting.
Conclusions
There is area of opportunity to bring the management of chronic conditions back into the community. The designed survivorship clinic will be an innovative model of care for Western Australia, delivering coordinated services for all chronic diseases, including cancer. It will focus on management of chronic conditions taking a holistic family centered approach to assessment and management (physical, social, spiritual, lifestyle and psychological well-being) within the community setting.

eP606
REDUCTION IN QUALITY OF SKELETAL MUSCLE MAY HAVE AN UNFAVORABLE IMPACT ON FUNCTIONAL PROGNOSIS IN PATIENTS WITH METASTATIC SPINE TUMORS RECEIVING NON-SURGICAL TREATMENT

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Introduction
Patients with metastatic spine tumors may have an increased risk for losing skeletal muscle and decreasing physical function due to bed rest and restrictions in movements. The purpose was to clarify the relationship between changes in skeletal muscle quality and functional prognosis in those patients.
Methods
In this historical cohort study, the medical records of inpatients with metastatic spine tumors who received radiotherapy and physiotherapy at Shizuoka Cancer Center were retrospectively collected. Skeletal muscle quantity and quality were evaluated at the time of diagnosis of metastatic spine tumors (Baseline) and one month after starting radiotherapy (T1). Muscle quantity was evaluated with skeletal muscles index (SMI) and quality was evaluated with the proportion of low attenuation muscle area (<29 Hounsfield unit) in the whole muscle area (LAM) on L3 CT slice. The amount of changes in SMI and LAM between baseline and T1 were expressed as ΔSMI and ΔLAM. Single logistic regression analysis was used to assess the effect of ΔSMI and ΔLAM on functional prognosis, or the ability to walk at T1.
Results
A total of 29 patients were analyzed. Five of them (17.2%) were judged as having unfavorable functional prognosis. Variables significantly related to functional prognosis were ΔLAM of the whole lumbar muscle (odds ratio 23.8, 95%CI 1.2-454.7), ΔLAM of psoas major muscle (odds ratio 5.2, 95%CI 1.4-19.2), and ΔLAM of paraspinal muscle (odds ratio 5.0, 95%CI 1.2-19.7).
Conclusions
It was revealed that patients with reduced quality of skeletal muscle during treatment had poorer functional prognosis one month after starting radiotherapy.

eP607
EMPLOYMENT AND FINANCIAL CHALLENGES FACED BY ADOLESCENT AND YOUNG ADULT (AYA) CANCER SURVIVORS: A QUALITATIVE STUDY

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Introduction
The diagnosis and treatment of cancer can cause disruption to employment and income among cancer patients, particularly in AYAs who are at a critical point of their careers and have yet to achieve financial stability. This study aims to evaluate the impact of employment and financial challenges on cancer survivorship among AYAs.
Methods
Eleven focus group discussions were conducted among 23 AYA cancer survivors and 18 healthcare professionals who work with AYA cancer patients. All sessions were audio-recorded, transcribed verbatim and coded for thematic content analysis.
Results
Among cancer survivors, 16 (69.6%) were working, 2 (8.7%) were unemployed and 5 (21.7%) were studying. Survivors were affected by cognitive impairment and physical disability, consequently impairing work and study performance. Related to employment, survivors struggled with the disclosure of their medical history and were worried about not keeping up with expectations. Working survivors were also apprehensive about changing jobs and voiced concerns about career advancement. In addition, obtaining insurance was a concern as many survivors were denied insurance coverage due to their medical history. Nevertheless, survivors consistently expressed their desire to be treated normally despite challenges at work. Both AYA survivors and healthcare

professionals highlighted the need for information provision and services to assist survivors in resolving work- and insurance-related issues.

Conclusions

AYA survivors face difficulties at work and in obtaining insurance coverage. Existing survivorship services for AYA survivors should incorporate career coaches and financial counselors to assist survivors return to work and resolve financial issues.

eP608

OPTIMIZING SURVIVORSHIP CARE SERVICES FOR ADOLESCENTS AND YOUNG ADULTS CANCER SURVIVORS: A QUALITATIVE STUDY

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Introduction

Despite an increasing focus on developing survivorship services tailored for adolescent and young adults (AYA) cancer survivors, current recommendations on service design rarely incorporated viewpoints from healthcare professionals (HCPs). This study evaluated AYA cancer survivors' and HCPs' perceptions of existing and prospective survivorship services, in order to propose strategies for service optimization.

Methods

We conducted 11 focus groups involving 23 AYA cancer survivors and 18 HCPs caring for AYA survivors. All sessions were audio-recorded, transcribed verbatim and coded by two independent researchers. Thematic content data analysis was performed using NVivo 12.

Results

Both AYA survivors and HCPs agreed that existing support groups were valuable and should be continued. However, AYA survivors reported barriers in communicating with non-AYA survivors who formed the majority in these groups as they did not share similar problems and disease knowledge for meaningful engagement. Survivors would also prefer additional nutritional support, financial and employment advice during their transition back to normalcy. Key proposals for prospective services included: (1) extending supportive services to AYAs' dependencies (caregivers, children); (2) introducing a care navigator to serve as a consistent contact point; (3) ensuring services are accessible, interesting, useful and highly goal-oriented; and (4) creating a centralized platform to disseminate information on the availability of such services.

Conclusions

Existing services for AYA survivors should be reinforced by age-specific considerations. To maximize survivors' perceived utility of services, prospective service providers can benefit from constructing clear and relevant goals to encourage participation in the long-term.

eP609

CASCADE TESTING FOR OVARY CANCER PATIENT WITH BRCA MUTATION: ACTIVE PREVENTION AND SCREENING FOR MUTATION CARRIER

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Introduction

BRCA test is only insured after diagnosis of cancer in Korea. Cascade testing among mutation positive ovary cancer patient is cost effective method for cancer prevention. We investigate this.

Methods

A retrospective review of patients who agreed and undertook cascade testing for same mutation with proband. Clinical information was collected from medical records

Results

Total population wad 9. Median age of proband and relatives are 64(42~75) and 45(20~52). They are eight 1st degree relatives and one 2nd degree relatives. We found 4 daughters and 2 sons. Others were one niece and two sisters. Advanced stage patients are most (7/9). There are 7 BRCA2 mutations and 2 BRCA1 mutations. There was no family history of BRCA related cancer (One had a stomach cancer mother and leukemia brother). Median time from cancer diagnosis and cascade testing were about 6 months (2~34).

Conclusions

There should be more active and cost-effective cascade testing for family members of BRCA mutation cancer patients.

eP610

ASSESSING QUALITY OF LIFE (QOL) OF PATIENTS AND THEIR CAREGIVERS ON PHASE I CLINICAL TRIALS

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Introduction

Patients on Phase I trials help advance science through their participation but there is a paucity of data regarding QoL of patients and their caregivers.

Methods

Phase I trial patients from a single Asian centre were assessed at baseline and at 3 time intervals after treatment initiation with EORTC-core (QLQ-C30) and Comprehensive Score for Financial Toxicity (COST) questionnaires. Caregivers' QoL were assessed with Zarit-Burden Interview (ZBI). Paired-sample t-tests were used to test for QoL differences at different time intervals.

Results

Table 1 summarises patients' characteristics. QLQ-C30 scores range from 0 to 100, higher scores represent a high level of functioning and QoL. Table 2 presents their scores. Patients were most bothered by fatigue and pain. 65.7% experienced grade 1 or 2 financial toxicities based on COST. There were significant improvements in physical (14.5 +/- 16.7, $p < 0.001$), cognitive (18.1 +/- 25.0, $p = 0.002$) and emotional (10.5 +/- 18.4, $p = 0.012$) functioning scores at baseline and 1-month post-treatment. Patients experienced a reduction in fatigue, but no change in pain or financial concerns. Only 28.6% of patients were referred to palliative care medicine. 8 of 19 caregivers experienced mild to moderate levels of burden.

Table 1: Patient's characteristics		N = 35 (%)
Age (median)		57 (Range: 42 - 83)
Gender	Female	21 (60)
	Male	14 (40)
Race	Chinese	26 (74.3)
Type of cancer	Gastrointestinal	18 (51.4)
	Gynaecological	9 (25.7)
	Breast	3 (8.6)
	Lung	3 (8.6)
	Others	2 (5.7)
No. of lines of primary treatment (median, range)		3 (0-9)

Conclusions
This is the first Asian study reporting QoL of cancer patients and their caregivers in Phase I clinical trials. In this group of heavily pre-treated patients, Phase I options can result in QoL improvement. Two-thirds of caregivers had minimal burden. Identifying QoL issues of patients and their caregivers will improve supportive care rendered to them.

eP611
ROLES AND RECOMMENDATIONS FROM PRIMARY CARE PHYSICIANS' TOWARDS MANAGING BREAST CANCER SURVIVORS IN A SHARED-CARE MODEL WITH SPECIALISTS IN SINGAPORE: A QUALITATIVE STUDY

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Introduction
This study aimed to gather perspectives of primary care physicians (PCPs) from private and public institutions in Singapore on their role in delivering shared-care services to breast cancer survivors and formulate an optimal care plan.
Methods
Eleven focus groups and six in-depth interviews were conducted with 70 PCPs recruited by purposive sampling. All sessions were audio-recorded, transcribed verbatim and coded by three independent researchers. Thematic content data analysis was performed using NVivo 12.
Results
Majority of the participants reported spending less than one-fifth of consultation time to manage survivors' cancer-related problems as they prioritized presenting complaints over the cancer history. PCPs recognized their value in delivering shared-care by: (1) providing holistic patient-care to include survivorship issues, (2) empowering survivors in self-care and (3) right-siting of care in the community for responsive care. PCPs emphasized a need for clear roles differentiation from oncologists, aligning their expertise in managing complex comorbidities, controlling risk factors and identifying psychosocial issues. To improve care coordination, PCPs suggested that the survivorship care plan should include oncologists' contact details, relevant medical and social history. Institution-level changes and appropriate primary care resourcing are necessary to enable shared-care between oncologists with PCPs.
Conclusions
PCPs are keen to provide patient-centric care for their cancer survivors and recommended for their role in shared-care delivery to leverage on their key strengths in chronic disease management, health promotion and preventive care. Future work should explore design of a multidisciplinary shared-care model incorporating training, clinical guidelines and improved communication to maximize its feasibility and practical utility.

eP612
IMPLEMENTATION OF A MULTIDISCIPLINARY OPTIMISATION CLINIC FOR CANCER PATIENTS WITH COMPLEX NEEDS

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Introduction
An optimisation clinic for cancer patients with complex needs was introduced at Peter MacCallum Cancer Centre in August 2017 providing up to eight weeks of nutritional counselling, exercise prescription, fatigue management and psychological support tailored to individual need. This study examined how well the clinic was implemented into usual care.
Methods
Retrospective study for 185 patients referred to the optimisation clinic, August 2017 to December 2018. Implementation outcomes (acceptability, adoption, fidelity and appropriateness) were evaluated using operational, medical records and patient interview data.
Results
Adoption, including intention to try and uptake, were acceptable: 88% (162/185) of referred patients agreed to screening and 71% (74/104) of eligible patients (criteria presented in image 1) agreed to participate in the clinic. Fidelity was mixed, secondary to inpatient admissions and disease progression interrupting patient participation. An individualised program was developed for every patient, but only 41% (30/74) attended at least 80% of scheduled appointments. Compliance with outcome assessment was variable at program commencement (dietetic, 95%; physio, 91%; OT, 33%; quality-of-life, 30%) and low at program completion (dietetic, 32%; physio, 13%; OT, 10%; quality-of-life, 11%) mainly due to non-attendance. Patient interviews revealed a high satisfaction and perceived appropriateness of the clinic (image 2).
Image 1 - Model of care

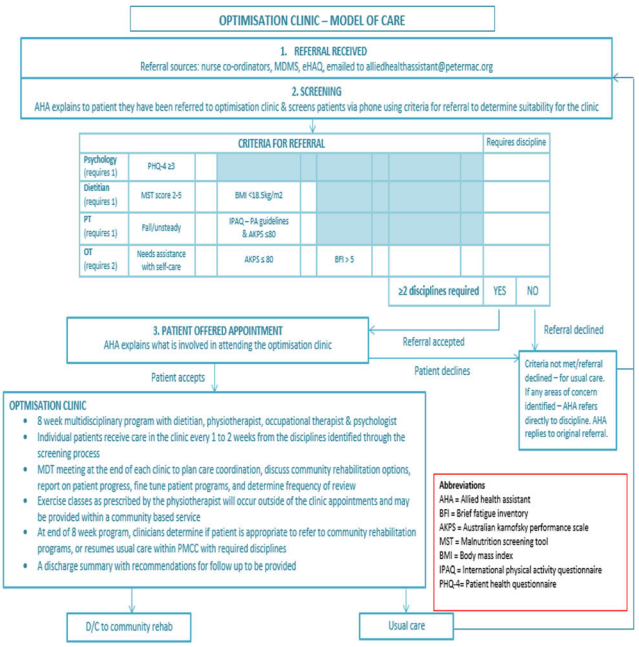

Image 2 - Themes identified from analysis of patient interviews

Conclusions

Adoption of the optimisation clinic was successful. Interview responses suggest patients feel the optimisation clinic is both acceptable and appropriate. This indicates a multidisciplinary clinic model is an important aspect of comprehensive, timely and effective care. However, fidelity was low secondary to the complexities of the patient cohort.

eP613

PROMOTING A COMMUNITY-BASED SHARED-CARE SURVIVORSHIP MODEL IN SINGAPORE: A NATIONWIDE QUALITATIVE STUDY AMONG PRIMARY CARE PHYSICIANS

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Introduction

To transit from an oncologist-led to a shared-care cancer survivorship model in Singapore, this qualitative study was designed to elicit perspectives from primary care physicians (PCPs) on the design and delivery of a proposed shared-care model among breast cancer survivors.

Methods

Eleven focus groups and six in-depth interviews were conducted with 70 PCPs recruited by purposive sampling. All sessions were audio-recorded, transcribed verbatim and coded by three independent researchers. Thematic content data analysis was performed using NVivo 12.

Results

Strategies to maximize patient selection, effectiveness, adoption, implementation and maintenance of a shared-care model were reported. PCPs proposed for shared-care to be initiated among survivors who were previously on regular follow-up in the primary setting to leverage on the existing rapport built. At the institution level, buy-ins from a few representatives as early adopters of the new model would generate a positive momentum of change. Key implementation strategies included: (1) improving care communication with oncologists through survivorship care plans supported on technological platforms; (2) integrating survivorship care elements into the current family medicine clinic; (3) providing basic cancer survivorship training and operationalizing workflows with referral triggers to ensure the quality of cancer-related care. In achieving sustainability, governmental support in introducing subsidiary schemes was highlighted to be instrumental in facilitating survivors' mobility across healthcare settings for shared-care arrangement.

Conclusions

The target participants of the shared-care model should be selected purposefully and participating PCPs must be trained systematically. Preplanned performance indicators should be instituted with model implementation to be evaluated for feasibility and effectiveness.

eP614

THE IMPACT OF INDIVIDUALLY INPATIENT REHABILITATION ON PHYSICAL FUNCTION OF PATIENTS WITH ADVANCED CANCER

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Introduction

To examine the impact of an individually inpatient rehabilitation on functional improvement among patients with diagnosed advanced cancer

Methods

This is a retrospective cohort study of newly diagnosed patients with advanced cancer between 2012 and 2017. Total 3832 data for newly diagnosed patients with advanced cancer were examined; of these patients, 331 underwent inpatient rehabilitation and 3501 did not undergo inpatient rehabilitation. At baseline and after 2 weeks Overall functional improvement were evaluated by Functional ambulation category (FAC). Type of cancer, site of metastasis, age, sex, dosage of intervention, baseline functional level were collected from medical records and adjusted on the ANCOVA analysis.

Results

A total of 331 patients (8.6%) who underwent inpatient rehabilitation improved in functional status from admission to discharge, with the highest gain observed in mobility (FAC; 2.09 ± 1.87 *vs* 2.37 ± 1.87, p<0.001). After adjusting the covariates, we found statistical functional improvement (R2=0.904, p<0.001). Among the patients who underwent inpatient rehabilitation, better baseline FAC (F value = 3240.2; $p<.001$) and more days of intervention (F value = 7.7; $p=0.006$) were significantly associated with greater functional improvement.

Conclusions

Patients who undergo inpatient rehabilitation demonstrate significant functional improvements, primarily in the mobility domain. Baseline functional level and dosage of rehabilitation are main factors related with functional improvement. This study contributes with evidence on the effectiveness of implementing rehabilitation in standard oncology treatment. Further larger and randomized control trials are needed to confirm our results.

eP615

ASSESSING THE IMPACT OF A STRUCTURED EXERCISE INTERVENTION ON PHYSICAL SELF-WORTH IN MEN WITH PROSTATE CANCER: A RANDOMIZED CONTROLLED TRIAL

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Introduction
Management of poor body image and low self-esteem are top American Cancer Society priorities in the survivorship care of men with prostate cancer (PCa); however, interventions to improve self-esteem in this population are lacking. We investigate whether exercise can improve physical self-worth, a critical component of self-esteem, in men with PCa.
Methods
A secondary analysis was performed of a phase II randomized controlled trial to evaluate the effects of Exercise for Cancer Patients©® (EXCAP), a structured, home-based 6-week exercise intervention combining aerobic and resistance exercise, on physical self-worth. Men with non-metastatic PCa receiving radiation or androgen deprivation therapy (ADT) were randomized to EXCAP or usual care (UC). Physical self-worth was measured by the validated Physical Self-Perception Profile, a 30-item questionnaire where increased score represents higher physical self-worth, at pre- and post-intervention. Changes between arms were compared using analysis of covariance.
Results
Fifty-eight men with PCa were randomized. The effect of the 6-week exercise intervention on physical self-worth was moderated by subjects' self-worth at baseline. Compared to UC, EXCAP significantly improved physical self-worth in those with higher self-worth at baseline (subject baseline self-worth >50th percentile, p=<0.04; >25th percentile, p<0.01).
Conclusions
Exercise improves physical self-worth in men with PCa receiving radiation or ADT, a population that struggles with body image. This benefit appears greater in those with a higher physical self-worth at baseline. Exercise should be recommended as part of PCa survivorship care to boost body image, self-esteem, and self-worth. Interventions for those with low baseline physical self-worth warrant further investigation.

eP616

THE ROLE OF SOCIAL INCLUSION IN FACILITATING A POSITIVE 'RETURN TO WORK' EXPERIENCE AFTER CANCER

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Introduction
There is an increasing focus on factors that facilitate return to work for survivors of cancer. However, less work has quantitatively examined the factors that contribute to a positive return to work experience. This study examined the relative impact of workplace support and social inclusion on the quality of the return to work experience for cancer survivors.
Methods
Online survey of cancer survivors diagnosed from 2015-2017 who had returned to work following treatment. Measures included contact with employers/co-workers while absent from work, perceived workplace support (Work Practice Questionnaire) and perceived social inclusion (Workplace Loneliness Scale) at the time of returning to work, and satisfaction with the return to work experience (7-item scale designed for this study). Participants were recruited through workplaces, hospitals, social media and a market research company panel.
Results
189 cancer survivors participated. The sample was 62% female, with an average age of 55 years (SD=12) and a range of diagnoses. Contact with employers/co-workers *while absent from work* predicted a positive return to work experience. Greater perceived workplace support and perceived social inclusion *at the time of returning to work* predicted a positive return to work experience. Further analyses indicated that the relationship between workplace support and satisfaction with the return to work experience was fully mediated by social inclusion.
Conclusions
Perceptions of social inclusion and contact with the workplace while absent from work are crucial factors facilitating a positive return to work experience. Return to work initiatives should foster teamwork and relationships, as well as providing support for practical issues.

eP617

INADEQUACY OF APPEARANCE CARE FOR CANCER PATIENTS IN JAPAN.

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Introduction
Appearance Care means any cosmetic compensation for visual changes caused by cancer treatments, e.g. wigs for hair loss and camouflage makeup for surgical scars and chemotherapy-induced pigmentation. The Japanese government has updated the Basic Plan to Promote Cancer Control every 5 years. The latest plan, approved in 2017, picked up "Appearance Care" as one of the important issues for Cancer Survivorship. However, the specific measures have not been instructed yet.
Methods
We asked the participants in a workshop on Appearance Care for interview about the approach on Appearance Care at their hospitals.
Results
Nine participants responded to the interview voluntarily. Their affiliation included three major hospitals in Tokyo, and three major hospitals and small hospitals in regional towns. The efforts on Appearance Care at their facilities were various from "Nothing done at all" to "Nurses provide the required information". The major hospitals in urban cities tended to act positively than regional small hospitals. However, all respondents felt that "Current care is not enough for patients", and that "Cooperation and understanding of other staff have not been obtained." A nurse in regional small hospital felt even that "Some doctors have opponent opinion against Appearance Care".
Conclusions
The fact that the government has begun to take Appearance Care as necessary issues shows improvement in awareness for cancer patients' quality of life in Japan. However, our small interview survey suggested that Appearance Care in Japan is not adequate currently. A large survey on current status should be necessary to establish concrete measures for Appearance Care.

eP618

SYMPTOM BURDEN IN SEDENTARY COLORECTAL CANCER PATIENTS DURING CHEMOTHERAPY - INSTRUCTED PEDOMETER INTERVENTION WITH COUNSELING

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Introduction
Few exercise studies have measured the symptom burden of pre-diagnosed sedentary colorectal cancer patients. Research on this high-risk population is needed to clarify whether pedometer interventions might have a positive effect on sustainable change of behavioral lifestyle and may reduce the patients' symptoms during treatment. The objective was to examine the impact of two 12-weeks instructed pedometer interventions (low to moderate intensity versus progressive intensity) on symptom burden in sedentary patients with colorectal cancer during adjuvant chemotherapy.
Methods
Colorectal cancer patients receiving chemotherapy screened for self-reported physical activity level below national guidelines (< 150 min/week moderate physical activity, and at least 20 minutes of strenuous physical activity 2/weekly) were randomized to: a) 12 weeks home-based low intensity pedometer intervention + counseling; b) 6 weeks pedometer intervention with interval walk + 6 weeks hospital-based intervention + counseling. The counseling included motivational elements, exploration of barriers, and symptom management. The patients completed The MD Andersen symptom Inventory (13-item symptom assessment) and EORTC QLQ-CIPN2044 (20-item symptom assessment) questionnaire weekly during the 12-week intervention.
Results
Patient cases (n=20) will be presented focusing on: Pedometer adherence rate (90%), daily pedometer data over 12 weeks (average steps >6000), DXA scan (increase muscle mass 1 kg, decrease fat 2%), physical activity level and symptom burden (prevalence, level, clusters) e.g. peripheral neuropathy, fatigue, nausea, constipation, diarrhea, pain, disturbed sleep and remembering.
Conclusions
Preliminary results from both interventions indicate that the patients' symptom burden does not influence the adherence rate, despite challenges to recruit patients.

eP619
SAFETY AND FEASIBILITY OF EXTENDING INTERVAL FLUSHING EVERY 3 MONTHS FOR MAINTENANCE OF CHEMOPORT IN COLORECTAL CANCER PATIENTS AFTER COMPLETION OF CURATIVE INTENDED TREATMENTS

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Introduction
Colorectal cancer (CRC) patients treated with curative surgery undergo 5-FU based chemotherapy using chemoport (CP) in case of high-risk of recurrence. The manufacturer recommends monthly flushing for maintain CP, however the time interval lacks scientific evidence. The aim of this study is to investigate whether the extended maintenance intervals is safe and feasible.
Methods
A retrospective cohort was conducted in CRC patients who underwent curative intended surgery and perioperative chemotherapy using CP between 2010 and 2017. Patient were enrolled if CP was maintained at least 6 months with 3-month interval flushing using heparin, while patient who were recurred within 1 month, removed CP within 6 months without definitive causes, or violation of flushing interval were excluded. The primary end points were the functional CP maintenance rate.
Results
A total of 214 CRC patients underwent curative intended treatments. Among them, 6 patients (early recurrence within 1 month) and 54 patients (violation of flushing interval) were excluded, finally 154 patients were analyzed. Mean flushing interval was 98.4 days (95% CI, 96.2 - 100.6; range, 60-120). At the Dec 2018, 35 patients kept the CP, 92 were planned removal, and 24 were reused the CP, while two patients had to unexpectedly remove due to CP site infection and pain. Thus, the functional CP maintenance rate was 98.7% (152/154).
Conclusions
Our study demonstrated that 3-month interval flushing is safe and feasible in CRC patients. Extended time interval up to 3 months might be considered because it is compatible with CRC surveillance visit schedules and convenient for patients.

eP620
ROLE OF GROUP THERAPY IN IMPROVING PERCEIVED BENEFITS AND MOTIVATION TO EXERCISE AMONG ADULTS UNDERGOING CANCER THERAPIES

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Introduction
Exercise, as evidenced numerous times, has beneficial effects on physiological symptoms and quality of life of cancer survivors. Sociocultural barriers surrounding exercise, particularly pertaining to its initiation and adherence, are significant among the South Asian communities. These barriers in conjuncture with the stigma surrounding cancer are augmented post diagnosis. With an intention to improve awareness and attitude towards exercise, a group therapy programme was employed between Oct-Dec 2018 for 213 survivors receiving physiotherapy services at a tertiary care hospital among which 126 survivors enrolled for group exercise sessions (group size 4-7 members). The current study aimed to assess the impact of an on-going group exercise programme on motivation and attitude towards exercise among survivors receiving cancer therapies.
Methods
A qualitative design using a phenomenological approach was used to conduct in-depth interviews. A semi structured questionnaire was developed and after obtaining verbal consent, 13 participants (9 men, 4 women; age 18 – 65 years) receiving cancer therapies were interviewed in their native language. The interview was audiotaped, transcribed and analysed for themes
Results
The interviews revealed four prominent themes viz awareness, benefits, willingness and barriers. Participants had low awareness about exercise and its benefits prior to enrollment in the program. Benefits were perceived across physical, functional and emotional domains. All expressed willingness to exercise after discharge and seemed motivated. Fatigue and lack of guidance at home were perceived as barriers.
Conclusions
Group exercise was well received by survivors undergoing cancer therapies and helped develop a positive attitude towards exercise.

eP621
CONSIDERING SURVIVORS' PREFERENCES IN THE DESIGN OF SUPPORTIVE CARE SERVICES

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Introduction
Substantial evidence describing cancer survivors' unmet physical, psychological and social needs has prompted growing attention to the delivery of supportive care in survivorship. Surveillance, follow-up, symptom management, and self-management support are significant components of survivorship care that may overcome unmet needs and promote survivors' well-being. However, a variety of factors including access, navigation, continuity of information, and the structure of interventions, may influence the uptake of care by cancer survivors, thereby limiting the potential positive impact of these services. In this study, we critically examine how survivors' preferences for accessing supportive care are reflected in clinical practice guidelines and evidence informing survivorship care.
Methods
This analysis draws on an environmental scan of clinical practice guidelines, a review of evidence regarding survivors' preferences for accessing supportive care after treatment, and case exemplars from our in-depth interviews with survivors of hematological and colorectal cancers.
Results
Based on a qualitative analysis, we identify strengths and tensions with respect to how survivors' preferences are integrated in the design of survivorship care. Major themes from the environmental scan and literature review focus on the location of the services, the involvement of various health care providers, the role of peer support, and the use of technology. These themes and their implications for survivors' quality of life are further highlighted through the case exemplars.
Conclusions
Considering survivors' preferences in the design of survivorship care is essential to ensure responsiveness to their needs. Practice, research, and policy recommendations for ensuring the patient-focused design of survivorship care will be proposed.

eP622
REPORTS OF ASSISTANCE WITH ACTIVITIES OF DAILY LIVING: ADVANCED CANCER PATIENT AND SPOUSE CAREGIVER CONCORDANCE

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Introduction
Little research exists on patient-proxy (dis)agreement about functional status/activities of daily living (ADLs) in cancer populations. Most existing work focuses on dementia patients or older adults, or on proxies other than family caregivers (e.g., medical providers). The goal of this study was to describe patient-caregiver concordance of reported ADLs and instrumental IADLs (IADLs) in the context of advanced cancer.
Methods
Participants were 88 patients with stage III/IV GI/thoracic cancer and their spouse-caregivers. Participants completed questionnaires assessing patient independence/caregiver assistance to patients (yes/no) in 8 ADLs and 7 IADLs, relationship satisfaction, and caregiver burden.
Results
Table 1 displays participant demographics. Patient and caregiver reports of ADL assistance were positively correlated, but not all IADL reports were correlated (Table 2). Caregivers reported that patients needed assistance in significantly more activities than the number reported by patients (p=.042). On average, dyads disagreed more about IADLs (24.2%, SD=20.7) than ADLs (9.5%, SD=13.1). Older patient age was associated with greater ADL disagreement (B=.008, p=.017). Greater caregiver burden (B=-.011, p=.022) and greater patient relationship satisfaction (B=-.009, p=.028) were associated with lower disagreement about activities.

Table 1. Participant demographics (N=88).

	Patients		Caregivers	
	M	*SD*	*M*	*SD*
Age	66.8	9.2	64.7	9.2
Years married	34.1	15.6	34.1	15.9
	n	%	*n*	%
Gender				
Male	63	71.6	25	28.4
Female	25	28.4	63	71.6
Ethnicity				
Hispanic/Latinx	3	3.4	5	5.7
Non-Hispanic/Latinx	85	96.6	81	92.0
Missing	0	0.0	2	2.3
Race				
White/Caucasian	82	93.2	79	89.8
Black/African American	5	5.7	4	4.5
American Indian/Alaska Native	1	1.1	2	2.3
Other	0	0.0	1	1.1
Missing	0	0.0	2	2.3
Education level				
7-11 years	3	3.4	2	2.3
High school graduate/equivalent	13	14.8	14	15.9
Some college or vocational school	29	33.0	32	36.4
College graduate (4 years)	16	18.2	13	14.8
Some graduate/professional school	7	8.0	6	6.8
Graduate/professional degree	20	22.7	21	23.9
Employment status				
Not employed	67	76.1	53	60.2
Employed part-time	5	5.7	11	12.5
Employed full-time	15	17.0	21	23.9
Missing	1	1.1	3	3.4
Annual household income				
$10,000 - $24,999	5	5.7	4	4.5
$25,000 - $39,999	13	14.8	14	15.9
$40,000 - $49,999	8	9.1	8	9.1
$50,000 - $74,999	27	30.7	24	27.3
$75,000 or more	33	37.5	37	42.0
Missing	2	2.3	1	1.1

Conclusions
Consistent with work in other populations, results suggest that patient-caregiver reports of patient independence in ADLs/IADLs are correlated, but caregivers report that patients receive significantly more assistance than patients report receiving. Results provide additional insight about patient-proxy ratings of functional status in the context of advanced cancer. Findings suggest that the relationship context influences perceptions of patient independence, and high disagreement may reflect "invisible support" from spouse-caregivers.

eP623
AEROBIC TRAINING VERSUS A COMBINATION OF AEROBIC AND RESISTANCE TRAINING IN PATIENTS WITH HEAD & NECK CANCER RECEIVING CHEMO-RADIOTHERAPY: A PILOT RANDOMIZED CONTROLLED TRIAL

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Introduction
There is a growing body of evidence on the role of exercise in alleviating the side effects of chemo radiation during head and neck cancer treatment. There is a need for research to determine the optimal mode and intensity of exercise in this patient population.
Methods
This study was a pilot randomized controlled trial where 22 subjects were either assigned to the aerobic training group (n= 11; 9 males and 2 females) or aerobic plus resistance training group (n= 11; 8 males and 3 females). Both the groups followed a 7-week exercise program consisting of 5 weekly sessions of exercise as tolerated by the patient & supervised by an experienced physiotherapist. Aerobic training group received a brisk walking intervention for 15min, 5days a week for 7 weeks while the other group received a combined program of aerobic & progressive resistance training (strengthening with Thera-band for 15-20 minutes, 3days a week for 7 weeks for major muscle groups). Functional capacity, quality of life, skeletal muscle & fatigue were assessed at baseline, end of 3 weeks of chemo-radiation & at the end of chemo-radiation at 7 weeks.

Results
This pilot study demonstrated that exercise training prevented a steep decline in the functional capacity, QoL & fatigue in both the groups, while the muscle mass improved. The between group analysis did not show a statistically significant difference.
Conclusions
Even though both the exercise interventions prevented a decline in outcome measures in these patients there was no significant difference between the two types of exercise interventions given in this study.

eP624
IMPACT OF A TRIMODAL PREHABILITATION PROGRAM ON FUNCTIONAL RECOVERY AFTER HEPATOBILIARY AND PANCREATIC CANCER SURGERY: PRELIMINARY FINDINGS FROM A RANDOMIZED CONTROLLED PILOT TRIAL

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Introduction
No studies thus far have evaluated the impact of a supervised trimodal prehabilitation program on functional exercise capacity in hepatobiliary and pancreatic cancer patients undergoing surgery.
Methods
A single-centre, parallel-arm randomized controlled pilot trial was conducted. Patients were assigned to either a prehabilitation or rehabilitation program. The prehabilitation group received a trimodal program comprising exercise (once-weekly supervised and home-based), nutritional counselling with whey protein supplementation, and relaxation exercises initiated 4 weeks before surgery. The rehabilitation group received the same trimodal program (minus once-weekly supervised exercise) initiated immediately after surgery. Both study arms continued the program for 8 weeks after surgery. The primary outcome was functional exercise capacity measured using the 6-minute walk test (6MWT).
Results
Thirty-five patients were randomized to receive prehabilitation (n=17) or rehabilitation (n=18). The prehabilitation group demonstrated a clinically meaningful improvement (+19.6 m [SE 0.2]; p =0.061) in 6MWT from baseline to pre-operative assessment. Both groups were comparable in age, gender, appendicular skeletal muscle index and baseline 6MWT. The rehabilitation group experienced a statistically and clinically significant decrease in mean 6MWT from baseline to the 4-wk post-operative assessment (-23.72 m [SE, 0.36]; p=0.035), whereas the prehabilitation group was able to maintain their baseline walking capacity (-0.11 m [SE 0.3]; p=0.991).
Conclusions
A prehabilitation program in hepatobiliary and pancreatic cancer patients can deliver meaningful changes in pre and postoperative functional exercise capacity.

eP625
SOCIAL SUPPORT AS A MODERATOR IN THE RELATIONSHIP BETWEEN INTRUSIVE THOUGHTS AND PSYCHOLOGICAL SYMPTOMS AMONG SPANISH-SPEAKING LATINAS WITH BREAST CANCER

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Introduction
Intrusive thoughts, defined as unwanted and recurrent thoughts about a stressful experience, are associated with psychological distress in women with breast cancer. This study assessed moderating effects of different types of social support on the association between intrusive thoughts and psychological distress among Latina breast cancer survivors.
Methods
We used baseline data from a randomized controlled trial of a stress management intervention delivered to 151 Spanish-speaking Latinas with non-metastatic breast cancer within one year of diagnosis. Intrusive thoughts, four dimensions of social support (emotional/informational, tangible, affectionate, positive social interaction), and symptoms of anxiety and depression were assessed through in-person interviews. Information on age, time since diagnosis, breast cancer variables, history of depression, and marital status served as covariates. Generalized linear models were used to investigate bivariate and multivariate associations and to explore moderation effects of the four dimensions of social support.
Results
In bivariate models, intrusive thoughts were associated positively with depressive (β=0.022, p=0.0014) and anxiety (β=0.047, p<.0001) symptoms. Adjusting for other factors, intrusive thoughts remained associated with depressive symptoms (β=0.022, p=0.008), regardless of level of social support (for all support dimensions). For anxiety, there were significant interactions of tangible (β=-0.013, p=0.034) and affectionate (β=-0.022, p=0.005) support with intrusive thoughts. Intrusive thoughts were associated more strongly with anxiety symptoms among women reporting less tangible and affectionate support than those with higher levels of these types of support.
Conclusions
Tangible and affectionate support had protective effects on anxiety symptoms among Spanish-speaking Latina breast cancer survivors experiencing intrusive thoughts, but not depressive symptoms.

eP626
A PERSONALISED AND PROGRESSIVE NEUROMUSCULAR ELECTRICAL STIMULATION (NMES) EXERCISE INTERVENTION IN ADULTS WITH ADVANCED COLORECTAL CANCER – A CLINICAL CASE SERIES

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Introduction
The loss of physical function is a common struggle amongst patients with advanced colorectal cancer. Therapeutic exercise is recommended; however, due to physical impairments, voluntary exercise participation is not always possible. Neuromuscular electrical stimulation (NMES) may represent a practical short-term approach. The primary aim of this study was to assess the safety, feasibility and efficacy of a personalised and progressive NMES exercise intervention in adults with advanced colorectal cancer.
Methods
Three adult patients with advanced colorectal cancer were recruited. A personalised and progressive NMES exercise intervention was implemented

in each case over a 4 week period. The 30 seconds sit to stand test (STS), 6-minute walk test (6MWT), and EORTC QLQ C-30 were performed pre-and post-intervention. For patients deemed unsuitable for the 6MWT, the timed up and go test (TUG) was used to assess functional mobility. Patients completed semi structured interviews post intervention to explore their experiences and views on the intervention, and its impact on their daily lives.

Results

All 3 patients completed the intervention and completed pre-and post-assessments. Two of 3 patients improved STS, 2 of 3 patients improved 6MWT. One patient completed the TUG and improved post intervention. Two of 3 patients improved Global QoL. Perceived benefits included improved leg muscle strength and motivation to be more physically active.

Conclusions

A personalised and progressive NMES exercise intervention appears safe and may improve functional capacity and QoL in adults with advanced colorectal cancer. Replication of these results in a controlled prospective study is warranted prior to clinical implementation.

eP627

UNDERSERVED BREAST CANCER SURVIVORS' NEEDS: REPORT FROM BCSNP PROJECT

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Introduction

We started the Breast Cancer Survivorship Navigation Project (BCSNP) to understand needs and gaps experienced by underserved breast cancer survivors and their caregivers (racial and ethnic minorities, less formally educated, limited English speaking, and gender and sexual minorities). For the initial purpose of this project, "survivor" is defined as anyone who had been diagnosed with breast cancer, treated with curative intent, and no longer receiving treatment except for adjuvant hormonal therapy.

Methods

The BCSNP team includes survivors, patient navigators, clinicians, advocates and researchers representing organizations aiding underserved patients. We collaboratively created a survey to assess regional survivors' needs. The survey was administered in three languages through eight organizations across the San Francisco Bay area.

Results

We received 63 complete responses; 62 met eligibility criteria. Respondents identified as African American (28%), Latina (21%), Asian/Pacific Islander (19%), White (19%), other (9%), Latina and white (2%), and Latina and other (2%). All 62 identified as female and 4 respondents identified as LGBTQ. Respondents identified the following unmet needs: Memory and thinking problems (44%), Physical side effects (40%), Mental health effects (39%), Healthy living (29%), Logistics/access to follow-up care (21%), Work and relationship concerns (19%), Religious/spiritual concerns (19%), and Medical follow-up needs (15%).

Conclusions

Memory, physical and mental health side effects were the most commonly reported unmet needs amongst a group of diverse and underserved respondents. Access to treatment education, complementary care and access to support group were top three services/information requested. Our findings have important implications for optimizing survivorship care programs/survivorship care interventions for underserved patients.

eP628

EFFECTS OF A HOME-BASED EXERCISE PROGRAM ON CANCER-RELATED FATIGUE AND MUSCULAR STRENGTH IN PATIENTS WITH BREAST CANCER

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Introduction

Cancer-related fatigue (CRF) is a persistent tiredness and a daily lack of energy commonly experienced in patients with breast cancer (BC). Due to CRF, BC patients have reduced ability to perform daily activities, become less active, and ultimately lose muscular strength. Exercise increases muscular strength and may alleviate CRF. This study assessed effects of exercise on CRF and muscular strength in BC patients.

Methods

Ninety BC patients (55.5±9.6 years, 79% white, 48% and 46% under radiation or hormone therapy) were randomized into a 6-week Exercise for Cancer Patients (EXCAP) program or standard care (Control). EXCAP is a home-based exercise program combining aerobic walking and resistance band training. The Brief Fatigue Inventory was used to assess overall CRF and the interference of CRF with daily activities and a 7-10 repetition maximum chest press and leg extension strength test was performed to assess muscular strength at pre- and post-intervention.

Results

The EXCAP group significantly improved overall (-0.9±0.3, p=0.01) and interference of CRF (-1.1±0.3, p<0.01) from pre- to post-intervention while the Control group did not. The EXCAP group had significantly greater improvements in overall (-1.3±0.4, p<0.01) and interference of CRF (-1.3±0.4, p<0.01) than the Control group. The EXCAP group also significantly increased upper- (3.9±1.4, p<0.01) and lower-body strength (6.4±1.3, p<0.01) from pre- to post-intervention while the control group did not. The EXCAP group had significantly greater increase in lower-body strength than the Control group (4.5±1.7, p=0.01).

Conclusions

Exercise combining aerobic walking and resistance band training helped alleviate CRF and increase muscular strength in BC patients.

eP629

LONGITUDINAL EFFECTS OF OROPHARYNGEAL IRRADIATION ON SUBMUCOSAL (INTERNAL) LYMPHEDEMA OF THE HEAD AND NECK

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Introduction

Lymphedema is a well-known side effect of cancer treatment. It affects quality of life by causing functional impairments such as dysphagia, odynophagia, changes in voice and communication, musculoskeletal dysfunction, and pain. We sought to identify a marker for internal lymphedema that can be objectively measured in routine post-treatment surveillance radiography.

Methods

We identified 174 patients from our tumor board database who underwent treatment for oropharynx cancer at our institution. Twenty-one patients had contrast-enhanced neck CT both before treatment and at least once after treatment. All but one patient had radiation therapy. Thirteen patients also underwent transoral surgery with seven having undergone neck

dissection. Epiglottic thickness and submental soft tissue radiodensity were measured by two neuroradiologists.

Results

In patients undergoing radiation therapy, the epiglottic thickness increased by 245% (average, axial) and 110% (average, sagittal) with a range of 106% to 418% (axial) and 43% to 253% (sagittal). Radiodensity of the submental tissues was noted to increase by an average of 31 units with a range of 2.4 to 99 units change in patients undergoing radiation, reflecting increased interstitial edema. The singular patient who did not undergo radiation had no change in these parameters.

Conclusions

Epiglottic thickness and submental tissue radiodensity increased in all twenty patients who underwent radiotherapy. It's our contention that submucosal edema of the pharynx and larynx as seen on post-treatment radiography may serve as a method to evaluate internal lymphedema. Future studies may serve to correlate these radiographic parameters to functional impairment of swallow, voice, airway, and neck range of motion.

eP630

PATIENT-REPORTED OUTCOMES (PROS) IN PATIENTS (PTS) WITH PIK3CA-MUTATED HORMONE RECEPTOR-POSITIVE (HR+), HUMAN EPIDERMAL GROWTH FACTOR RECEPTOR-2–NEGATIVE (HER2–) ADVANCED BREAST CANCER (ABC) FROM SOLAR-1

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Introduction

Approximately 40% of pts with HR+, HER2– ABC have tumors with a *PIK3CA* mutation, resulting in PI3K pathway hyperactivation. In SOLAR-1, the oral α-specific PI3K inhibitor alpelisib (+fulvestrant) significantly improved (vs placebo+fulvestrant) both PFS and ORR in the *PIK3CA*-mutant cohort. PROs offer insight into therapeutic benefit by measuring whether quality of life (QoL) is maintained during treatment.

Methods

Postmenopausal women or men with HR+, HER2– ABC whose disease progressed on/after an AI were randomized to receive alpelisib 300 mg QD (or placebo) +fulvestrant 500 mg Q28d + C1d15. Secondary objectives included PROs using EORTC QLQ-C30, EQ-5D-5L, and BPI-SF scales. PROs were collected at screening, every 8 weeks for 18 months then every 12 weeks thereafter, at end of treatment, and during follow-up for efficacy. Linear mixed effects models were used to assess score changes from baseline. Time to 10% deterioration (TTD) was compared between arms' survival distribution per Kaplan-Meier methodology.

Results

Of pts in the *PIK3CA*-mutant cohort (n=341), 93% and ≥75% completed questionnaires at baseline and post-baseline, respectively. Adjusted mean changes from baseline in EORTC global health status/QoL scores were <10% for all visits through week 96 for both arms, with a mean difference between arms of <3% for all visits. There was no difference between arms in TTD in global health/QoL status (HR, 1.03; 95% CI, 0.72-1.48). Analysis of TTD in EORTC physical, social, and emotional functioning scores revealed no meaningful differences between arms.

Conclusions

Overall QoL was maintained in pts treated with alpelisib+fulvestrant. NCT02437318

eP631

SOCIAL ROLE DISABILITY AMONG ADULT AND CANCER SURVIVORS: RESULTS FROM THE 2010 LIVESTRONG SURVEY

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Introduction

The prevalence of social role disability, or SRD (e.g. difficulty participating in employment, social relationships) among cancer survivors is not known. In this analysis we 1) identify the prevalence of SRD and 2) identify factors associated with SRD among a sample of U.S. adult cancer survivors.

Methods

Secondary analysis of 2010 cross-sectional LIVESTRONG survey data. Guided by the World Health Organization's International Classification of Functioning, Disability and Health, six SRD domains (accessing the community, interpersonal relationships, sexual relationships, school, employment) were constructed from relevant survey items. We calculated associations among sociodemographic, clinical, and treatment-related symptoms using logistic regression, with presence of SRD in any domain as the dependent variable.

Results

Respondents (N = 4,286) were aged 18 to 94 years (mean/SD 49.06/14.38) and predominantly white (85.8%). Breast cancer (26.8%) was the most prevalent cancer type, followed by hematologic malignancies (13.4%). Median time since diagnosis was 4 years. Half the sample (50.4%) endorsed SRD in one or more domains. The most frequently endorsed domain was sexual relationships (29%), followed by accessing the community (25.7%), employment (17.9%), and interpersonal relationships (8.1%). Predictors of SRD included: more recent diagnosis ($p < .05$); breast, colorectal, prostate, or gynecologic cancer ($p < .01$); history of chemotherapy or radiation treatments ($p < .01$); cognitive complaints, mood disturbances, sleep problems, fatigue, pain, dizziness, and personal appearance concerns (all $p < .001$).

Conclusions

Many cancer survivors experience cancer-related SRD. Cognitive and affective symptoms, pain, fatigue, sleep problems, dizziness, and personal appearance concerns are strong predictors of SRD and present actionable intervention targets for survivorship care.

eP632

PERCEIVED NEEDS OF YOUNG ADULT CANCER SURVIVORS

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Introduction
To recognize perceived needs (Informational, emotional, about hospital and doctor, physical, familial, spiritual, social) of young adult cancer patients to their older counterparts.
Methods
We conducted a subset analysis of the multicenter survey data from 2,661 cancer patients aged 18-88(58.84±28.5) in Korea from July to August 2008. Young adult cancer patients are 185 ages under 39 years. Data were analyzed using Pearson's chi-square or ANOVA and multivariate logistic regression analysis.
Results
In every types of perceived needs, young adult cancer patients are higher demands than the older counterparts. In multivariable analyses young adult cancer patients reported a significantly higher level of overall perceived needs to their older counterparts. (OR 2.85, P=0.00, 95% CI 1.91- 4.24)
Conclusions
Young adult cancer patients demonstrated the high demand for perceived needs from overall needs to informational, emotional, about hospital and doctor, physical, familal, spiritual and social needs. Likely NCCN guideline for Adolescents and Young adult cancer patients, young cancer patients' needs could be specifically targeted for management and interventions in Korea.

eP633
BARRIERS TO PHYSICAL ACTIVITY IN CANCER PATIENTS.

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Introduction
The American College of Sports Medicine exercise guidelines for cancer survivors encourage a combination of 150 minutes of moderate-intensity aerobic activity and two to three weekly sessions of strength training. Barriers to these guidelines exists for the majority of the population while cancer survivors face more symptoms of fatigue and side effects from treatments.
Methods
After obtaining IRB approval, 200 patients were enrolled in the outpatient supportive care and rehabilitation clinic. Patients were asked to complete surveys reporting their physical activity using the Stanford Patient Education Research Center Exercise Behaviors Survey, their barriers to physical activity with a barrier scale, and their symptom assessment using the ESAS-FS.
Results
In all patients, those who adhered to the physical activity guideline of >150 minutes had less barriers to physical activity, 2.4 versus 4.2 barriers, respectively ($p<0.0001$). Females were less likely to adhere to recommended guideline of 150 minutes a week of physical activity ($p=0.03$). Patients experiencing a lack of interest, a lack of self-discipline were more likely to not achieve the recommended 150 minutes of physical activity. Patients with symptoms of pain or fatigue were significantly less likely to adhere to the guidelines ($p=0.007$ and $p=0.005$).
Conclusions
Although universal recommendations are given for physical activity in supportive care and rehabilitation clinic, adherence to exercise recommended is low. Issues of motivational type appear to be the main predictor including lack of interest, self-discipline and fatigue. Therefore interventions aimed at increasing motivation, and treating fatigue are likely to result best alternative to improve the situation.

eP634
EDUCATIONAL ATTAINMENT AMONG CHILDHOOD CANCER SURVIVORS: A META-ANALYSIS

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Introduction
Despite significant developments in the treatment of childhood cancer, some studies have suggested that cognitive and educational sequelae remain. The factors that influence these outcomes require further investigation. This meta-analysis examined evidence for the negative impact of childhood cancer on educational attainment. Secondary aims were to examine whether diagnosis prior to adolescence results in poorer educational attainment than a later diagnosis, and the disease and treatment factors that influence this relationship.
Methods
A systematic literature search was conducted in Embase, Medline and PsycINFO, using terms based on the key concepts “cancer”, “childhood” and “educational attainment”. Eleven eligible studies were identified.
Results
Compared to non-cancer controls, cancer survivors were less likely to graduate high school (Odds Ratio(OR)=0.74, 95%CI: 0.60, 0.92) or university (OR=0.74, 95%CI: 0.58, 0.94). Survivors diagnosed pre-adolescence demonstrated lower rates of high-school graduation (OR=0.73, 95%CI: 0.59, 0.89) but not university graduation (OR=0.78, 95%CI: 0.46, 1.34) compared to same-age non-cancer controls. CNS cancer survivors were less likely than non-cancer controls to graduate from high school (OR=0.34, 95%CI: 0.25, 0.47) or obtain an undergraduate degree (OR=0.50, 95%CI: 0.41, 0.62). Survivors diagnosed at an older age or those with non-CNS cancers showed no educational disadvantage compared to non-cancer controls.
Conclusions
Reduced educational attainment was identified for cancer survivors at both high school and university levels. Survivors of CNS cancers and those diagnosed pre-adolescence were particularly disadvantaged. Findings highlight the need for further interventions and educational supports, particularly for vulnerable groups.

eP635
EFFICACY AND SAFETY OF MOBILE HEALTHCARE APPLICATION AND WEARABLE DEVICE IN IMPROVING PHYSICAL PERFORMANCE IN PATIENTS WITH HEPATOCELLULAR CARCINOMA

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Introduction
Little is known about the association of exercise and hepatocellular carcinoma (HCC). Moreover, HCC patients fear of the development of hepatic decompensation during exercise. mHealth is an novel healthcare system that is suitable to support such vulnerable participants.
The aim of this study was to evaluate the efficacy and safety of rehabilitation exercises individually prescribed via an mHealth application on physical fitness, body composition, biochemical profile, and quality of life in HCC patients.
Methods
A total of 37 HCC patients were enrolled in a 12-week course with an mHealth application program targeted to HCC patients. At baseline, 6-week, and 12-week, participants’ physical fitness levels (6-minute walk test, grip strength test, 30-second chair stand test) were measured.

Physical activity level (IPAQ), body composition (BMI, body fat percentage, muscle mass), biochemical profiles, and quality of life (EORTC QLQ-C30) were assessed at baseline and endpoint. At the 6-week midpoint, exercise intensity was individually adjusted.

Results

Of the 37 patients, 31 completed the 12 weeks of intervention. Grip strength improved significantly after 12 weeks of intervention. The 30-second chair stand test and 6 minute walk test showed significant improvement after 6 and 12 weeks, and from 6 to 12 weeks. Muscle mass and IPAQ score increased significantly after 12 weeks of intervention without biochemical deterioration.

Conclusions

Twelve weeks of mhealth care, including an individually prescribed rehabilitation exercise program, significantly improved physical fitness, body composition, and physical activity without any complication or biochemical deterioration in compensated HCC patients who had completed therapy.

eP636
QUALITY OF LIFE DURING CHEMOTHERAPY FOR GYNECOLICAL CANCERS: A LONGITUDINAL STUDY

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Introduction

Despite advancements in cancer treatment, chemotherapy is still characterized by a high degree of toxicity and involves several side effects that deeply affect the quality of life and the functional state of cancer patients.

Methods

One hundred and sixty-five patients treated for gynecological cancer at the San Raffaele Hospital completed the European Organization for Research and Treatment of Cancer - Quality of Life Questionnaire (EORTC QLQ-C30) after their first, third and fifth chemotherapy infusion. The five functional scales (physical; emotional; role; cognitive; and social) and the quality of life scale were considered. Comparisons were performed with nonparametric test. P-values <0.05 were considered significant.

Results

The mean age of the sample was 58.23 (SD=13.19); 110 patients had a primary tumor, while 55 a recurring disease. There was no significant difference between the two groups in the scales at first infusion. A significant improvement was registered for all the scales between the first and third infusion, except for the cognitive functioning scale, which remained stable. There was no significant change between the third and the fifth infusion.

Conclusions

These findings show that patients' quality of life improves between the first and the third chemotherapy infusion and stabilizes afterwards. This could suggest that, after the initial stress of a diagnosis, patients progressively adjust to the new situation and cope with the side effects of treatment and its consequences.

eP637
INTRODUCTION OF A NURSE-LED TOTALLY IMPLANTABLE VASCULAR INSERTION DEVICE (TIVAD) SERVICE FOR PATIENTS WITH METASTATIC COLORECTAL, BREAST AND LUNG CANCER

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Introduction

Patients with metastatic cancer frequently require Peripherally Inserted Central Catheters (PICCs) to deliver chemotherapy in the ambulatory setting. PICCs have a higher incidence of Venous Thrombo-Embolism (VTE), infections, need to be removed when patients have a treatment break and also require weekly line flushes. A group of patients began asking about the potential to have a Totally Implantable Vascular Access Device (TIVAD) inserted, however we didn't offer this service.

Methods

As the nurse consultant for haematology and oncology I was keen to explore the potential to introduce a nurse-led TIVAD service that wouldn't require any form of x-ray guidance. I contacted pfm medical UK Ltd. who were able to supply 1:1 on-site clinical training until competency was achieved. We use Ultrasound and ECG technology so as to avoid the need for fluoroscopy.

Results

A total of 30 patients have had TIVADs inserted. The nurse consultant has gained full competency and we are already training up our second Advanced Nurse Practitioner to insert TIVADs.

Patients are already reporting significant improvements in their quality of life in comparison to having PICCs inserted.

Conclusions

The introduction of a nurse-led TIVAD service is already delivering significant improvements for the quality of life of patients with metastatic cancer. Patients are no longer having multiple PICC insertions and we have already seen a significant reduction in VTE and infections. Future plans to expand the service for patients receiving adjuvant treatment are already under way.

eP638
CARDIOVASCULAR RISK AND STATUS OF DYSLIPIDEMIA MANAGEMENT IN CANCER SURVIVORS

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Introduction

Due to the improvement in cancer treatment results, non-cancer mortality is an important issue for CS. Cardiovascular diseases(CVD) are the leading causes of death in Korea and globally. In addition to lowering the risk of CVD, the use of statin led to an overall reduction in cancer mortality in recent observational studies. We investigated the current dyslipidemia management status in CS with reference to new guidelines.

Methods

The study is a cross-sectional analysis of 1,460 CS aged from 40 to 75 years who participated in Korean National Health and Nutrition Examination Surveys(KNHANES) from 2007 to 2016. The dyslipidemia management status among CS according to new American College of cardiology/American Heart Association (ACC/AHA) guidelines and Korean Coronary Heart Disease risk score (KRS) guidelines was assessed.

Results

The rate of treatment for dyslipidemia was 8.5% for males, 13.8% for females, and 11.9% overall. Among those CS who were not receiving treatment for dyslipidemia, 59.6% of males, 34.2% of females, and 43.9% of total CS would have been eligible for statin therapy under the new ACC/AHA and KRS guidelines. The rate of undertreatment dyslipidemia increased with age and with the length of time since cancer diagnosis.

Table 1. Risk factors for cardio-cerebrovascular disease in cancer survivors

	Total(N=1460)	Male(N=519)	Female(N=941)
Blood pressure			
SBP, mean (SD)	120.5(16.4)	122.0(16.4)	119.7(16.3)
DBP, mean (SD)	75.0(9.3)	75.0(9.8)	75.0(9.0)
SBP≥140 or DBP ≥90, no. (%)	223(15.3)	88(17.1)	135(14.0)
Hypertension, diagnosed, no. (%)	475(29.8)	184(33.7)	291(27.5)
SBP≥140 or DBP ≥90 (poorly controlled hypertension) *	122(25.7)	43(24.8)	79(28.6)
Hypertension, on treatment, no. (%)	433(26.7)	160(29.2)	273(25.3)
SBP≥140 or DBP ≥90 (poorly controlled hypertension2) *	108(26.3)	36(23.6)	72(28.2)
Hypertension never diagnosed, no. (%)	985(70.2)	335(33.7)	650(72.5)
SBP≥140 or DBP ≥90 (undiagnosed hypertension) *	101(10.1)	45(13.2)	56(8.5)
Blood glucose			
FBS, mean (SD)	102.5(26.0)	106.1(28.4)	100.5(24.4)
FBS ≥126, no. (%)	145(8.9)	63(10.5)	82(8.0)
Diabetes, diagnosed, no. (%)	213(12.3)	102(16.4)	111(9.9)
HbA1c ≥ 7.0 (poorly controlled diabetes) *	103(43.1)	46(35.6)	57(50.3)
Diabetes,on treatment, no. (%)	190(11.1)	86(14.4)	104(9.2)
HbA1c ≥ 7.0 (poorly controlled diabetes) *	95(44.4)	40(36.0)	55(52.1)
Diabetes never diagnosed, no. (%)	1247(87.7)	417(83.6)	830(90.1)
FBS ≥126 (undiagnosed diabetes) *	47(3.7)	21(4.6)	26(3.2)
Blood lipid			
Totoal cholesterol , mean (SD)	188.7(36.4)	178.9(34.8)	194.2(36.1)
TG, mean (SD)	131.7(86.6)	141.9(103.3)	126(75.2)
HDL, mean (SD)	49.1(12.3)	45.7(11.8)	51(12.2)
LDL, mean (SD)	113.9(32.9)	106.4(31.8)	118.1(32.7)
Dyslipidemia, diagnosed, no. (%)	279(18.8)	70(13.3)	209(22.0)
Dyslipidemia, on treatment, no. (%)	180(12.4)	45(9.1)	135(14.3)
Dyslipidemia never diagnosed, no. (%)	1181(81.2)	449(86.7)	732(78.0)
Obesity			
BMI, mean (SD)	23.7(3.1)	23.3(2.9)	23.9(3.1)
Obesity (BMI 25~30kg/m^2), no. (%)	407(27.2)	122(23.9)	285(29.1)
Severe obesity (≥30kg/m^2), no. (%)	43(3.2)	9(2.1)	34(3.9)
Abdominal obesity			
WC, mean (SD)	82.0(9.0)	84(8.8)	81(8.8)
WC ≥90cm (male) or 85cm (female), no. (%)	424(52.5)	126(23.8)	298(28.7)
Smoking			
Current smoker, no. (%)	220(15.1)	182(33.7)	38(4.4)
Ex-smoker, no. (%)	287(19.7)	262(51.4)	25(2.7)
Other risk factors			
Old age : Male≥45years or Female≥55years, no. (%)	-	501(95.3)	592(54.8)
Clinical history of CVD (CHD & Stroke) , no. (%)	237(18.1)	87(19.6)	150(17.3)
HDL≥60 (protective factors) , no. (%)	273(19.5)	60(11.3)	213(24.3)

SBP, systolic blood pressure, DBP, diastolic blood pressure, FBS, fasting blood sugar, TG, triglycerides, HDL, high density lipoprotein cholesterol, LDL, low density lipoprotein cholesterol, BMI, body mass index, WC, waist circumference, CVD, cardiovascular disease, CHD, coronary heart disease.

* The denominator of the percentage presented is the number of patients being diagnosed or treated for each group.

Table 2. Awareness and management of dyslipidemia in different risk group

	Total	By gender		By age at examination (years)			By year since cancer diagnosis		
		Male	Female	40-59	60-69	70-75	1-3 years	3-5 years	≥5 years
Very high Risk (CVD + LDL≥70mg/dl)	103(5.8)	58(7.7)	53(4.7)	14(2.2)	48(8.4)	41(13.4)	15(2.8)	14(5.6)	73(7.3)
Awareness	28(1.4)	10(1.3)	18(1.8)	5(0.9)	15(2.4)	8(2.6)	4(0.9)	7(2.8)	17(1.5)
Treatment	19(1.1)	8(1.0)	11(1.0)	3(0.7)	10(1.5)	6(1.8)	3(0.6)	7(2.8)	9(0.7)
Control†	19(1.0)	10(1.7)	9(0.7)	3(0.4)	7(1.2)	9(3.1)	5(0.5)	3(0.4)	11(1.5)
Control among treated‡	4(20.3)	2(17.4)	2(6.5)	0(0.0)	2(10.9)	2(22.7)	1(24.7)	2(8.7)	1(7.5)
High risk group (DM+LDL≥100mg/dl)	221(13.6)	101(17.5)	120(11.4)	54(7.9)	106(19.9)	61(21.7)	48(11.6)	38(12.5)	135(14.9)
Awareness	77(5.0)	26(4.7)	51(5.2)	13(2.2)	42(8.4)	22(8.5)	12(2.8)	16(5.1)	47(5.9)
Treatment	53(3.7)	17(3.8)	36(3.7)	10(1.8)	28(6.3)	15(5.6)	9(1.9)	9(3.4)	34(4.6)
Control†	100(6.5)	56(9.9)	44(4.5)	25(3.6)	47(9.5)	28(10.7)	24(5.7)	20(6.6)	54(6.7)
Control among treated‡	35(74.5)	13(80.0)	20(71.2)	6(83.8)	17(70.5)	10(72.7)	6(81.4)	8(94.8)	18(67.9)
Intermediate risk group (≥1 risk factor + LDL≥130mg/dl)	317(35.2)	269(52.8)	254(25.0)	153(26.6)	229(45.2)	136(46.1)	134(36.1)	95(34.5)	284(35.0)
Awareness	96(8.5)	24(4.8)	72(7.6)	28(4.9)	50(9.3)	18(7.2)	23(5.9)	18(6.1)	55(7.1)
Treatment	64(4.5)	14(2.6)	50(5.6)	19(3.4)	34(6.4)	11(4.4)	14(4.4)	14(5.0)	36(4.4)
Control†	37(225.4)	197(39.1)	175(17.4)	110(20.1)	163(31.2)	89(33.0)	97(27.0)	68(23.1)	204(25.1)
Control among treated‡	54(56.0)	13(86.1)	41(85.9)	18(99.0)	27(75.1)	9(81.1)	12(92.5)	13(95.2)	29(79.6)
Low risk group (0-1 risk group + LDL≥160mg/dl)	63(945.5)	10(922.0)	53(438.9)	41(769.3)	14(326.3)	6(0.6)	14(149.5)	12(47.5)	36(142.9)
Awareness	7(0.6)	1(0.2)	6(0.7)	4(0.8)	2(0.4)	1(1.3)	1(0.2)	2(0.7)	4(0.2)
Treatment	4(0.1)	0(1.7)	3(0.9)	2(0.3)	1(0.2)	1(1.0)	1(2.7)	1(0.4)	2(0.1)
Control†	53(140.7)	9(620.0)	45(152.4)	37(857.1)	12(623.7)	5(2.0.9)	13(144.5)	10(42.0)	30(128.7)
Control among treated‡	41(84.3)	6(100.0)	35(92.8)	23(84.9)	15(96.3)	3(73.6)	7(100.0)	11(100.0)	23(89.3)

CVD, cardiovascular disease, LDL, low density lipoprotein cholesterol, DM, diabetes mellitus.

* All values are presented as frequency (weighted %).

† Control was defined as LDL level <70mg/dl at very high risk group, LDL level <100mg/dl at high risk group, LDL level <130mg/dl at intermediate group, LDL level<160mg/dl at low risk group.

‡ The denominator of the percentage presented is the number of patients being treated for each group.

Table 3. Undertreatment of dyslipidemia currently not on treatment: aged from 40 to 75 years

	Total	By gender		By age at examination (years)			By year since cancer diagnosis		
		Male	Female	40-59	60-69	70-75	1-3 years	3-5 years	≥5 years
Total	1460(100.0)	519(100.0)	941(100.0)	637(100.0)	525(100.0)	298(100.0)	342(100.0)	272(100.0)	834(100.0)
On treatment	174(11.9)	44(8.5)	130(13.8)	54(9.0)	85(17.1)	35(12.4)	31(9.0)	41(15.0)	101(12.1)
Not on treatment	1286(88.1)	475(91.5)	811(86.2)	583(91.0)	440(82.9)	263(87.6)	311(91.0)	231(84.4)	733(87.9)
Total N. not on treatment	1286(100.0)	475(100.0)	811(100.0)	583(100.0)	440(100.0)	263(100.0)	311(100.0)	231(100.0)	733(100.0)
Treatment indicated									
Established ASCVD	85(5.5)	42(7.4)	43(4.3)	11(1.7)	38(8.6)	36(13.7)	12(2.5)	7(3.3)	65(7.5)
LDL≥190mg/dl	18(1.1)	5(0.7)	13(1.4)	7(0.9)	8(1.5)	3(1.1)	5(1.6)	2(0.6)	11(1.1)
DM+LDL 70-189mg/dl	178(11.6)	89(15.3)	89(9.3)	41(6.4)	86(17.7)	51(19.2)	38(9.8)	28(10.6)	109(12.7)
ASCVD risk score ≥7.5%†	610(38.8)	322(55.4)	288(28.5)	295(5.3)	318(72.0)	263(100.0)	134(31.1)	102(38.0)	370(42.6)
7.5-10%	124(9.3)	45(9.8)	79(9.0)	21(4.3)	99(23.9)	4(0.9)	30(7.2)	19(9.9)	75(10.2)
10-20%	354(21.4)	195(32.9)	159(14.3)	8(1.0)	192(42.1)	154(57.8)	78(17.5)	63(20.6)	211(23.6)
20-30%	109(6.5)	67(10.5)	42(4.1)	0(0.0)	26(5.8)	83(31.7)	21(4.7)	19(7.4)	68(7.1)
30-50%	23(1.5)	15(2.2)	8(1.1)	0(0.0)	1(1.9)	22(9.6)	5(1.7)	1(0.2)	16(1.9)
≥50%	0(0.0)	0(0.0)	0(0.0)	0(0.0)	0(0.0)	0(0.0)	0(0.0)	0(0.0)	0(0.0)
Treatment needed (sum of above indications)	671(43.9)	338(59.6)	333(34.2)	77(13.0)	333(75.0)	263(100.0)	149(35.6)	110(41.6)	408(48.6)

ASCVD, atherosclerotic cardiovascular disease; LDL, low density lipoprotein cholesterol; DM, diabetes mellitus.

* All values are presented as frequency (weighted %).

† Risk scores are calculated by national guidelines Korean CHD risk score (KRS).

Conclusions

Nearly 50% of CS are still untreated although they are eligible for statin therapy. This means that the management of CVD is poor, and that primary care for CS is not being carried out well. This emphasizes the need for a more shared approach to primary care, to prevent CVD among CS.

eP639

SURVIVORSHIP CARE NEEDS OF BREAST AND GYNECOLOGIC CANCER PATIENTS AND SURVIVORS (N=220)

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Introduction

Cancer experiences differ for patients depending on multiple factors. The aim of this study was to evaluate self-reported survivorship care needs in

relation to disease type and demographic factors in a diverse group of patients/survivors diagnosed with breast and gynecologic cancers.

Methods

From July 2018-January 2019, all cancer patients/survivors seen in the Stanford Women's Cancer Center were approached to participate in the survey (14% declined). 171 (78%) Breast and 48 (22%) Gynecologic (Mean=54 years, SD=12) cancer patients completed a supportive care needs (SCNS-SF34) survey, which contained physical, social, informational, sexual and psychological scales.

Results

There were no significant differences in needs by disease type. Patients who were new survivors (≤ 12 months since diagnosis/recurrence) reported higher needs for physical (t=2.78,p=.006) and psychological domains (t=1.97, p=.05). Younger patients (≤ 55 years) reported higher changes in sexuality (t=3.91, p<.001) and higher psychological needs (t= 2.47, p= .014). Patients with higher income had fewer physical (t=2.17, p=.032) and psychological needs (t=2.68, p=.008), and were more likely to report that they did not face any new identifiable needs since their cancer diagnosis. Lastly, patients who self-identified as Asian/Asian American (n=57) reported significantly fewer physical problems compared to Caucasian patients (t=-2.09, p=.038).

Conclusions

We identified differences in supportive care needs among survivors of breast and gynecologic cancers based on age, SES, and race in the physical, sexual, and psychological domains. Results suggest that patients who are younger, newly diagnosed, or lower income may need additional support. Studies are underway to characterize contributing factors.

eP640

INPATIENT CANCER REHABILITATION IN A CAR T-CELL THERAPY LYMPHOMA PATIENT WITH CRS AND CRES TOXICITY

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Introduction

Cellular immunity using T-cells and their chimeric antigen receptors to redirect their cytotoxic specificity against tumor cells (CAR T-cell therapy) is a new and emerging treatment for a number of cancers. Cytokine Release Syndrome (CRS) and CAR T-cell related Encephalopathy Syndrome (CRES) are common toxicities and can cause significant medical and functional morbidity.

Although not previously documented in CAR T-cell treated cancer patients, acute inpatient cancer rehabilitation has been shown to be effective in patients with neutropenic and thrombocytopenic precautions, requiring frequent transfusion support, and with significant neurologic deficits.

Methods

Case report from retrospective chart review

Results

From initial hospitalization status post CAR T infusion until discharge from the inpatient rehabilitation unit the patient's CRS score varied from 0 to 2 (ICU), CRES score varied from 0 to 4 (ICU) and FIM mobility score varied from 1 to 5 (inpatient rehab unit.) The patient required platelet transfusions 4 of 7 days and PRBC transfusion 3 of 7 days on the rehabilitation unit. He was safely discharged home with family assistance.

Conclusions

A CAR T-cell therapy patient after CRS and CRES toxicities was managed with comprehensive rehabilitation, medical and symptom management and discharged to the home setting.

Reference:

Neelapu SS, Tummala S, Kebriaei P, Wierda W, Gutierrez C, Locke FL, Komanduri KV, Lin Y, Jain N, Daver N, Westin J, Gulbis AM, Loghin ME, de Groot JF, Adkins S, Davis SE, Rezvani K, Hwu P, Shpall EJ:Chimeric antigen receptor T-cell therapy - assessment and management of toxicities. Nat Rev Clin Oncol. 2018 Jan; 15(1):47-62.

eP641

KNOWLEDGE, ATTITUDE, PRACTICE AND PREVALENCE OF CERVICAL PRECANCER BY VIA/VILI IN BOUSSE RURAL HEALTH DISTRICT, BURKINA FASO

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Introduction

Cervical cancer (CC) is a major cause of cancer in subsharan African and Burkina Faso. Its prevention could be done through vaccination against HPV and and treatment of precancerous lesions detected through visual inspections of the cervix, an alternative screening approach suitable for low income countries. We estimated the prevalence of these lesions in a less deserved area of the country.

Methods

We conducted a cross-sectional survey targeting women aged 23-50 years within Boussé health district area between June and July 2014. Trained data capturers collected information regarding their knowledge, attitude and practice toward cervical cancer in 5 settings of Boussé health district (Boussé, Laye, Niou, Toeghin and Sourgoubila). Midwives backed by a gynecologist were in charge of screening for cervical cancer and to treat positive cases by Loup electrosurgical procedures (LEEP).

Results

Overall 418 women have been screened. Half of them has never heard about cervical cancer. About one third of them knew at least of risk factor of CC and at least one preventive measure. Nine percent of them has already been screened for CC. Overall 5% of the women were VIA/VILI positive and all of them accepted to be treated by LEEP.

Conclusions

Women' knowledge about CC in Boussé health district was poor, with a limited practice of screening. It s necessary for decision makers to strengthen sensitization on CC and to provide screening at an affordable cost in rural areas.

eP642

OVERCOMING LIMITATIONS OF PHYSICAL, SOCIAL, AND SEXUAL FUNCTION ON EXERCISE AMONG MEN WITH PROSTATE CANCER: A META-ANALYSIS

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Introduction

After cancer therapy, men with prostate cancer often face physical and psychological morbidities, and exercise could be beneficial for them. However, effect of exercise on psychosocial and sexual well-being were not consistent. The purpose of this study was to evaluate the effect of exercise interventions on physical, social, mental, and sexual function, quality of life (QOL), and depression.

Methods

Relevant papers were searched in Embase, Medline, PubMed, PsycINFO, the Chinese database Airti Library, and hand searching from 1987 to 2018. The pooled means were used Comprehensive Meta-Analysis (CMA) to calculate.

Results
Pooling data from 10 randomized controlled trials and the results showed that exercise had positive effects on physical function (g = .91, 95% CI= .14 to 1.68), sexual activity (g = .45, 95% CI= .16 to .73), sexual function (g = .56, 95% CI= .28 to .84), and social function (g = .24, 95% CI= .01 to .48) in men with prostate cancer in this meta-analysis. But, no significant effect of exercise on QOL (g = .52, 95% CI= − .12 to 1.16), mental function (g = .45, 95% CI= − .05 to .95) and depression (g = .20, 95% CI= − .04 to .44). No deaths attributable during intervention, but one adverse event was in exercise group was design as higher exercise intensity at 50 to 75% VO2max.
Conclusions
Exercise can significantly improve social, physical, and sexual function. In future, exercise can as a support care and cobmining with psychological intervention for prostate cancer patients to enhance physical and mental well-being.

eP643
HEAD AND NECK CANCER PATIENT PRIORITIES AND PREFERENCES FOR DISCUSSING AND RECEIVING INFORMATION ABOUT SEXUALITY FROM HEALTHCARE PROFESSIONALS

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Introduction
As survival rates for patients with head and neck cancer improve and patients continue to be diagnosed at a younger age, there is an increased need to holistically support the survivors of this disease. Both the disease and its treatment can cause significant disfigurement of the face and neck, as well as impairment of sight, speech, smell, taste, breathing, facial expressions, and neck movement. These abilities are often critical to an individual's sexual function and sexual well-being. As sexuality is an important aspect of quality of life, the purpose of this study is to examine patient priorities and preferences for discussing and receiving information about sexuality from healthcare professionals.
Methods
Participants were recruited via flyers, targeted emails, and online survivorship communities. After providing informed consent, participants completed study surveys electronically in REDCap. Descriptive statistics were used to summarize participant characteristics and survey responses.
Results
Participants (n=73) ranged from 23 to 76 years of age. The majority of participants (54.2%) indicated that it was "very important" for them to receive information about sexual issues from their healthcare provider while an additional 30.6% indicated it was "somewhat important." Participants preferred the timing of this information sharing to occur at the time of diagnosis, at some point during treatment, and immediately after completing treatment. Printed material, in person discussions, and digital media were the patient preferred methods of communication.
Conclusions
This study supports patient-centered timing and methods for approaching the subject of sexuality with patients with head and neck cancer.

eP644
ERECTILE DYSFUNCTION IN PATIENTS WITH METASTATIC RENAL CELL CARCINOMA

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Introduction
Metastatic renal cell carcinoma (mRCC) can cause sexual problems. Erectile dysfunction (ED) can also result from adverse effects of targeted therapy of mRCC, such as fatigue, pain, anorexia, asthenia or hypothyroidism. The objective of the study was to evaluate the rate of ED in patients with mRCC.
Methods
132 male patients with clear cell mRCC were enrolled. All patients were evaluated for erectile function with the 5-item version of the International Index of Erectile Function (IIEF-5) before and after the first cycle/month of the first-line targeted therapy with sunitinib, pazopanib, bevacizumab+ IFN, sorafenib, or temsirolimus.
Results
Median age was 59 years (range 43–67 years). 89 (67%) patients had at least one cardiovascular risk factor. At baseline, IIEF-5 mean score was 19 (SD, 2.6). Patients with 2 and more IMDC risk factors (39%) had a lower IIEF-5 mean score (14; SD, 3.3). 99 (75%) patients reported a negative change in their sexual life since the start of the targeted therapy. 35 (27%) patients had no sexual activity. After the first treatment cycle/month IIEF-5 mean score reduced to 8 (SD, 1.9), which was statistically significant ($P<0.001$). The IIEF-5 scores were not associated with a type of anticancer treatment ($P>0.05$).
Conclusions
Prospective evaluation in a large cohort of patients with mRCC revealed mild ED (19/25) in the treatment-naive male population and severe ED (8/25) after the first cycle/month of the first-line therapy. Significant decrease in erectile function should be considered as a potential adverse event in male patients undergoing treatment of mRCC with targeted agents.

eP645
SEXUAL SATISFACTION AND SEXUAL FUNCTION IN WOMEN WITH GYNECOLOGICAL CANCER IN TAIWAN

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Introduction
Sexual satisfaction is a vital component of well-being for cancer survivors. However, the cancer treatment affects both physical and psychosexual functioning which may lead to decreased sexual satisfaction, especially for gynecological cancer survivors. The study was to examine sexual satisfaction and sexual functioning among women with gynecological cancers by comparing these women with those without cancers.
Methods
A cross-sectional survey was conducted on 209 women, in which 106 were with gynecological cancer and 103 were age- and education-matched women with no history of cancer undergoing routine cervical cancer screening. Self-evaluations included the Female Sexual Function Index (FSFI) and Sexual Satisfaction Scale for Women (SSS-W). ANOVA was conducted for group comparison on sexual satisfaction and sexual functioning.

Results
The women with gynecological cancer reported significantly ($p < .001$) more sexual dysfunction, and lower sexual satisfaction. There are polarized score distributions in sexual satisfaction as a result of sexual functionality status among women with cancer which revealed the larger mean differences of sexual satisfaction between sexually functional and sexually dysfunctional women with gynecological cancer than those obtained from women without cancer.
Conclusions
This study provided evidence that gynecological cancer and its treatments can have significant consequences for women's sexual functional and sexual satisfaction in Taiwan. Besides, sexual functioning determines whether women are sexually satisfied, rather than suffering from cancer. These results highlight the need for interventions to teach patients effective sexual communication after sexual changes due to cancer treatment.

eP646
SEXUAL DYSFUNCTION AFTER RADIOTHERAPY FOR CERVICAL CANCER: A RETROSPECTIVE STUDY

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Introduction
Sexual dysfunction in gynaecologic cancer patients is a field of increasing interest. The demand for dialogue between health care professionals and patients on all aspects of adverse effects after treatment is increasing. Patients treated for cervical cancer by external beam & intracavitary RT (EBRT & ICRT) are likely to experience radiation-induced damage to the vaginal mucosa, causing stenosis and fibrosis that may lead to sexual dysfunction. This retrospective study aims to describe the self-reported sexual function in females treated for cervical cancer by RT.
Methods
A total of 50 patients of cervical cancer referred for RT were included. The patients were assessed for sexual function, using a validated self-assessment questionnaire- European Organization for Research and Treatment of Cancer Quality-of-Life Questionnaire (EORTC QLQ-CX24), at the termination of RT and 1, 3 & 6 months later. The results were compared with pre-diagnosis sexual function of the patients. Wilcoxan's signed rank test was applied and a p-value of <0.05 was considered significant.
Results
Persistent sexual dysfunction was reported throughout the 6 months after RT. Approximately 80% had low or no sexual interest, 30% had moderate to severe lack of lubrication, 50% had mild to severe dyspareunia, and 25% were dissatisfied with their sexual life. Despite sexual dysfunction, 60% of those sexually active before having cancer remained sexually active after treatment, although with a considerably decreased frequency.
Conclusions
Patients who are clinically disease free after RT for cervical cancer are at a high risk of experiencing persistent sexual problems.

eP647
IDENTIFYIG THE WAYS TO REACH YOUNG ADULT MARRIED INDIAN WOMEN FOR DELIVERING REPRODUCTIVE AND SEXUAL HEALTH SERVICES

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Introduction
Being a signatory country of Sustainable Development Goals, Indian is needed to achieve Universal access to reproductive and sexual health services by 2030. However, current statistics showed that one-fourth of young adult (aged15-24 years) Indian women's demand for family planning remained unsatisfied. This paper explored possible gateways to reach the young adult women for delivery family planning services to improve their reproductive and sexual health.
Methods
Using data from most recent round of the National Family Health Survey (NFHS) conducted in 2015-16, this paper identifies key gateways across contextual factors, maternal and child healthcare service utilization, program outreach, and quality of family planning care, for increasing modern contraceptive prevalence rate (mCPR) among young married women (15-24 years) in India. Bivariate association, binary logistic regression analyses, and marginal predicted effect analyses are used.
Results
Preliminary result shows that, mCPR is only 21% among young Indian women with a huge geographical variation – ranging from 5% in Bihar to 43% in West Bengal. Among the various ways, connecting women to the community health workers is most effective in accessing family planning services. For instance, women contacted with the health workers were 2 times more likely (odds ratio 2.33, $p<0.001$). to use modern contraceptives than those who are not contacted.
Conclusions
Improving health workers contact for family planning is most important programmatic opportunity for increasing modern contraceptive use among young Indian women. The other gateways are – offering family planning counselling when women visit health facilities for maternal and child healthcare services.

eP648
FACILITATING INTIMACY, CONNECTION AND HEALTHY SEXUALITY PATIENT EMPOWERMENT EDUCATION AMONG MEN AND PARTNERS AFFECTED BY PROSTATE CANCER

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Introduction
Prostate cancer (PCa) is one of the most commonly diagnosed cancers in Canada and worldwide and accounts for 15% of all cancers diagnosed in men. Men with cancer of the prostate often suffer from treatment related side effects including and not limited to sexual and urinary dysfunction, social isolation with concomitant worsening quality of life during survivorship. Little educational and empowerment help is provided to support this population with sexual, intimacy and connection issues during survivorship.
Methods
This presentation offers evidence based data outlining the need for intimacy and connection education among PCa survivors. Five evidenced-based teaching sections that constitute the elements of an Intimacy, Connection and Sexuality Patient Empowerment Program that has been successfully presented and received during four PCa support groups workshops in Canada (PEI, Ontario, and BC) will be presented and discussed.
Results
Each of the five components of the program will be described, along with their evaluation by PCa survivors attendees (n=60). These components are: (1) Healthy Aging / Sexuality (2) Types of Intimacy;(3) Emotional connection (4) De-cluttering relationship exercises leading to an intimate connection; and (5) Practical solutions for erectile dysfunction.
Conclusions
The results presented show that patient education and empowerment programs that include aspects related to intimacy, connection and sexuality for PCa survivors are in high demand and very well received in this population. Investment in the development of these types of programs for this population are warranted.

eP649

SEXUAL DISTRESS, ANXIETY AND DEPRESSION AMONG CERVICAL CANCER SURVIVORS IN SOUTH INDIA

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Introduction
Cervical cancer is the second most common cancer diagnosed among women in India. As the treatment of cervical cancer leads to sexual dysfunction which affect the physical and psychological well being of the individual. The objective of the study was to assess the level of sexual distress, anxiety and depression among cervical cancer survivors.
Methods
A mixed method design was used. N=103, cervical cancer survivors with mean age of 45 years were included in the study. Sexual distress, anxiety and depression were assessed using Female Sexual Distress Scale and Hospital Anxiety and Depression Scale. Descriptive statistics, Chi-square and Pearson's correlation was used to analyze the data
Results
Majority of the cervical cancer survivors (44.5%) presented sexual distress. The sexual distress was found to be significantly associated with the geographical location of the survivors ($\chi2$= 7.129; *p=0.000*), survivors from rural areas (84.4%) reporting sexual distress than survivors from urban setup. The anxiety levels of survivors was significantly associated with the treatment received- External Beam Radiation Therapy ($\chi2$= 8.126; *p=0.010*); Intra-Cavity Application ($\chi2$= 17.597; *p=0.000*). The anxiety and depression levels of the survivors were significantly correlated with the sexual distress reported [r= 0.378; *p=0.000); (r= 0.530; p=0.000*)].
Conclusions
Sexual distress is a predominant factor affecting the survivor ship of cervical cancer survivors. In addition to the various demographic factors that influence the sexual well-being among the survivors, a significant number of modifiable factors are also present. This study highlights the need for rehabilitation pertaining to sexual concerns and well-being of the survivors.

eP650

PREVALENCE OF FEMALE SEXUAL DYSFUNCTION IN WOMEN ATTENDING CANCER CLINIC: INDIAN PERSPECTIVE

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Introduction
Sexual dysfunction is a prevalent problem in cancer patients. Indian women seek less assistance for sexual dysfuntion, despite undergoing physical and marital problems. We collected a data of prevalence of these problems in woman attending cancer clinic of a tertiary care hospital.
Methods
We did a questionnaire based study comprising of 120 patients from January, 2017 to June, 2017. The questionnaire was designed on the basis of prior validated tool with modifications by the authors in context to our patient scenario.
Results
86% patients had some sort of sexual problem. Only 14% patients said that they had no sexual problem and were satisfied with their sexual life. 65% of women couldn't talk regarding their sexual dysfunction to their partners. 65% women reported of desire dysfunction, 77% complained of arousal disorder, 51% had lubrication disorder, 56% had dyspareunia, and 74% had sex related anxiety. When asked about the sexual frequency, 4% women had sex more than five times in last one month. It is important to note that 78% women knew the importance of sex in life. The reasons for decreased sexual activity were ill health in 65% women, 25% had lack of libido, lack of privacy and other social reasons in 5%, and 5% had fear of disease deterioration due to sex.
Conclusions
Sexual dysfunction is common in women with cancer. They are however, reluctant and shy to discuss this problem. The focus should not only be on treating 'cancer' but also improving their quality of life including sexual health.

eP651

A PRACTICE MODEL FOR PROVISION OF SEXUALITY NURSING CARE TO GYNAECOLOGICAL CANCER PATIENTS

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Introduction
Despite profound impacts on sexual well-being and impaired sexual functioning prevalent among gynaecological cancer patients, sexuality care has been neglected in most countries. This study aims to develop a practice model and protocol to guide and promote sexuality nursing care in clinical practice.
Methods
The study adopted a concept mapping approach which consisted of three phases. In Phase I, 30 gynaecological cancer patients and their spouses/partners, 20 registered nurses and physicians working in the gynaecological oncology unit were interviewed to elicit their perceptions of good nursing practice in sexuality care. A list of statements was generated and then returned to them to rate the level of similarities and perceived level of importance in good sexuality care. Based on these ratings, a concept map was constructed by using multi-dimensional scaling and cluster analysis.
Results
A total of 50 statements were generated and organized into seven themes: (1) Information giving; (2) Discussion about sexual impact of treatment; (3) Attitudes towards sexuality care provision; (4) Mode of sexuality care delivery; (5) Personnel involved in sexuality care delivery; (6) Timing of sexuality care delivery and (7) Organisational support. A concept map was constructed and used to guide the development of a practice model and protocol to promote the provision of sexuality care for gynaecological cancer patients.
Conclusions
This study produced a practice model and protocol guiding nurses to deliver timely and effective sexuality nursing care for gynaecological cancer patients.

eP652

MEASURING MALE SEXUAL HEALTH: A SYSTEMATIC REVIEW OF THE MEASUREMENT PROPERTIES OF THE INTERNATIONAL INDEX OF ERECTILE FUNCTION (IIEF)

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Introduction
The International Index of Erectile Function (IIEF) is one of the most used patient-reported outcome measures for evaluating erectile dysfunction and other sexual problems in males. We performed a systematic review of the measurement properties of the IIEF-15 and the IIEF-5.
Methods
A systematic search of scientific literature up to April 2018 was performed. Data were extracted, and analyzed according to the COSMIN guidelines for structural validity, internal consistency, reliability, measurement error, construct validity, criterion validity and responsiveness. Evidence of measurement properties was categorized into sufficient, insufficient, inconsistent, or indeterminate, and quality of evidence as very high, high, moderate, or low.
Results
Forty studies were included. The evidence for criterion validity, and responsiveness of the IIEF-15 was sufficient (high quality), but inconsistent (moderate quality) for structural validity, internal consistency, construct validity, and test-retest reliability. Evidence for structural validity, test-retest reliability, construct validity, and criterion validity of the IIEF-5 was sufficient (moderate quality), but indeterminate for internal consistency, measurement error and responsiveness.
Conclusions
Besides criterion validity and responsiveness, more evidence is needed on the other measurement properties of the IIEF-15. While there is sufficient evidence on most measurement properties of the IIEF-5, unidimensionality (which is required for determining whether the sum score represents one construct) has not yet been investigated.

eP653
MEASURING FEMALE SEXUAL HEALTH: A SYSTEMATIC REVIEW OF THE MEASUREMENT PROPERTIES OF THE FEMALE SEXUAL FUNCTION INDEX (FSFI)

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Introduction
The Female Sexual Function Index (FSFI) is one of the most used patient reported outcome measures for evaluating female sexual (dys)function (FSD). We performed a systematic of the measurement properties of the FSFI-19 and FSFI-6.
Methods
A systematic search was performed of Embase, Medline, and Web of Science for studies that investigated measurement properties of the FSFI-19 or FSFI-6 up to April 2018. Data were extracted, and analyzed according to the COSMIN guidelines for structural validity, internal consistency, reliability, measurement error, construct validity, criterion validity and responsiveness. Evidence was categorized into sufficient, insufficient, inconsistent, or indeterminate, and quality of evidence as very high, high, moderate, low.
Results
Eighty-three studies were included. The evidence was sufficient for criterion validity (high quality), internal consistency (moderate quality), reliability (low quality); but inconsistent for construct validity (moderate quality), and structural validity (low quality); and indeterminate for measurement error, responsiveness, and cross-cultural validity, for the FSFI-19. The evidence was sufficient for criterion validity (moderate quality); but inconsistent for reliability (low quality), and construct validity (very low quality); and indeterminate for structural validity, measurement error, responsiveness, and cross-cultural validity, for the FSFI-6.
Conclusions
Besides criterion validity, measurement properties of both the FSFI-19 and FSFI-6 are not well substantiated and need further research.

eP654
EXAMINING RELATIONSHIPS AMONG BODY IMAGE, SEXUALITY, AND SEXUAL FUNCTIONING IN WOMEN WITH CERVICAL AND ENDOMETRIAL CANCER

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Introduction
More than 65,000 women are diagnosed with endometrial or cervical cancer annually in the US. Significant disruption in body image, sexuality, and sexual functioning occurs but these concepts have rarely been studied simultaneously. The *primary aim* of this study was to examine relationships among body image, sexuality, and sexual functioning, and the *secondary aim* was to understand the factors that influenced women's views of these concepts, and their perceptions of significant impact.
Methods
A cross-sectional descriptive design was used to examine these concepts in survivors of cervical or endometrial cancer. Inclusion criteria: women of reproductive age, diagnosed with stage I-III cervical or endometrial cancer, within 3-36 months after completing treatment, and without diagnosis of major mental illness. Exclusion criteria: women under eighteen, post-menopausal at diagnosis, metastatic disease, multiple cancer diagnoses, history of prior cancer, cancer recurrence, ostomies prior to cancer diagnosis, and transgender individuals. Participants completed the Body Image Scale, Female Sexuality Questionnaire, Female Sexual Function Index, and several open-ended questions.
Results
Twenty women were enrolled in the study. The sample was primarily white and non-Hispanic women (n=9) with cervical cancer (n=13). Data analysis is ongoing, but preliminary examination of qualitative data indicates significant disruptions in body image and sexual functioning, accompanied by little communication with providers about these issues.
Conclusions
Early data analysis affirms the significance of these issues. Final analyses are anticipated to further elucidate relationships among body image, sexuality, and sexual functioning and their impact, and to provide direction for future research.

eP655
TO EVALUATE CYTOTOXICITY AND IN VIVO EFFICACY OF ULLB-0005 IN OVARIAN CANCER

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Introduction
Most ovarian cancers are either ovarian epithelial cancers or malignant germ cell tumors.
The objective as to evaluate cytotoxicity and in vivo efficacy of ULLB-0005 in ovarian cancer
Methods
ULLB-0005 is a protein derived from natural fungus with high binding specificity for carbohydrate antigen and strong apoptotic signal leading to death of cancer cells. For in vitro study, PA-1 cells were treated with ULLB-0005 at concentration ranging from 2.5-80 μg/mL. Following incubation, the cell cytotoxicity was estimated by calcein AM assay.
For in vivo experiments, athymic nude mice were subcutaneously implanted with tumor fragment which was obtained from PA-1 cells. Animals were injected with test item and reference standard. Tumor volume was recorded twice weekly and body weight was recorded daily throughout the experimental period. Finally, tumor growth inhibition was calculated.
Results
Based on in vitro study, cytotoxicity was found to be 72.0% for ULLB-0005 and 82.3% for doxorubicin. ULLB-0005 showed tumor growth inhibition of 62.15%, whereas doxorubicin standard showed 84.48%.
In order to find if ULLB-0005 is cytotoxic to PA-1 cells, calcein AM assay was performed. This was followed by experiments to find safe dose in-vitro and efficacious dose in-vivo. The results demonstrated that ULLB-0005 is cytotoxic for PA-1 cells. Based on xenograft study, reduction in tumor volume and inhibition of tumor growth was observed
Conclusions
Based on in vitro and in vivo data, ULLB-0005 which is a novel protein is a potential anticancer drug for treatment of ovarian cancer.

eP656
PRAGMATIC TRIAL OF AN ONLINE SELF-HELP INTERVENTION FOR SEXUAL PROBLEMS AFTER CANCER

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Introduction
Para ID="Par10235">Cancer-related sexual dysfunction affects over 60% of survivors. Internet interventions have improved sexual function and satisfaction. This pragmatic online trial aimed to evaluate online self-help interventions without clinician contact.
Methods
Participants were cancer survivors or partners, 18 or older, recruited and consented online. The PROMIS Brief Sexual Profile (version 2) was the primary outcome. Three months of website access followed baseline completion. Questionnaires at baseline and 3 months also assessed demographic and medical variables, mental and physical health, anxiety, depression, and the use of sexual aids.
Results
Baseline questionnaires were completed by 285 participants; 76% female, mean age 54, 78% married, 74% with a college degree or more, and 90% Caucasian. Cancer diagnoses included 53% breast, 12% gynecological, and 13% prostate. Attrition was high with 39% completing 3-month questionnaires. Participants in relationships were more likely to complete the 3-month assessment (42% vs. 21% of singles, P=0.02). Participants who spent more time on the website were more likely to complete the 3-month assessment (mean 108.5 versus 45.0 minutes, P=0.00001). Analyses were only conducted for female patients due to power limitations. A baseline observation carried forward analysis suggested significant improvement on Brief Sexual Profile scores across time among female patients (P=0.0003, Effect size 0.312). Significant gains in being sexually active (P=0.0001, Effect Size 0.522), and increased use of sexual aids (P=0.009, Effect size 0.343) also occurred.
Conclusions
Despite high attrition, women survivors who persisted with the intervention had significant benefit. Revisions are being implemented to the websites to improve patient engagement.

eP657
SKIN CANCER AMONG TRANSPLANT PATIENTS: EARLY DIAGNOSIS AND CARE NEED

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Introduction
Cutaneous lesions – benign and malignant – occur frequently in organ transplant recipients receiving long-term immunosuppressive therapy. These patients are at greater risk of skin cancers as well
Methods
Twenty five patients (12 men and 13 women) were consecutively examined for benign and malignant skin complications since transplantation
Results
About 95% cosmetic side effects seen in early stage. Infectious diseases like folliculitis seen in 80%, fungal infection in 12% and viral warts in 40% seen mostly. We found six cases of malignancy in these patients in that four cases were skin cancers, including one case of SCC, one BCC, and two cases melanoma Dermatologic problems occur most frequently in transplant patients especially skin cancers which have higher frequency in these patients than general population. Sun exposure has an important role in developing epithelial skin cancers following transplantation. The age of developing skin cancer in these patients was early than normal population.
Conclusions
Skin examinations and monitoring transplant recipient to obtain an early diagnosis and treatment of cutaneous manifestation. Patient should be aware about the skin changes and examination regularly. Avoiding direct sun light and application of broad spectrum sunscreen. Supportive care and education is important in the era of transplant surgery.

eP658
A MULTI-CENTER, RANDOMIZED, DOUBLE-BLIND, VEHICLE-CONTROLLED PHASE II STUDY TO EVALUATE THE EFFICACY, TOLERABILITY, AND SAFETY OF TOPICAL POVIDONE-IODINE VBP-926 IN CANCER THERAPY-ASSOCIATED PARONYCHIA

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Introduction
Cancer therapy-associated paronychia is a frequent adverse event related to cytotoxic and targeted therapies. There are no evidence-based management strategies nor approved agents currently available.

Methods
This was an 8 week prospective, multi-center, randomized, double-blind, vehicle-controlled phase 2 study designed to evaluate the efficacy and safety of twice daily 1% or 2% povidone-iodine topical solution versus vehicle-control in adult cancer patients with cancer therapy-associated paronychia. Patients were randomized to one of three treatment arms: twice daily application of 1% PVP-I topical solution, 2% PVP-I topical solution, or vehicle-control solution. The primary endpoint was defined as a two-grade reduction or reduction to zero on a six-point Paronychia Severity Grading scale. Secondary endpoints included the effect on quality of life questionnaire and safety.
Results
In the 2% povidone-iodine topical solution group, 88/167 (52.7%) affected nails achieved the primary endpoint ($P = 0.0063$), whereas in 1% povidone-iodine topical solution and vehicle-control group, 83/205 (40.5%, $P = 0.6059$) and 64/169 (37.9%) of nails, respectively achieved the primary endpoint (Figures 1 and 2). In the 2% povidone-iodine solution group, 19/29 (65.5%) of subjects reported moderately or very painful nails at baseline, 15/29 (51.7%) at visit 2 and 5/29 (17.2%) at visit 3 via the quality of life questionnaires (Figures 3). Related adverse events were limited to mild irritation/dryness in 6/85 (7.6%) of all subjects.
Conclusions
Topical 2% povidone-iodine resulted in statistically significant improvement in cancer therapy-associated nails with paronychia. Treatment with twice-daily 2% povidone-iodine topical solution is a safe and effective option for cancer therapy-associated paronychia.

eP659
PRELIMINARY RESULTS OF A LONG-TERM CLINICAL FOLLOW-UP OF BREAST CANCER PATIENTS TREATED WITH PHOTOBIOMODULATION THERAPY TO PREVENT ACUTE RADIODERMATITIS (TRANSDERMIS TRIAL)

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Introduction
The clinical evidence regarding the efficacy of photobiomodulation therapy (PBMT) in the prevention and management of acute radiodermatitis (ARD) is growing steadily in the field of oncology. However, many clinicians are concerned whether the application of PBMT in cancer patients is safe. This study aimed to assess PBMT's safety by evaluating the disease-free survival (DFS) and overall survival (OS) of breast cancer (BC) patients treated with PBMT for ARD.
Methods
A retrospective data analysis of 120 BC patients treated with prophylactic PBMT (n=60; 2x/week, 808-905nm, 4J/cm^2, 0.168W/cm^2) or placebo (n=60) during their radiotherapy (RT) course (25x2Gy, 8x2Gy) between April 2015 and June 2017, was performed (TRANSDERMIS trial). During follow-up, patients underwent a clinical evaluation every 6 months, and a blood analysis and mammography yearly in the first 5 years after the end of RT. DFS and OS were estimated.
Results
Data from 93 patients was available (PBMT n=46; placebo: n=47). After a median follow-up of 26 months (range: 1-41), a preliminary analysis of the data by the logrank test demonstrated that the DFS was not significantly different between the PBMT and placebo group (98% vs. 100%, resp., p=0.323) and the OS was equal in both groups (100%).
Conclusions
This is the first retrospective study that investigated the safety of PBMT in BC patients undergoing RT. These preliminary results indicate that the use of PBMT is statistically unrelated to locoregional recurrence, development of secondary tumors, or OS. Although, a follow-up of 5 years is needed to validate these results in a broader patient population.

eP660
USE OF XONRID® TO MANAGE RADIATION DERMATITIS IN BREAST AND HEAD AND NECK CANCERS: PRELIMINARY RESULTS OF A MONOCENTER AND OPEN LABEL, RANDOMIZED TRIAL

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Introduction
There is no gold-standard approach in the management of radiation induced dermatitis (RID). The aim of this clinical investigation is to evaluate the efficacy of Xonrid®, Class IIa Medical Device, in the prevention and treatment of RID in breast (BC) and head and neck cancer (HNC) patients, when compared to the Standard of Care (SOC) as defined by MASCC guidelines.
Methods
From June 2017 to July 2018, 40 HNC and 40 BC patients, curatively treated with standard radiotherapy dose, were randomized to receive Xonrid®+SOC (Group A) or SOC (Group B) from the beginning up to two weeks after radiotherapy completion. Group B subjects experiencing Grade (G) 2 RID received an additional standard treatment (according to the Investigator's opinion). Both arms patients who reached G3 RID discontinued the study. Erythema was graded according CTCAE v.4. The primary objective was to evaluate the proportion of patients without G2 RID at week 5 of radiotherapy. Among secondary endpoints, the median time to G2 RID development was considered.
Results
In the BC group, the proportion of subjects without G2 RID at week 5 was higher in the Xonrid®+SOC group than in the SOC one (55.6% vs. 27.8%, respectively, p=0.09). For HNC patients, no difference was detected between the two groups (p= 0.81). Only for BC patients, Xonrid®+SOC treatment prolonged the medial time to G2 with respect to SOC ($p<0.05$).
Conclusions
These preliminary results show that Xonrid® could be effective in prevention and treatment of RID for BC patients, while further analyses are needed for HNC patients.

eP661
INFLUENCE OF INFUSION TIMES AND WETTING THE HAIR ON SCALP COOLING EFFICACY TO PREVENT ALOPECIA

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Introduction
Worldwide scalp cooling is being introduced to prevent chemotherapy-induced alopecia (CIA). Besides type and dose of chemotherapy it is unknown which factors determine scalp cooling efficacy. Scalp skin temperature seems to be an important determinant, being influenced by wetting the hair before the start of chemotherapy. It also appears that short infusion times cause more severe side effects in general, possibly causing deteriorated scalp cooling results too. We explored the influence of wetting the hair and infusion times on scalp cooling efficacy.

Methods
From 2006-2017 data have been collected in a prospective, longitudinal scalp cooling registry. Patients with all types of solid tumors, all stages of disease, all ages and both sexes could participate, if they received chemotherapy that induced severe hair loss. In this study we focus on irinotecan 350mg/m^2 and the combination of doxorubicine (60mg/m^2) and cyclophosphamide (600mg/m^2) (AC). The hospitals practiced scalp cooling according to their local protocols on cooling time, drug infusion time and wetting of the hair.
Results
Patients with irinotecan (n=196) had an infusion time of 30 (13%), 60 (36%) or 90 (47%) minutes and 28% wetted the hair. Within the AC group (n=1442) the infusion times were ≤20 (n=208), 21-30 (n=741) and >30 (n=454) minutes and 50% wetted the hair. Results of the uni- and multivariate regression analyses will be presented at the conference.
Conclusions
There is much variation in oncological protocols and supportive care guidelines in Dutch hospitals. Scalp cooling efficacy can be improved by detecting and sharing best practices.

eP662
POLYPRENOL ALONE COULD PREVENT PALMAR PLANTAR ERYTHRODYSESTHESIA IN BREAST CANCER TREATMENT WITH CAPECITABINE

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Introduction
Dysregulation of N-glycosylation in Dolichyl Phosphate Cycle (DPC) may increase susceptibility to skin adverse reactions. Polyprenol (Pp) is a substitute of DPC and the rate limiting factor in N-glycosylation and could prevent cell-mediated cytotoxicity against skin fibroblasts. In our earlier work (2015) we have demonstrated approach of Palmar Plantar Erythrodysesthesia (PPE) prevention with the use of the Atorvastatin and Pp. The purpose of this study was to evaluate the efficacy of Polyprenol (Pp) alone in PPE prevention.
Methods
The NCI-CTCAE version 3.0 was used to measure the severity of skin toxicity and to evaluate the effect of PPE prevention with and Pp (40 mg/day, per os) in a randomized, double-blind, placebo-controlled study in 104 breast cancer patients during capecitabine 500 mg monotherapy. Leukotriene E4 and dolichol (Dol) were assayed in urinal excretion, IgE levels in serum, dolicholphosphate transferase (GPT) in fibroblasts.
Results
PPE was observed in 37% of patients in control group and in 6 % of patients with PPE prevention during capecitabine therapy. Groups who started prevention course one or two weeks before capecitabine, developed symptoms of PPE in 8% and 1% of patients. Patients with PPE were found to have a statistically significant increase in leukotriene E4 (4-fold) and Dol (5,9-fold) excretion, IgE level and GPT activity in fibroblasts. Significant difference of PPE symptoms severity between Polyprenol (40mg) and placebo groups ($P < 0.01$) was recognized.
Conclusions
The present study suggests metabolic substitute therapy with Polyprenol as a prevention of PPE and potential treatment for many other chemotherapy induced skin toxicities.

eP663
REVIEW OF GUIDELINES ON MANAGEMENT OF RADIATION-INDUCED SKIN TOXICITIES

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Introduction
Despite clear benefits of radiotherapy in breast cancer management, it has many acute and late side effects, one of the most common being radiation dermatitis. There is no clear or consistent evidence suggesting superiority of any product for its prevention or treatment. Therefore, we aim to systematically review the literature for guidelines on radiation dermatitis management in and present a summary of the current recommendations.
Methods
A literature search was conducted on Medline and Embase databases using keywords such as "radiotherapy", "breast cancer", and "guideline". The search generated a total of 648 results that were screened by two authors (SA, BW) by title, abstract, then full text using defined criteria.
Results
Four studies were included. Multiple guidelines suggested that patients should wash the skin gently with or without mild soap or shampoo. There are inconsistencies across guidelines regarding prophylaxis of skin reactions using topical agents such as steroids or silver sulfadiazine cream. Multiple guidelines agreed that there is insufficient evidence on care for acute skin reactions, including use of dressings, topical agents, and systemic agents. Regarding reducing recovery time, there is also insufficient evidence on use of dressings, sucralfate or hydrocortisone cream, honey or trolamine.
Conclusions
There is some accordance among guidelines regarding management of radiation-induced skin reactions. Studies agreed that the majority of prophylactic or treatment methods had inconclusive evidence. More studies are needed to enable a consistent approach to skin assessment and care, which will translate to improved outcomes in radiation dermatitis.

eP664
THE MICROBIAL FLORA OF CLINICALLY INFECTED CUTANEOUS METASTASES

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Introduction
Cutaneous metastases represent skin involvement from internal malignancies or in-transit metastases from high-risk skin cancers. Knowledge of the microbial flora of skin lesions in patients with cutaneous metastases is critical towards mitigating associated symptoms of discharge, malodor, and pain, all of which may negatively impact quality of life and cutaneous health. We characterized the microbial flora and antimicrobial management of cutaneous metastases.
Methods
We conducted a retrospective chart review of patients referred to the Dermatology Service at Memorial Sloan Kettering Cancer Center between August 2006 and June 2015.
Results
We identified 64 patients with cutaneous metastases. Culture swabs yielded 17 distinct bacterial and fungal species. We detected pathogenic and/or opportunistic bacteria in 50% of skin lesions. The most commonly isolated organisms were *Staphylococcus aureus* and *Pseudomonas aeruginosa.* Patients treated with oral antibiotics, alone or in combination with topical agents, had a statistically significant better improvement in infectious symptoms than those treated without oral antibiotics.
Conclusions
The normal skin microbial flora is disrupted in patients with infected skin metastases. Oral antibiotics may provide benefit when used as first-line therapy of infected skin lesions in patients with symptomatic cutaneous metastases.

eP665

CLINICAL ASSESSMENT OF THE EFFECTIVENESS OF TREATMENT FOR HAND-FOOT SKIN REACTION, CAUSED BY THE TARGETED ANTITUMOR THERAPY WITH MULTIKINASE INHIBITORS OF ANGIOGENESIS.

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Introduction
Effective treatment of the hand-foot skin reaction (HFSR) is an essential component of the comprehensive treatment of patients receiving antitumor therapy with multikinase angiogenesis inhibitors.
Methods
29 patients were under study, they received antitumor treatment with multikinase angiogenesis inhibitors (sorafenib, lenvatinib) and displayed clinical signs of II-III degree HFSR.
Results
The 15 patients of the experimental group (EG) received a combination of alpha-lipoic acid, 600 mg per day, and an ointment containing 0.005% calcipotriol and 0.05% betamethasone dipropionate twice a day. The 14 patients of the control group (CG) received treatment with a combination of dermatic medications – a cream containing 10% urea and an ointment containing 0.05% betamethasone dipropionate. After a week, the regression of skin symptoms was more prominent within EG including erythema, paresthesia, pain, and burning sensation; the Dermatology Life Quality Index (DLQI) has shown greater improvement compared to CG with the statistical significance of $p<0.05$. After 2 weeks the DLQI was 17,4 within EG and 22,8 within CG ($p<0.0001$). After 3 weeks EG has demonstrated greater improvement in erythema, skin desquamation, paresthesia ($p<0.0008$), pain ($p<0.0001$), and DLQI ($p<0.0001$). At the end point of the study (after 4 weeks) the improvements in symptoms and DLQI were greater in EG compared to CG with the statistical significance of $p<0.0001$, correlation presented in table 1.

Table 1. Correlation between Dermatology Life Quality Index and clinical signs of HFSR

	erythema	pain	burning sensation	paresthesia	skin desquamation	fissures	blisters
Dermatology Life Quality Index (DLQI, 0-30) (Spearman rank correlation)	0,8741	0,8576	0,8392	0,8258	0,7935	0,5969	0,4323
p	< 0,0001	< 0,0001	< 0,0001	< 0,0001	< 0,0001	< 0,0001	< 0,0001

Conclusions
Patients receiving targeted therapy with multikinase inhibitors are recommended to receive treatment for HSFR with a combination of alpha-lipoic acid per os and topical therapy with an ointment containing calcipotriol and betamethasone dipropionate.

eP666

CLINICAL ASSESSMENT OF THE EFFECTIVENESS OF TREATMENT FOR ACNEIFORM RASH – SKIN TOXICITY OF EGFR INHIBITORS

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Introduction
Inhibitors of the epidermal growth factor receptor (EGFR) cause severe signs of acneinform rash, which may serve as a reason for changing the methods of cancer therapy, making the effective correction of this side effect especially important.

Methods
35 patients with I-II grades of acneiform rash were split into 3 groups. All patients received systemic antibiotic therapy, 100 mg of doxycycline twice a day for 10 days, and different topical medications: tacrolimus, metronidazole, and betamethasone valerate combined with fusidic acid. Assessment was performed using Acne Dermatology Index (ADI) and Dermatology Life Quality Index (DLQI).
Results
After the first week of systemic doxycycline therapy all groups have demonstrated significant regression in rash. Afterwards the first group, receiving treatment with tacrolimus cream, has demonstrated the weakest treatment response (patients were transferred to the 3rd group's treatment schedule after 1 month of therapy). Second group, receiving metronidazole gel, has demonstrated a greater treatment response. The first group, where patients received a combined cream containing betamethasone valerate and fusidic acid, has demonstrated the fastest regression in terms of both ADI and DLQI (fig. 1,2).

Fig. 1. Dynamics of Acne Dermatology Index (ADI, points) in patients suffering from acneinform rash before and after various methods of skin toxicity therapy.

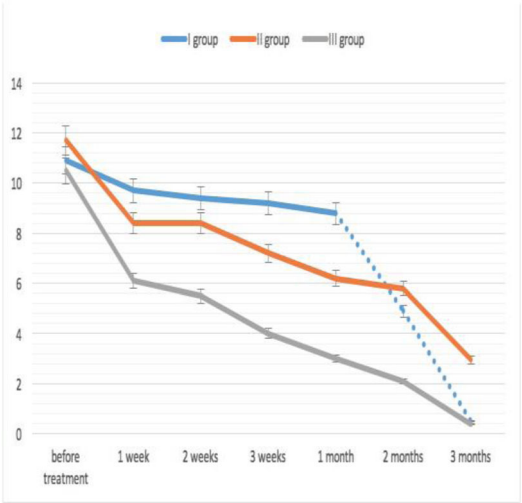
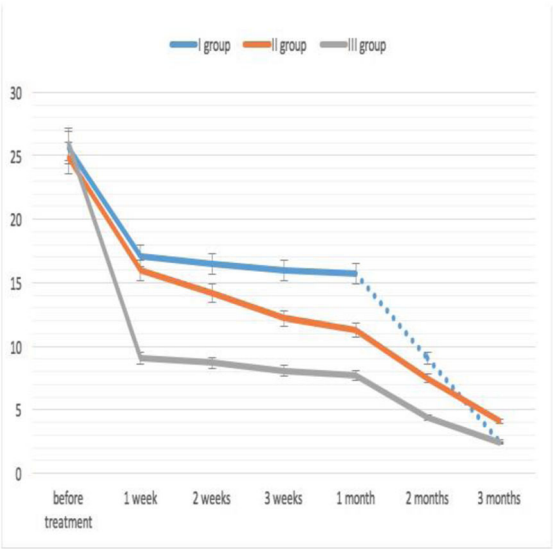


Fig. 2. Dynamics of Dermatology Life Quality Index (DLQI) in patients suffering from acneinform rash before and after various methods of skin toxicity therapy



Conclusions
Systemic therapy with doxycycline at the early stages of I-II grade acneiform rash results in a significant clinical effect and prevents further deterioration in skin condition. Combined treatment including doxycycline and simultaneous application of topical medication containing 0.1% betamethasone valerate and 20% fusidic acid results in a faster and more prominent clinical effect as compared to other combinations: doxycycline with tacrolimus cream, and doxycycline with metronidazole gel.

eP667
PHOTOBIOMODULATION THERAPY FOR THE PREVENTION OF ACUTE RADIODERMATITIS IN HEAD AND NECK CANCER PATIENTS: PRELIMINARY RESULTS OF A PATIENT BLINDED, MULTICENTRIC TRIAL (DERMISHEAD TRIAL)

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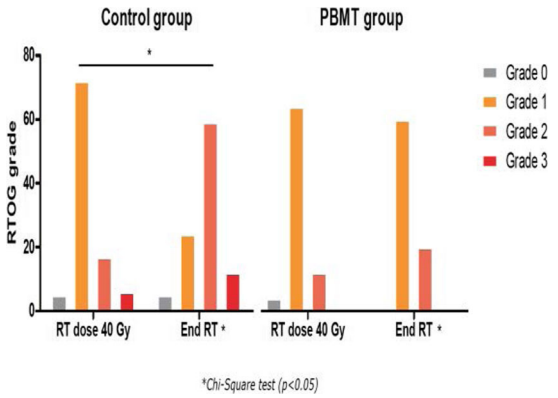
Introduction
About 90 to 95% of the patients undergoing radiotherapy (RT) as part of their cancer treatment develop acute radiodermatitis (ARD), an inflammatory skin reaction. Previous studies demonstrated that photobiomodulation therapy (PBMT) is effective in managing ARD in breast cancer patients. The aim of this study was to investigate the effectiveness of PBMT in the prevention of ARD in head and neck cancer (HNC) patients.
Methods
A prospective, single blind, multicentric, clinical trial was set up at the radiotherapy department of the Jessa Hospital (Hasselt, Belgium) and Ziekenhuis Oost-Limburg (Genk, Belgium). HNC patients planned to undergo RT with or without concomitant chemotherapy (i.e. stratification factor) were randomized into the placebo or PBMT group. Sham or PBM treatments were applied twice weekly during the complete RT course. An experienced nurse evaluated the skin reactions at baseline, at a dose of 40 Gy, and at the end RT (60-70 Gy) by using the Radiation Therapy Oncology Group (RTOG) criteria.
Results
For this preliminary analysis (February 2019), data of 37 patients was available. The percentage of HNC patients presenting a RTOG grade ≥ 2 was significantly higher in the placebo in comparison with the PBMT group at the end of RT (70,6% vs. 25%, resp.; p=0.01). Moreover, the results indicated that the skin toxicity aggravated in the placebo group (p=0.03), while it remained stable in the PBMT group towards the final RT session (p=0.47).



Conclusions
This is the first, placebo-controlled, multicentric trial demonstrating the positive effect of PBMT for the prevention of ARD in HNC patients.

eP668
ORAL TARGETED THERAPY-INDUCED CUTANEOUS TOXICITY: LIFE EXPERIENCE OF PATIENTS WITH ADVANCED LUNG CANCER IN TAIWAN

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Introduction
In Taiwan, 31% of patients with advanced lung cancer receive targeted therapy as the first-line treatment. Many patients reported cutaneous toxicity such as papulopustular eruption, dry itching, mucositis, and hair and nail changes. However, few studies explore this issue about cutaneous toxicity related life experience. Thus, the purpose of this study was to describe cutaneous toxicity related life experience of advanced lung cancer patients receiving oral targeted therapy in Taiwan.
Methods
The qualitative interview by using phenomenological approach was conducted in this study. Patients with advanced lung cancer (stage IIIB & IV) were recruited in oncology outpatient settings at a medical center in northern Taiwan. Open-ended interview questions focused on cutaneous toxicities related life experiences. Data were collected by in-depth interviews by conducted face-to-face. Data were analyzed by using content analysis techniques.
Results
A total of 15 advanced lung cancer patients completed at least one time targeted therapy (e.g., Iressa, Tarceva, Giotrif and Tagrisso). Five major themes emerged that were related to the participants' cutaneous toxicities related life experience during receiving oral targeted therapy, including (i) changes in daily life; (ii) changes of social relationships; (iii) emotional and psychological impact; (iv) unknown future; (v) insufficient and inconsistent information in cutaneous self-care.
Conclusions
It is important to understand and recognize the common cutaneous toxicity related life experience. These findings from this study provide health professionals help those patients with cutaneous toxicity to discuss with their concerns in clinical setting. It might be good for health professionals to offer support.

eP669
RADIATION-INDUCED SKIN TOXICITY IN BREAST CANCER PATIENTS: A SYSTEMATIC REVIEW OF RANDOMIZED TRIALS

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Introduction
Skin toxicity is a common side effect of radiation therapy (RT). However, no definitive guidelines are available for management of radiation dermatitis (RD). The aim of this review was to summarize approaches and findings of studies testing various methods for management of RD in breast cancer patients.
Methods
Medline, Cochrane, and Embase databases were searched up to August 2017. Randomized trials comparing ≥ 2 treatments for RD in breast cancer patients receiving external beam RT were eligible. Review articles, retrospective studies, case reports, case series, and nonrandomized trials were excluded.
Results
The search returned 3534 results, of which 96 were included in the final analysis. These evaluated the effect of different radiotherapy techniques, topical treatments, supplements, skin care regimens, and treatments on

RD. Few topical agents and oral supplements demonstrated effectiveness across multiple randomized trials; however, various RT techniques including intensity-modulated radiotherapy, hypofractionated RT, accelerated partial breast irradiation, simultaneous integrated boost, and prone positioning consistently demonstrated decreased rates of radiation dermatitis, despite the limited number of studies in which they were evaluated.

Conclusions

Progress in the development of new topical treatments and supplements for the prevention and treatment of RD has been slow. However, modes of RT delivery such as IMRT and hypofractionation are now widely used and have been shown to decrease skin toxicity. Other methods such as SIB, APBI, and prone positioning have also shown promise. Continued research into improved modes of RT delivery is likely the best method to prevent RD in breast cancer patients.

eP670

THE PROLONGED HOSPITAL COURSE OF A 59-YEAR-OLD MALE WITH STEVENS-JOHNSON SYNDROME/TOXIC EPIDERMAL NECROLYSIS-LIKE ERUPTION ASSOCIATED WITH NIVOLUMAB THERAPY FOR METASTATIC MELANOMA

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Introduction

Immune checkpoint inhibitors are associated with a variety of dermatologic immune-related adverse events (irAEs). These irAEs diminish patients' quality of life and in some cases lead to discontinuation of cancer therapy. In this report, we describe the prolonged hospital stay (50+ days at the time of submission of this abstract) of a patient with grade 4 Stevens-Johnson syndrome/toxic epidermal necrolysis (SJS/TEN)-like rash associated with Nivolumab use.

Methods

We present a case report of a patient with metastatic melanoma who developed SJS/TEN-like eruption after his first Nivolumab infusion.

Results

A 59-year-old male with metastatic melanoma developed grade 4 SJS/TEN-like eruption 16 days after his initial dose of Nivolumab as first-line therapy. He was treated with intravenous immunoglobulin (IVIG) and supportive Burn ICU-level wound care. His presenting cutaneous condition improved. His hospital stay was complicated by several episodes of bacteremia and fungemia, encephalopathy, acute hypoxic respiratory failure, and renal failure. After the resolution of SJS/TEN-like eruption, he developed severe edema bullae which improved after volume status optimization. He then experienced multifactorial delayed cutaneous wound healing in the context of increased skin fragility given sequential cutaneous insults.

Conclusions

Prompt identification and management of severe cutaneous irAEs and multiorgan failure is essential to improve cancer patient outcomes. We strongly encourage multidisciplinary collaboration between dermatologists, oncologists, and other medical specialists.

eP671

RANDOMIZED PHASE III CLINICAL TRIAL EVALUATING ROLE OF A STRUCTURED TEACHING MODULE IN REDUCING SEVERITY OF CAPECITABINE INDUCED HAND-FOOT SYNDROME

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Introduction

Capecitabine induced hand-foot syndrome (HFS) has a detrimental effect of patient's quality of life while on chemotherapy. The effect of a structured teaching module (STM) for reducing the incidence and severity of HFS in patients on chemotherapy was evaluated.

Methods

Patients with colorectal cancer receiving capecitabine or capecitabine-oxaliplatin were enrolled into the study. This non-crossover phase III double-blinded clinical trial randomized patients in a 1:1 ratio to receipt of a STM on HFS administered by a trained oncology nurse at regular intervals(case) versus standard information on HFS care administered by treating clinician (control). The primary endpoint was comparison of fraction of patients in both arms developing at least grade 2 HFS.

Results

Between 15 Jun 2016 and 4 Apr 2018, 280 patients (140 to case and 140 to control) were enrolled. Median number of capecitabine chemotherapy cycles was eight. 269 patients (96%) were evaluable for HFS, of whom 89 patients (33.08%) developed at least grade 2 HFS [grade 2 HFS – 73 patients (26.1%); grade 3 HFS – 16 patients (5.7%)]. There was no difference in at least grade 2 HFS between case and control arms of the study [control group - 45/140 (32.1%); case – 44/140 (31.4%); p=1.0]. There were no differences in secondary endpoints like diarrhea as well.

Conclusions

The use of an oncology trained nurse was feasible in administering a structured teaching module, but did not reduce the incidence and severity of capecitabine induced HFS. Further therapeutic interventions are required to alleviate HFS in patients receiving capecitabine.

eP672

SAFETY OF TOPICAL VITAMIN K1 FOR EPIDERMAL GROWTH FACTOR INHIBITOR-INDUCED RASH

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Introduction

Papulopustular rash occurs in 80% of patients receiving Epidermal Growth Factor Inhibitors (EGFRI) for cancer treatment. The rash often results in decreased quality of life and discontinuation of EFGRI therapy. Effective rash management is imminent to optimize therapeutic outcomes. Topical Vitamin K1, a phosphatase inhibitor, could reduce rash severity in the skin without systemic interference of EGFR inhibition in the tumor. This study evaluated the safety of a topical 0.1% Vitamin K1 product for potential use in patients with EGFRI-induced rash.

Methods

Topical application of 0.1% Vitamin K1 product resulted in Vitamin K1 blood concentrations ranging from 0 to 8.22ng/ml in 10 healthy subjects. To determine if Vitamin K1 reversed cetuximab-induced EGFR inhibition, A549 lung cancer cells were treated *in vitro* cetuximab (55μg and 160μg) followed by Vitamin K1 (2.5 to 100ng/ml) and EGF (200ng) in 1% FBS/RPMI media. Phosphorylated-EGFR (p-EGFR) was detected by semi-quantitative ELISA. All statistical analyses (Univariate General Linear Model, ANOVA) were performed at significance level of 0.05.

Results

EGF significantly increased p-EGFR (untreated vs. +EGF: mean difference [95% CI = -0.3470[-0.0.397,-0.297], p<0.001). Cetuximab (55μg or 160μg) significantly decreased EGF-induced p-EGFR (+EGF vs. +cetuximab: mean difference [95% CI] = 0.140[0.090, 0.190] and 0.261[0.031, 0.401], p's<0.001). None of the seven doses of Vitamin K1 increased p-EGFR in cetuximab-treated cells (p's>0.670).

Conclusions

These data suggest that Vitamin K1 levels systemically absorbed by topical application would not reverse cetuximab-inhibition of EGFR. Our topical 0.1% topical Vitamin K1 product appears safe to use in patients receiving EGFRI-therapy.

eP673

RADIATION DERMATITIS TATTOOS RESEMBLING MALIGNANT MELANOMA

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Introduction

Introduction: Radiation therapy (RT) requires pre-treatment marking to ensure reproducibility of set-up and accurate treatments. Permanent tattoos of 2-3 mm in diameter near the irradiated site are standard of treatment. Radiation tattoos are created with blue or black ink, and may mimic pigmented lesions, including melanoma.

Methods

Here we describe 2 cases of radiation tattoos clinically mimicking malignant melanoma, in order to help providers avoid unnecessary biopsies in cancer patients and to describe alternatives to standard permanent ink tattoos.

Results

Both patients presented with a chief complaint of new blue skin lesions. One had a history of stage 3 melanoma treated with excision, RT, and adjuvant immunotherapy. The second had a history of desmoid tumor on the abdomen and denied any prior RT. She had forgotten that RT had been intended, and she had received tattoos but did not end up completing treatment. In both cases, the lesions were small blue macules with homogenous blue pigment on dermoscopy. Biopsy demonstrated extracellular pigment in the dermis, consistent with a tattoo in both cases.

Conclusions

Cutaneous metastases from melanoma and radiation tattoos can be indistinguishable on clinical exam as well as dermoscopy. In cases of unreliable patient history and lack of records of exact radiation tattoo placement, unnecessary biopsies may take place. Alternatives to permanent ink tattoos for RT markings, such as temporary henna tattoos and fluorescent ink tattoos, have recently been studied for RT marking and may provide the added benefit of improving patient self-image

eP674

REFERRAL PRACTICES TO DERMATOLOGISTS FOR THE TREATMENT OF RADIATION DERAMATITIS: A DESCRIPTIVE SURVEY STUDY ACROSS THE UNITED STATES

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Introduction

Radiation dermatitis (RD) occurs in up to 95% of patients receiving radiation therapy (RT). Dermatologists are not often involved in the management of RD. We aim to describe radiation oncologists' referral practices for the treatment of RD and to identify barriers to dermatology referrals.

Methods

We emailed a survey to radiation oncologists across the USA regarding RD management. Information regarding demographics, experience managing RD, and rates of referral to dermatologists were solicited.

Results

Out of 5505 emails sent, 705 (12.8%) physicians responded. Fifteen percent of radiation oncologists reported that they ever refer patients to dermatology. Private practitioners referred at a rate of 8%, which was significantly less than providers in academic (18.4%) or oncology (13.4%) centers ($p<0.01$). Practitioners within 5 miles of urban cities were more likely to refer (OR 1.91, 95% CI 1.20-3.00, $p<0.01$). Radiation oncologists in the Southeastern USA were less likely to refer (OR 0.29, 95% CI 0.13-0.67 $p<0.01$). Those who did not refer cited preference to treat the patients themselves, excessive wait times and referral to wound care specialists as the most common reasons.

Conclusions

Dermatologists can play an important role in a multidisciplinary approach to the study and treatment of cancer therapy-related toxicities. Lack of timely access in various geographic areas may be one barrier to dermatologic care, consistent with reported dermatology shortages in rural areas and the Southeast. Addition of dermatologists to cancer treatment teams could improve access and stimulate needed research into strategies for the treatment of RD.

eP675

GENOME-WIDE ASSOCIATION STUDY OF CAPECITABINE-INDUCED HAND-FOOT-SYNDROME IN COLORECTAL CANCER

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Introduction

Hand-foot-syndrome (HFS) is one of the common adverse events that limits capecitabine treatment. Previous pharmacogenetics studies of HFS almost use candidate gene approach, but up till now, the pathophysiology and mechanism of HFS is still unclear, and the effective predictive biomarkers of HFS is yet to be found.

Methods

We used a two-stage GWAS design including 1104 CRC patients who received capecitabine-based treatment in Sun Yat-sen University Cancer Center. We performed a genome-wide association analysis in 514 patients, including 148 cases (grade 2-3 HFS) and 366 controls (grade 0-1 HFS), and validated the top associations in an independent cohort of 590 patients. Sanger sequencing of the coding regions of *TYMS* was performed in 268 patients. All statistical tests were two-sided.

Results

In this retrospective study, we found the patients with capecitabine-based combination treatment had a lower HFS incidence compared with those treated by single-agent capecitabine (OR=0.22, 95% CI=0.22-0.50, $P<0.01$), although patients almost received the same dose of capecitabine. By genome-wide association study, we identified two variants, rs2853741(OR=2.01, 95% CI=1.63-2.49, *P*combined=9.72 10 -11) in the promoter region of *TYMS*, and an intergenic polymorphism rs1890775(OR=0.62, 95% CI=0.5-0.76, *P*combined=3.91 10 -6) were strongly associated with HFS. TYMS an essential enzyme for DNA synthesis and repair is a critical target of capecitabine. Additionally, the coding regions sequencing of *TYMS* identified two novel variants in patients with severe HFS.

Conclusions

This genome-wide association study identifies two novel SNPs significant association with HFS in colorectal cancer patients in Chinese, which could help to elucidate the underlying mechanism of hand-foot-syndrome.

eP676

EFFECTIVENESS OF A TAILORED MOISTURIZER ON CHEMOTHERAPY-INDUCED SKIN DRYNESS AMONG BREAST CANCER PATIENTS : DOUBLE-BLIND CONTROLLED CLINICAL TRIAL

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Introduction
Up to 60% of breast cancer patients with chemotherapy experienced skin dryness due to decreased sebum contents. To evaluate effectiveness of a tailored moisturizer on skin dryness due to chemotherapy among breast cancer patients.
Methods
It is a double-blind randomized controlled trial conducted. Breast cancer patients experiencing skin dryness after 1 cycle of chemotherapy were randomly assigned to 3 groups (A: tailored moisturizer; B: regular moisturizer; and C: no product). Participants of the intervention groups were asked to apply the study product twice per day until 1 month after completion of chemotherapy. Skin dryness, dullness, QoL, and changes in sebum level were assessed at baseline, 3 weeks after randomization and 1 month after completion of chemotherapy.
Results
A total 174 patients were randomized to group A (n = 59), B (n = 56) and C (n = 61). After 1 month after completion of chemotherapy, patients of the group A (8.5%) and B (8.9%) were less likely to report severe skin dryness compared to those of C (27.9%, P<0.001). Patients in the group A also reported significantly lower levels of stress due to skin dryness (1.5 vs. 2.8; P = 0.01), skin dullness (3.1 vs. 4.6; P = 0.012) and better skin related QoL (2.0 vs. 4.8; P < 0.001) than controls. Sebum contents in cheek of the group A was significant less decreased compared to group C.
Conclusions
We confirm the effectiveness of tailored moisturizer for chemotherapy-induced skin dryness and dullness as well as QoL among breast cancer patients.

eP677
IN-VITRO AND EX-VIVO STUDY ABOUT MODE OF ACTION OF EGF ON SKIN TOXICITY INDUCED BY EGFR INHIBITORS

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Introduction
Epidermal growth factor receptor inhibitors (EGFRIs) have been well established for the therapy of some cancers. Unfortunately, anti-EGFRIs therapy was halted to treat cancer patients due to its cutaneous skin toxicities in many cases. In order to reduce the side effects, understanding of the mechanisms of the skin toxicities caused by EGFRIs is arising important issue. However, these are only partially understood. Therefore, we investigated the mode of action of rhEGF on EGFRIs induced skin toxicities using human epidermal keratinocytes and 3d-cultured human skin cell tissue.
Methods
Cetuximab was used to treat the cells or the tissue with various concentrations of rhEGF. Then, expression level of skin barrier related proteins, inflammatory cytokines and antimicrobial peptides (AMPs) were measured by using RT-qPCR, ELISA, or immunofluorescence.
Results
Although cetuximab downregulated expression of skin barrier related protein such as filaggrin, claudin-1,-3 and occludin in 3d-cultred cell tissue, but co-treated tissues with rhEGF were recovered. Moreover, cetuximab increased IL-1α, IL-8 and TNF-α expression and it decreased AMPs (especially hBD-2 and 3) expression in keratinocytes. Interestingly, decrement of cytokines expression and increment of AMPs expression were observed in rhEGF co-treated cells. EGFR and phosphorylated EGFR (pEGFR) expression, also, were decreased in cetuximab treated cells while EGFR and phosphorylated EGFR (pEGFR) expression were increased in rhEGF co-treated cells.
Conclusions
The results reveal that rhEGF may have protective effects on the skin toxicities induced by EGFRIs through modulating inflammatory reactions and skin barrier function.

eP678
ANTIBIOTIC RESISTANCE DUE TO ANTIBIOTIC USE FOR EPIDERMAL GROWTH FACTOR RECEPTOR INHIBITOR–RELATED PAPULOPUSTULAR SKIN ERUPTION

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Introduction
Up to 90% of cancer patients receiving epidermal growth factor receptor inhibitors (EGFRi) develop a cutaneous papulopustular eruption. PPE is initially sterile, however secondary bacterial infection occurs frequently. Topical clindamycin and oral tetracyclines are gold standard for prevention and management of EGFRi-induced PPE, however monotherapy antibiotic use may contribute to antibiotic resistance and to refractory cases of PPE that do not respond to antibiotics.
Methods
We conducted an IRB-approved, retrospective chart medical record review of the Stanford Cancer Institute Research Database. Patients included in the cohort were diagnosed with at least grade 1 EGFRi-related PPE and had a subsequent skin culture that yielded bacterial organisms. We collected dates of EGFRi inhibitor therapy, time and duration of antibiotic exposure to topical clindamycin and/or oral tetracyclines, and bacterial wound culture results, including antibiotic susceptibility testing.
Results
In our retrospective chart review of 122 patients, there was increased risk of antimicrobial resistance in patients with history of monotherapy antibiotics use with either topical clindamycin (HR 1. 94, 95% CI 0. 83-4. 50, p<0. 12), or oral tetracycline-class antibiotics (HR 3. 15, 95% CI 1. 45-6. 85, p<0. 004). The incidence of resistant bacterial infection was greater in those treated with antibiotic monotherapy for >4 weeks.

Table 1: Demographics and characteristics of 71 patients with positive bacterial wound cultures from papulopustular eruptions secondary to EGFRi therapy.

Characteristic	Wound culture without antibiotic-resistant[b] bacterial secondary infection of PPE	Wound culture with antibiotic-resistant[b] bacterial secondary infection of PPE	p-value
Number of patients	41	30	
Sex, No. (%)			0.7769
Female	15 (36.6)	10 (33.3)	
Male	26 (63.4)	20 (66.7)	
Age at start of EGFRi treatment, mean ± SD[a]	62.7 ± 13.5	61.9 ± 12.5	0.7862
Cancer, No. (%)			0.1560
Head & Neck	20 (48.8)	13 (43.3)	
Breast	4 (9.8)	0	
Colorectal	6 (14.6)	3 (10.0)	
Lung	10 (24.4)	14 (46.7)	
Other	1 (2.4)	0	
EGFRi, No. (%)			0.3356
Afatinib	1 (2.4)	1 (3.3)	
Afatinib + Cetuximab	0	1 (3.3)	
Cetuximab	22 (53.7)	13 (43.3)	
Erlotinib	9 (22.0)	12 (40.0)	
Trastuzumab + Pertuzumab	3 (7.3)	0	
Panitumumab	5 (12.2)	3 (10.0)	
Lapatinib	1 (2.4)	0	
Topical clindamycin use, No. (%)			**<.0001**
none	26 (63.4)	8 (26.7)	
1–28 days	10 (24.4)	3 (10.0)	
4+ weeks	5 (12.2)	19 (63.3)	
Oral tetracycline use, No. (%)			**<.0001**
none	36 (87.8)	12 (40.0)	
1–28 days	4 (9.8)	4 (13.3)	
4+ weeks	1 (2.4)	14 (46.7)	
Number of antibiotics used, No. (%)			**<.0001**
none	23 (56.1)	4 (13.3)	
1 (clindamycin or tetracycline)	16 (39.0)	12 (40.0)	
2 (clindamycin and tetracycline)	2 (4.9)	14 (46.7)	

‡ Age was compared by Student's t-test; all other variables were analyzed by chi-square or Fisher's exact test as appropriate.
[b] Resistant to clindamycin and/or tetracycline in wound culture resistance report

Table 2: Positive bacterial wound culture results from 71 patients[a]

Wound culture result	n
MSSA[b]: clindamycin- and tetracycline-sensitive	20
MSSA: clindamycin-resistant	11
MSSA: tetracycline-resistant	4
MSSA: clindamycin- and tetracycline-resistant	6
MRSA[c]: clindamycin- and tetracycline-sensitive	2
MRSA: clindamycin-resistant	3
MRSA: tetracycline-resistant	1
MRSA: clindamycin- and tetracycline-resistant	1
Enterococcus spp[d]	2
Serratia spp	1
Serratia spp: tetracycline-resistant	4
Other gram-negative bacteria[d,e]	28

[a] One wound culture from PPE per patient was included. If patients had multiple wound cultures, the first positive wound culture was taken. Among 71 patients with positive bacterial wound culture, 83 total strains of bacteria were reported, as some patients had polymicrobial skin infections.
[b] methicillin-susceptible *Staphylococcus aureus*
[c] methicillin-resistant *Staphylococcus aureus*
[d] Antibiotic susceptibility profiles did not include clindamycin or tetracycline susceptibilities.
[e] Other GNR results included the following: *Enterobacter, Klebsiella, Pseudomonas, Moraxella, Proteus, Citrobacter, Elizabethkingia, Raoultella, Stenotrophomonas*, and uncharacterized GNR.

Conclusions
We found that antibiotic monotherapy during EGFRi therapy for cancer is correlated with increased incidence of antibiotic resistance on wound culture in patients receiving topical clindamycin and/or oral tetracyclines. Consideration of addition of bactericidal agents to antibiotics may lead to better control of cutaneous adverse events of EGFRI therapy.

eP679
MONITORING CHEMOTHERAPY-INDUCED ALOPECIA WITH TRICHOSCOPY

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Introduction
Chemotherapy-induced alopecia (CIA) ranks among the psychologically most devastating effects of cancer treatment for oncological patients, with an overall incidence of 65%. Nowadays trichoscopy is largely employed in the diagnosis of alopecia, but no description of CIA trichoscopic pattern are present in literature. We want to create an organic description of CIA trichoscopic aspects.
Methods
Oncological patients candidate to chemotherapy drugs, afferent to our trichological outpatient were studied. Anamnesis, clinical exam, clinical global photography, pull test, trichogram and trichoscopy were conducted at the different moments of therapeutic treatment.
Results
A definite trichoscopic pattern in the different phases of treatment was observed. After the first 3 weeks of chemotherapy rare and scattered black dots, broken hairs, flame hairs and pohl pinkus appeared. At the end of chemotherapy besides the features described above, numerous thin hair in regrowth were detected, together to rare terminal hair, scattered black dots and circle hair. 3 months after chemotherapy a progressive increase of follicular units and elongation of the existing hair were visible.
Conclusions
We propose a description of CIA trichoscopic pattern and its evolution during the different phases of chemotherapy.

eP680
DRUGS AND DEVICES IN PREVENTION AND TREATMENT OF CHEMOTHERAPY-INDUCED ALOPECIA: WHEN AND HOW SHOULD BE EMPLOYED

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Introduction
Chemotherapy-induced alopecia (CIA) is one of the most dramatic side effect in course of chemotherapy, and actually no guidelines are available for its prevention and treatment. Several devices and drugs are reported to be utilized, but results are often deluding. In this work we will focalize on CIA induced by classic anticancer drugs, with the aim to analyze the devices that have been proposed in literature and give our opinion about.
Methods
We analyzed the literature searching for therapeutic devices and drugs utilized for the treatment of CIA and we analyzed their mechanisms of action trying to correlate CIA pathogenesis with a correct therapeutic rationale.
Results
Scalp cooling is the only agent that has been approved by American FDA for CIA prevention. In our opinion minoxidil and bimatoprost should not be used during chemotherapy administration, but they can be employed after chemotherapy discontinuation in order to obtain a greater regrowth.
Conclusions
The aspect we want to emphasize, is that therapy should always be modulated on the patient and no fixed protocol should be used. Trichoscopy and trichogram could be a useful tool for this scope.

eP681
REVEALING THE UNSEEN EFEFCTS OF CONCOMITANT CHEMO-RADIOTHERAPY IN CONTRA-LATERAL NORMAL BUCCAL MUCOSA IN ORAL SQUMOUS CELL CARCINOMA PATIENTS: A CYTOLOGICAL STUDY

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Introduction
In patients receiving concomitant chemo radiotherapy as a treatment for OSCC, cytological changes were seen not only in neoplastic epithelial cells but the non-neoplastic epithelial cells are also affected resulting in cytopathological atypical changes. Thus, the present study was designed to observe oral epithelial atypical changes induced in contralateral normal buccal mucosa in OSCC patients receiving CCRT.
Methods
The study included 76 patients of OSCC treated by Concomitant Chemoradiotherapy (CCRT) were collected from Institute of Nuclear Medicine and Oncology Lahore (INMOL) Hospital Lahore. Cytological smears were obtained from contra-lateral normal buccal mucosa of oral squamous cell carcinoma patients. Serial scrape smears were taken from contralateral normal buccal mucosa on specific days of therapy i.e. before, immediate (after first exposure), at 17th day (mid of therapy) and at the end of therapy with the wooden spatula, whereas, 20 patients were taken as normal health control and they were not exposed to CCRT. The smears were stained with Hematoxylin and eosin and Papanicolaou stain. Pearson's Chi-square test was used for statistical significance.
Results
CCRT induced epithelial atypia was more evident at the 17th day of treatment whereas oral epithelial atypical changes were predominantly noted at the end of therapy. Significant association was observed between days of CCRT, epithelial atypia, oral epithelial atypical changes and epithelial cells (degenerated, anucleated squames and apoptotic cell) were noted. Atypia was not observed in any control group
Conclusions
On contralateral normal buccal mucosa ionizing radiation therapy induced atypical/ reactive changes which may lead to secondary malignancy in radiation field

eP682
ASSESSING THE RISK OF CHEMOTHERAPY TOXICITY AND HOSPITAL ADMISSION DUE TO TOXICITY

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Introduction
Finding overall toxicity incidence for a typical teaching hospital population proved difficult. A telephone assessment 24 hours following the administration of a first cycle of chemotherapy in a teaching hospital was undertaken for all oncology patients, with the aim of reducing admission due to toxicity through advice and intervention.
Methods
Data was obtained after 1 year. Toxicity incidence and severity, admission rates and length of stay (LoS) were established. Regression modelling identified predictors of these outcomes. The commonest toxicities were explored as secondary outcomes.
Results
1539 patients were studied and the overall incidence of toxicity was 35.6%. Disease site and number of chemotherapy agents given predicted toxicity, with breast and upper gastrointestinal cancers having a higher likelihood of toxicity. The more anticancer agents used, the higher the risk of toxicity. Disease was predictive of toxicity grade, with urology, gynaecology and lung patients experiencing higher grades of toxicity than other tumour sites. The rate of admission was 13.1% and mean LoS 4.4 days. Disease and number of drugs in the regimen affected the risk of admission, with gynaecology, head and neck and lung patients and patients who received 3 drugs having a higher likelihood of admission. Predictors in the sub-groups of breast, lower gastrointestinal and lung cancers matched the whole population and the number of drugs was shown to be a predictor of nausea, vomiting and fatigue when explored as secondary outcomes.

		%Experiencing			
		Grade of Toxicity			
Toxicity	% Reporting Any Grade	1	2	3	4
Nausea	16.2	13.9	1.8	0.2	
Vomiting	6	3.4	2.3	0.1	
Stomatitis	1.2	0.5	0.2		
Diarrhoea	3.4	2.8	0.3	0.1	
Constipation	4.4	3	0.9		
Fatigue	10.7	9.8	0.5		
Anorexia	2.9	1.6	0.8	0.1	
SOB	1.9	0.5	0.1		0.1
Sensory Neuropathy	3.8	3.4	0.1		
Motor Neuropathy	0.3	0.1			
Bleeding	0.7	0.1	0.1		
Arthralgia / Pain	4	2.6	0.6		
Bruising	0.9				

Conclusions
The burden of acute chemotherapy toxicity of a heterogeneous population was elucidated.

eP683
STUDY ON QUALITY OF LIFE OF BREAST CANCER PATIENTS RECEIVING FIRST LINE CHEMOTHERAPY IN A TERTIARY CARE HOSPITAL

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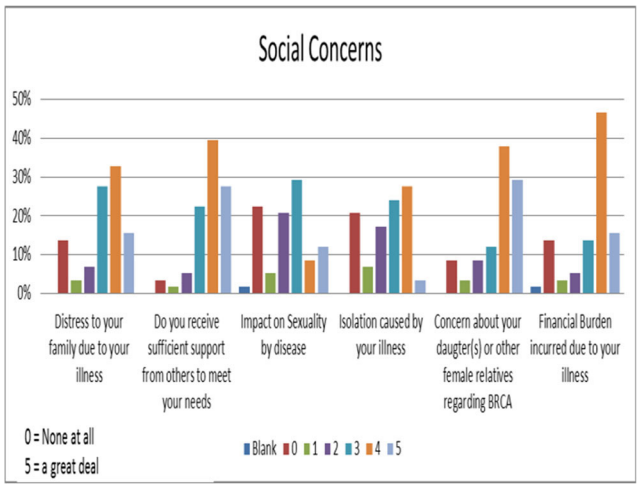
Introduction
The aim of our study is to assess how the quality of life of patients with Breast cancer is affected by the side effects of chemotherapeutic drugs Doxorubicin, Cyclophphamide and Taxane.
Methods
Questionnaire form was developed which includes questions on side effects of chemotherapy, that ask presence and severity of psychological, spiritual and social well being and extent of fear in patients receiving chemotherapy. The questionnaire forms are filled by patients after taking their written consent and explaining the study to them. The patients' data is collected from Oncology daycare at The Aga Khan University Hospital.
Results
The most common problems for patients receiving chemotherapy for Breast cancers are fatigue, changes in appetite and generalized pain affecting more than 90 percent patients. More than eighty percent patients have fear of recurrence or spreading of their disease and financial burden. Around sixty to seventy percent patients have issues with their psychological wellbeing like lack of happiness and satisfaction in life, difficulty to concentrate and feeling usefulness of life. Ninety percent people feel stress in their family but on the other hand receive same amount of support too. Almost ninety percent people are markedly motivated towards religious activities.



Conclusions
This study can be concluded as that severely affecting problems to most of the patients are fatigue, pains, changes in appetite, sleep and financial burden. Religion and spiritual activities becomes the primary point of interest, overall most of the people feel happy, hopeful and find their selves still useful.

eP684
CAR-T GENE THERAPY INDUCED CYTOKINE RELEASE SYNDROME AND ITS ASSOCIATION WITH THE RISK OF MORTALITY: A US FDA ADVERSE EVENT REPORTING SYSTEM (FAERS) DATABASE ANALYSIS.

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Introduction
The Chimeric-antigen receptor T-cell adoptive immunotherapy (CAR-T) has shown outstanding efficacy in the treatment of B-cell malignancies. Cytokine release syndrome (CRS), one of the most severe

adverse events, is a major issue with Tisagenlecleucel therapy. The objective of this study was to assess the adverse events occurring due to the administration of newly approved CAR-T therapy

Methods

A FDA Adverse Event Reporting System database study of 237 patients treated with Tisagenlecleucel (screened from 1549107 case reports between July 2017 to June 2018).

Results

The mean age of patients treated with Tisagenlecleucel was 24.00 ± 19.80 yrs, with a gender distribution of male-female as 51.9% and 40.9% respectively. Cytokine release syndrome occurred in 176 (74.3%) of patients. Neurologic events occurred in 74 (31.2%) of these patients. Reported indications for CTL019 therapy included Acute lymphoblastic leukaemia (ALL) (including refractory or relapse cases) in 122 (51.5%), relapsed or refractory large B-cell lymphoma in 57 (24.1%) and CLL in 5 (2.1%) patients. Disproportionality analysis indicated a signal of Cytokine release syndrome caused by Tisagenlecleucel with a Proportional Reporting Ratio (PRR) (95% CI) of 3241.19 (2666.73, 3939.41) and Reporting Odds Ratio of 3771.68 (3052.87, 4659.74). Binomial logistic regression has shown a CRS as a statistically significant predictor of mortality. (OR=37.01, 95% CI(2.14-638.80), p=0.013))

Conclusions

We found a quite a higher proportion of reports of CSR with the alarming signal with Tisagenlecleucel. CRS need vigilant management as this is a major reason for mortality of patients treated with Tisagenlecleucel.

Table 1: Comparative analysis of Tisagenlecleucel treated patients with respect to occurrence of Cytokine release syndrome.

Characteristic	With CRS (n=176)	Without CRS (n=61)	Statistical Significance
Age, mean (SD), Median, y	23.71 (19.34), 16.00 (n=166)	25.09 (21.64), 18.00 (n=44)	0.365[&]
Weight, mean (SD), kg	52.60 (26.03) (n=45)	74.03 (39.33) (n=21)	0.031[#]
Sex, No. (%)			
Female	80 (45.5)	17 (27.9)	0.077 *
Male	89 (50.7)	34 (55.7)	
Not reported	7 (4.0)	10 (16.4)	
Indication, No. (%)			
ALL/Refractory ALL/ALL Recurrence	87 (49.4)	35 (57.4)	
Paediatric group	61	18	0.051 *
Non Paediatric group	26	17	
BCTAL/DLBCL/DLBCL Recurrence/BCSLL/BCSLL Recurrence/BCL	54 (30.7)	3 (4.9)	
CLL	--	5 (8.2)	
Unknown Indication	26 (14.8)	12 (19.7)	
Not reported	9 (5.1)	6 (9.8)	
Concomitant Medication, No. (%)			
Only Tisagenlecleucel	32 (18.2)	44 (72.1)	<0.001 *
Tisagenlecleucel with other drugs	144 (81.8)	17 (27.9)	
Concomitant Steroid, No. (%)			
Tisagenlecleucel with steroids	30 (17.0)	4 (6.6)	0.044 *
Tisagenlecleucel alone or with other drugs except steroids	146 (83.0)	57 (93.4)	
Concomitant Lymphodepletion (Cyclophosphamide/Fludarabine/Both)			
Yes	59 (33.5)	4 (6.6)	<0.001 *
No	117 (66.5)	57 (93.4)	
Thrombocytopenia, No. (%)			
Present	32 (18.2)	2 (3.3)	0.004 *
Absent	144 (81.8)	59 (96.7)	

Table 2: Logistic regression predicting likelihood of mortality outcome based on gender, CRS, therapy indication, age and lymphodepletion.* (n=161)

Variable	B	SE	p	Odds Ratio	95% CI for Odds Ratio	
					Lower	Upper
Gender[#]	0.114	0.353	0.748	1.12	0.561	2.237
CRS	3.611	1.453	0.013	37.01	2.144	638.8
Indication[#]	-0.098	0.445	0.826	0.907	0.379	2.169
Age	0.022	0.012	0.064	1.022	0.999	1.046
Lymphodepletion	0.274	0.368	0.458	1.315	0.639	2.704
Constant	-4.6	1.743	0.008	0.01005	0.00033	0.3064

eP685
SIDE EFFECTS AMONG PATIENTS WITH INVASIVE CERVICAL CANCER RECEIVING CISPLATIN BY AGE RANGE: PROSPECTIVE STUDY

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Introduction

Cisplatin (CDDP) is a choice of cancer chemotherapy for cervical cancer with common side effects from CDDP. Factors that cause side effects are many factors together to reach the patient's age. Some researchers report that age is an important factor influencing the side effects of CDDP.

Methods

Prospective descriptive research in 70 new cervical cancer patients of Ramathibodi hospital. During the period from 1 August 2017 to 30 June 2018. Data were collected by two sets of research tools were used.

1. Personal information inquiries (created by the researcher and faculty).
2. Evaluate the severity of symptoms after chemotherapy (Common Terminology Criteria for Adverse Events v 4.0 (CTCAE)) bring back to home.

Results

Young cervical cancer patient's ≤ 60 years were 47 (67%) had the most common symptoms were 1) fatigue 2) constipation 3) vomiting 4) anorexia 5) nausea. There were 27 (57%) serious adverse events. And elderly patient's > 60 years were 23 (33%) had the most common symptoms were 1) fatigue 2) constipation 3) nausea 4) vomiting 5) anorexia. There were 9 (39%) serious adverse events. There was no significant difference in the incidence of side effect of cisplatin between the two groups of age range.

Conclusions

The study shows that side effects some symptoms after receiving cisplatin in cervical cancer patients at different ages are different

eP686
A PHARMACOVIGILANCE PROGRAM ON SUPPLIERS

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Introduction

A large number of patents for antineoplastic drugs are expiring. Faced with a market fueled by soaring prices for innovative medicines and pressure from pharmaceutical companies for accelerated approval of medicines, issues involving the safety of generic drugs and the importance of pharmacovigilance is paramount.

Methods

Program implementation to monitoring adverse reactions after changes in cytotoxic suppliers.

Formulary to registration of adverse events and introduction of data on the National RAM Platform.

Results

Between 2016 and 2018, 47 adverse reactions to cytotoxic drugs were reported. In 10 patients, the reaction occurred after changing the drug supplier and the analysis of the RAM National Platform, attributed possible relation with the use of the drug. The acquisition to the supplier was suspended and treatment initiated with the original drug.

Conclusions

We assume that the nature of the disease and its symptomatology, coupled with the conviction that the side effects of chemotherapy are expected and normal, lead to underreporting. It is necessary the intervention of the medical and nursing team to sensitize patients to report. The position of

the pharmacist, directly involved in the systematic and multidisciplinary study of the drug, is determinant in the analysis of the budget impact of the change of supplier of each cytotoxic drug versus the benefit / risk ratio for the patient. We call attention to the need for the pharmacist to collaborate in the Oncology Unit, allowing the evaluation of the administration of cancer medications, implementing risk minimization measures and communicating these to health professionals and patients.

eP687
AUTOIMMUNE MENINGOENCEPHALITIS INDUCED BY IMMUNE-CHECKPOINT INHIBITOR USE: A SINGLE CENTER EXPERIENCE

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Introduction
Immune checkpoint inhibitors (ICIs) have emerged as promising class of anti-cancer treatment in several types of tumor, but immune-related adverse events are occasionally encountered during ICI treatment. Autoimmune meningoencephalitis is a rare but fatal adverse event. However, little has been known about the natural course and optimal strategies to manage immune-related meningoencephalitis (irME).
Methods
We retrospectively reviewed clinical characteristics and the natural course of three urothelial carcinoma of bladder patients who developed irME induced by ICI.
Results
All the cases received anti-programmed death-ligand 1 (PD-L1) antibody. The most common presenting symptoms were fever and altered mentality, with the median onset of 14 days. Cerebrospinal fluid analyses revealed pleocytosis and elevated protein level, but negative results for infectious etiologies. Malignant cells were not detected in cerebrospinal fluid. Paraneoplastic antibody was observed in one patient. As irME was highly suspected, the patients were given steroid. Case 1 was completely recovered with concurrent steroid plus immunoglobulin (IVIG). Case 2 received IVIG as he did not show improvement with steroid and responded transiently, but finally recurred. In case 3, steroid resolved her altered mentation, but weakness of bilateral extremities due to Guillain–Barré syndrome remained and was partially recovered with IVIG and intravenous rituximab. Tumor size was decreased in 2 patients.

Summary of clinical characteristics of three patients who developed autoimmune meningoencephalitis

No.	Age/Sex	Drug	Disease	PD-L1 expression by IHC (SP142*)	Time to onset	CSF white blood count (/μL)	CSF protein (mg/dL)	Immunosuppressive Treatment (D: day from onset)	Time to recovery
Case 1	42/male	Anti-PD-L1 antibody plus MEK inhibitor	Urothelial cell carcinoma of bladder (HER2-amplified)	Negative	14 days	65 (P 0 L 6 O 58)	133	Steroid (mPd 1g daily 5 days) (D3 – D7) IVIG (0.4 g/kg/day 5 days) (D3 – D7)	10 days
Case 2	49/male	atezolizumab (TECENTRIQ®)	Urothelial cell carcinoma of bladder (HER2-amplified)	Positive 1% on TC 7% on IC	14 days	50 (P 17 L 7 O 76)	218.1	Steroid (mPd 1g daily 5 days) (D3 - D7) IVIG (0.4 g/kg/day 5 days) (D5 – D9; D44 – D48)	Death
Case 3	70/ female	atezolizumab (TECENTRIQ®)	Urothelial cell carcinoma of bladder	Positive 1% on TC 5% on IC	15 days	30 (P 6 L 6 O 18)	358	Steroid (mPd 1mg/kg daily, then tapering to 15mg daily) (D4 –) IVIG (0.4 g/kg/day 5 days) (D6 - D10; D27 – D31; D52 – D56) Mycophenolate mofetil (500mg twice a day) (D49 –) Rituximab (375mg/m2 IV) (D47, D71, D78, D88)	22 days 80 days (to partial recovery of GBS)

Abbreviation: PD-L1, programmed death-ligand 1; MEK, mitogen-activated protein kinase kinase; HER-2, human epidermal growth factor receptor-2; IHC, immunohistochemistry; TC, tumor cell; IC, immune cell; CSF, cerebrospinal fluid; P, polymorphonuclear cell; L, lymphocyte; O, other cells; mPd, methylprednisolone; IVIG, intravenous immunoglobulin; GBS, Guillain-Barré syndrome;

*VENTANA PD-L1 (SP142) Assay (Ventana Medical Systems Inc., Tucson, AZ)

Conclusions
irME associated with ICI develops early after the first dose given within two weeks. The natural course varies and fatal. The prompt use of high dose steroid and IVIG treatment after exclusion of infectious cause might be essential for neurologic recovery.

eP688
TOXICITIES WITH CONCURRENT CHEMORADIATION USING WEEKLY CISPLATIN IN LOCALLY ADVANCED HEAD AND NECK CANCERS

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Introduction
Head and neck cancers constitute 6% of cancers worldwide. The management requires a multidisciplinary approach. Concomitant chemoradiotherapy with cisplatin is the standard approach for locally advanced head and neck cancers but increases toxicities. The most commonly used regime uses three weekly cisplatin which is more toxic. Low-dose once-a-week cisplatin is substituted because of perceived lower toxicity and convenience in a low resource country like India.
Methods
Squamous cell carcinoma of stage III, IVA and IVB of oropharynx, hypopharynx and larynx were studied for one year. 82 patients were studied. Total dose of radiation was 66Gy/33#/6 ½ weeks from Monday to Friday with inj. Cisplatin 40mg/m^2 i.v. infusion weekly. Acute skin, mucosal, pharyngeal, laryngeal and salivary reactions were carefully monitored during treatment.
Results
88% of patients were able to complete five or more weekly chemotherapy cycles with cumulative dose of 200mg/m2. Grade 2 and 3 acute toxicities were seen with weekly cisplatin but were conservatively managed. Grade 2 oral mucositis was the most common and was seen in 67% of patients. Similarly Grade 2 skin and pharyngeal toxicities were seen in 66% and 65.6% of patients respectively. Due to toxicities treatment was interrupted for some patients and some required nasogastric tube feeding.
Conclusions
Painful oral mucositis and skin reactions interfere with further treatment options and impairs patients quality of life. Also, acute toxicities lead to various treatment interruptions which affects the response.

eP689
DISCOVERY OF PYRAZOLO[4,3-C]QUINOLINE DERIVATIVES AS SELECTIVE BACTERIA BETA-GLUCURONIDASE INHIBITORS TO SUPPRESS CHEMOTHERAPY-INDUCED INTESTINAL TOXICITIES

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Introduction
Glucuronidation represents a major route of drug detoxification in human. However, deconjugation of glucuronides by bacteria beta-glucuronidase in the intestinal microflora can induce severe toxicity during cancer chemotherapy. The currently used anticancer drugs such as irinotecan (CPT-11), 5-FU, and oxaliplatin have been found to induce a serious side effect of chemotherapy-induced diarrhea (CID). CID is a common problem, especially in patients with advanced cancers. Therefore, discovery of selective bacteria beta-glucuronidase inhibitors is in an urgent need.
Methods
1-((6,8-Dimethyl-2-oxo-1,2-dihydroquinolin-3-yl)methyl)-3-(4-ethoxyphenyl)-1-(2-hydroxyethyl)thiourea (KA-1) [Wallace B.D. *et al. Science* **2010**, *330*,

831-835] was identified by high-throughput screening (HTS) as the most potent and selective beta-glucuronidase inhibitor with an IC_{50} value of 620 nM. We have also discovered 3-amino-4-anilino-1*H*-pyrazolo[4,3-*c*]quinoline (KB-2) [Cheng K.W. *et al. J. Med. Chem*., **2017**, *60*, 9222-9238] as a selective beta-glucuronidase inhibitory agent, with an IC_{50} value of 130 nM which is approximately five-folds more active than that of KA-1.

Results

KB-2 was selected as a hit compound for further structural modification. We have synthesized, assayed, and identified certain pyrazolo[4,3-*c*-]quinoline derivatives which exhibited more potent bacteria beta-glucuronidase inhibitory activity than that of KB-2. These highly active and selective beta-glucuronidase inhibitors may serve as potential drug candidates to prevent CPT-11-induced intestinal damage and diarrhea.

Conclusions

We have discovered certain pyrazolo[4,3-*c*]quinoline derivatives as potential drug candidates to reduce chemotherapy-induced intestinal damage.

eP690

PATIENT-REPORTED OUTCOMES ITEM SELECTION FOR BLADDER CANCER PATIENTS IN CHEMO- OR IMMUNOTHERAPY

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Introduction

Selection of specific patient-reported outcomes(PROs) for cancer patients requires careful thought to the purpose and population at aim. Here we report the process of choosing which Patient-Reported Outcomes Version of the Common Terminology Criteria of Adverse Events(PRO-CTCAE) symptoms for a bladder cancer population in chemo- or immunotherapy.

Methods

PRO-CTCAE symptoms were chosen through 1) journal audit 2) interviews and 3)summary of product characteristics from European Medicines Agency and Food and Drug Administration for the applied chemo- and immunotherapies. The selected questions were applied in a prospective cohort of 78 bladder cancer patients receiving chemo- or immunotherapy at Rigshospitalet and Herlev Hospital, Denmark. Symptoms were included in the final module if included in ≥3 of the following groupings a) the most frequent PRO-CTCAE symptoms overall during treatment b) the PRO-CTCAE symptoms reported in conjunction with hospital admissions or mentioned in focus group interviews discussing which symptoms were prevalent in this patient group with specialized c) nurses or d) physicians. Symptoms were also included if they were present in two of the above groups and defined as actionable by clinicians.

Results

From the initial selection of PRO-CTCAE symptoms a total of 45 PRO-CTCAE symptoms explored by 84 PRO-CTCAE questions were retrieved. Through the second selection process, the study group agreed on 15 PRO-CTCAE symptoms explored by 30 PRO-CTCAE items to be appropriate and relevant for the bladder population during medical oncological treatment.

Conclusions

The selection of disease specific PROs was feasible. The process revealed many necessary steps towards a final module for clinical application.

eP691

QUALITY OF LIFE IN CANCER PATIENTS RECEIVING CANCER IMMUNOTHERAPY: WHAT DO WE KNOW?

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Introduction

Checkpoint inhibitor immunotherapeutics (ICIs) are increasingly used to treat cancer, but comparatively little is known about patient-reported outcomes (PROs) and health-related quality of life (HRQoL) for this population. We performed a systematic review to examine PROs and HRQoL among cancer patients receiving ICIs.

Methods

We searched PubMed, CINAHL, Embase, Web of Science, and Scopus for articles on August 7, 2018 and extracted relevant references. Eligible articles were required to involve cancer patients treated with ICIs and to report PRO and/or HRQoL data.

Results

We screened 1,453 abstracts and 88 full texts, including 15 articles representing 15 randomized controlled trials in our analysis. Studies included a variety of cancer types (melanoma, lung, genitourinary, and head/neck cancers), utilized four different ICIs (nivolumab, pembrolizumab, atezolizumab, and ipilimumab), and compared ICIs to a wide range of other therapies (chemotherapy, targeted therapies, other immunotherapies, or placebo). In general, patients receiving ICIs had similar-to-improved overall HRQoL to patients in the comparison arms. In contrast, high rates of clinician-reported adverse events requiring treatment interruption/discontinuation of ICIs were noted in some trials, suggesting a possible discordance between patient-reported and clinician-reported experience with ICI treatment.

Conclusions

Despite the high profile and broad clinical trials experience of ICI therapies across cancer types, relatively few randomized studies reported patient PROs and HRQoL data. Available data suggest that the therapies are well-tolerated in terms of HRQoL compared to other anticancer therapies although the conclusions are limited by the heterogeneity of studies and instruments. Currently used instruments may fail to capture important symptomatology unique to ICIs.

eP692

EVALUATION OF THE CORTICOSTEROIDS BUDESONIDE AND DEXAMETHASONE TO TREAT NERATINIB-INDUCED DIARRHEA IN RATS

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Introduction

Neratinib is a pan-ErbB tyrosine kinase inhibitor, used for treatment of HER2+ breast cancer, with diarrhea frequently observed. Our previously developed rat model for neratinib-induced diarrhea indicated diarrhea pathogenesis includes anatomical disruption and intestinal inflammation. We showed the corticosteroid, budesonide, reduces diarrhea. This study aimed to evaluate whether another corticosteroid, dexamethasone, could also effectively reduce neratinib-induced diarrhea in rats.

Methods

Male Albino-Wistar rats (n=64) were orally gavaged daily for 14 or 28 days with 50 mg/kg neratinib or vehicle control (5% DMSO/1% carboxymethylcellulose). One group was additionally gavaged with 1 mg/kg budesonide daily, and another group every second day with 0.1 mg/kg dexamethasone. Diarrhea was graded 4x daily and blood neratinib concentration was assessed via mass spectrometry. ErbB1 expression was measured by Western blot.

Results

In contrast to budesonide, neratinib-induced diarrhea was not significantly reduced by dexamethasone. Rats receiving dexamethasone had significantly less weight gain than other groups. Dexamethasone increased serum neratinib concentration from day 14 compared to neratinib alone

(p<0.05), whereas budesonide caused no change. Western blot showed total ErbB protein was increased in the distal ileum of dexamethasone and budesonide groups compared to neratinib (p<0.005).

Conclusions

Dexamethasone failed to reduce diarrhea, caused growth suppression, and higher serum neratinib concentration. The impact on intestinal ErbB1 expression was consistent for both budesonide and dexamethasone, indicating the protective effects of budesonide are not mediated by upregulated ErbB1 expression. This model suggests locally acting corticosteroids, such as budesonide, are favorable in reducing diarrhea from neratinib. Further studies are warranted to determine underlying mechanisms of protection.

eP693

THE IMPORTANCE OF TIMELY RECOGNITION OF SYMPTOMS AND THEIR MANEGEMENT: A CASE REPORT OF FATAL CARDIAC TOXICITY OF PEMBROLIZUMAB

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Introduction

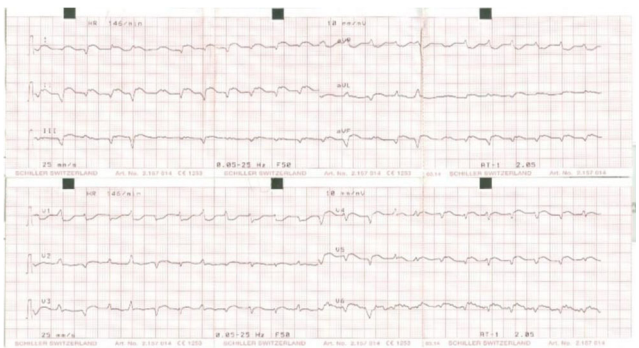
Immune-related adverse effects (irAEs) of check-point inhibitors are specific and a result of overstimulation of the immune system. Myocarditis is a rare irAE of immunotherapy, with 8% fatality rate (Wang et al.). Awareness of irAEs among patients undergoing immunotherapy is a topic of great importance.

Methods

We present a case of fatal irAE myocarditis in a lung cancer patient treated with pembrolizumab

Results

A 40-year old female patient with no cardiac comorbidities presented on day 10 cycle 5 of pembrolizumab to a local emergency department with severe epigastric pain, nausea and dyspnea (CTC gr.3). Thoracocentesis was performed due to pleural effusion, with a marginal improvement of symptoms. No ECG was done at that time. She presented to our team a full four days later with worsening dyspnea and epigastric pain, CTC gr.3, elevated cardiac and liver enzymes, CTC gr.4. and hypotension. ECG finding (figure 1) indicated urgent transfer to a cardiac unit.



Echocardiogram showed acute heart failure, ejection fraction less than 30% and global hypokinesis. By exclusion of pulmonary embolism, myocardial infarction and pericardial effusion, a probable diagnosis of immune-related myocarditis was made. Treatment with methylprednisolone 1mg/kg and intensive cardiac support was initiated. Her condition was rapidly worsening and she died six days after onset of symptoms. Autopsy was not performed

Conclusions

Education of all parties involved in the care of oncological patients is imperative for the timely recognition of irAEs and the start of appropriate therapy. Early recognition of irAEs and commencement of therapy is crucial to achieving a favorable outcome.

eP694

COULD PHYSICAL EXERCISE PREVENT ANTHRACYCLINE-RELATED CARDIOTOXICITY IN BREAST CANCER PATIENTS? RATIONALE AND DESIGN OF A INTRA-HOSPITAL RANDOMIZED CONTROLLED TRIAL

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Introduction

Cardiotoxicity is a known concern of anthracycline-containing chemotherapy (AC-CT), limiting treatment options and contributing to morbidity/mortality among breast cancer survivors. Physical exercise (PE) has been suggested as a non-pharmacological approach able to mitigate this issue, but its real value is yet to be proven.

Methods

This is a study protocol for a two-arm prospective randomized controlled trial that will analyse the cardioprotective effect of a PE program in the prevention of anthracycline-related cardiotoxicity. This study received ethics approval and is registered on International Standard Randomised Controlled Trial Number: ISRCTN32617901. Ninety women with early breast cancer and therapeutic decision to receive AC-CT, will be randomly assigned (1:1) to an intervention group or a control group. Patients in the intervention group will perform a 3-weekly PE program combining resistance and aerobic training with progressive intensity during AC-CT. The control group will receive usual cancer care. Resting left ventricular (LV) global longitudinal strain (GLS) and resting LV ejection fraction (LVEF) will be assessed at: 1-14 days prior the start of the AC-CT (M1); 1-5 days after the end of the AC-CT (M2) and 3 months after M2 (M3). To analyse N-terminal pro-B-type natriuretic peptide, blood samples will be collected at M1, M2, M3 and 24 hours before each anthracycline cycle. Cardiorespiratory fitness will also be assessed at M1, M2, M3, by a cardiopulmonary exercise test on a treadmill.

TRABALHO DE INVESTIGAÇÃO

145/2018-1

"Efeitos do exercício físico na funcionalidade cardíaca de mulheres com cancro da mama durante a quimioterapia"

INSTITUIÇÃO /SERVIÇO – Oncologia Médica / Universidade da Beira Interior

INVESTIGADOR: Pedro Miguel Silva Antunes

PARECER DA CES - emitido na reunião plenária de 19 / 11 / 2018

Nada a opor do ponto visto ético

Documentos analisados:

- Analisada a informação suplementar

O Presidente da CES

Remetido ao Secretariado da Comissão de Ética em 19 / 11 / 2018

11**Results**
(not aplicable)
Conclusions
We expect this study, using novel clinical biomarkers, will add new knowledge and contribute to clarify the role of PE at counteracting anthracycline-related cardiotoxicity.

eP695
ASSESSMENT OF RADIATION INDUCED PNEUMONITIS IN BREAST CANCER PATIENTS: A SYSTEMATIC REVIEW

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Introduction
Lung complications and general toxicities of the respiratory system are relatively common following radiotherapy of thoracic tumors. In breast cancer (BC) patients, lung complications as a result of radiotherapy are grouped according to two major clinical syndromes: acute effects such as radiation pneumonitis (RP), or long-term effects. We aim to review existing literature on the assessment tools used to classify and diagnose RP.
Methods
We searched the Medline, Embase, and Cochrane Central databases for studies conducted in the English language, reporting on RP assessment. Keywords including "breast cancer", lung toxicity", "pneumonitis", and "radiation injury" were used.
Results
A total of 97 articles were included in this review. Overall, 48.0% (n=47) of studies used the Common Terminology Criteria for Adverse Events (CTCAE), 17.3% (n=17) used pulmonary function testing, 15.5% (n=15) studies used Normal Tissue Complication Probability (NTCP), 13.4% (n=13) studies used the Radiation Therapy Oncology Group (RTOG) scale, 5.2% (n=5) studies used the Late Effects Normal Tissue Task Force-Subjective, Objective, Management, Analytic (LENT-SOMA) scale, 3.1% (n=3) studies used thoracic CT scans, 2.1% (n=2) studies used a patient reported symptoms scale, and 1.0% (n=1) of studies used a Quality of Life scale. 6.2% (n=6) of studies used a combination of the above assessment tools to assess RP (Table 1).

Table 1. Radiation induced pneumonitis assessment tools used in included studies.

Assessment Tool	No. of studies	Percentage
CTCAE	47	48.0
• Version 4	24	24.7
• Version 3	19	19.6
• Version 2	4	4.1
PFT	17	17.3
NTCP	15	15.5
RTOG	13	13.4
LENT-SOMA	5	5.2
CT Scans	3	3.1
Patient Reported Symptoms	2	2.1
QoL Scale	1	1.0
CTCAE and RTOG	1	1.0
CTCAE and LENT-SOMA	1	1.0
CTCAE and NTCP	1	1.0
LENT-SOMA and PFT	1	1.0
CT Scans and PFT	2	2.1

CTCAE, Common Terminology Criteria for Adverse Events; PFT, Pulmonary Function Test; NTCP, Normal Tissue Complication Probability; RTOG, Radiation Therapy Oncology Group; LENT-SOMA, Late Effects Normal Tissue Task Force-Subjective, Objective, Management, Analytic; CT, Computerized Tomography; QoL, Quality of Life

Conclusions
Radiation induced pneumonitis in BC patients remains a prevalent issue, with varying definitions and assessment tools used. A better understanding of lung toxicities as a result of BC treatments may help identify potential risk factors, prevention techniques, and assessment strategies for future diagnoses.

eP696
CASE REPORT: MYXEDEMA COMA AS A COMPLICATION OF CANCER TREATMENTS

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Introduction
Myxedema coma is a sever decompensated hypothyroidism that associated with high mortality. Cancer treatment of squamous cell carcinoma of head and neck tumor usually includes combination of radiotherapy and chemotherapy. The risk of hypothyroidism due to this therapy is reported in few number of studies.
Methods
55 years old male patient's with a history of squamous cell carcinoma treated with cisplatin cetuximab combination few months ago. The patient admitted to the hospital due to shortness of breath, confusion, low body temperature and swelling of the body especially the face, tongue and lower legs. Final diagnosis of respiratory failure, myxedema coma and cardiogenic shock were documented, TSH 52 (mIU/L), HR: 63/ min, SPO_2: 94 and BP: 60/40 mmHg. Noradrenaline infusion, 80 mg prednisone and 300 mg levothyroxine tablet (through nasal tube) were given. The patient's TSH started to decrease after few days, so levothyroxine dose decreased to 100 mg and noradrenaline infusion stopped. Few days later the TSH level increased again and the dose of levothyroxine increased to 150 mg. By reviewing the medication chart the patient started pantoprazole in these few days which affected levothyroxine bioavailability.
Results
Pantoprazole stopped and famotidine described to the patients to be taken 2 hours after levothyroxine. Twenty days later the TSH level retained to normal value 1.7 (mIU/L).
Conclusions
Combination therapy of cisplatin + Ceutiximab in head and neck cancer patients may associated with severe hypothyroidism. Early diagnosis and follow up of these patients may save their life and prevent the life threatening myxedema coma.

eP697
INVOLVEMENT OF OREXINERGIC AND HISTAMINERGIC SYSTEM IN THERAPEUTIC EFFECT OF HISTAMINE H4 RECEPTOR ANTAGONIST AGAINST CISPLATIN-INDUCED ANOREXIA

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Introduction
We report that hypothalamic tumor necrosis factor-α (TNF-α) mRNA expression via histamine H4 receptors contributes to cisplatin-induced anorexia (Neurosci Lett. 676: 103–107, 2018), but its precise mechanisms remain unclear. It has been reported that orexin is a neuropeptide that regulates appetite via the histaminergic system in the hypothalamus, and the administration of TNF-α impairs the orexinergic system. We investigated the involvement of orexinergic and histaminergic system in the therapeutic effect of an H4 receptor antagonist against cisplatin-induced anorexia.
Methods
Mice received cisplatin and JNJ7777120 (an H4 receptor antagonist) with or without pretreatment with JNJ10397049 (an orexin OX2 receptor antagonist), then their food intake was monitored. Additionally, we

examined the effect of YNT-185 (an OX2 receptor agonist), ciproxifan (a histamine H3 receptor inverse agonist), or VUF5681 (an H3 receptor antagonist) on cisplatin-induced anorexia. Finally, we investigated the effect of JNJ7777120 on the cisplatin-induced hypothalamic expression of prepro-orexin (PPO) mRNA, which encodes precursors of orexin.

Results

Although the pretreatment with JNJ7777120 completely abolished cisplatin-induced anorexia in mice, its therapeutic effect was antagonized by JNJ10397049. We observed that both YNT-185 and ciproxifan also inhibited the cisplatin-induced anorexia, but we found that the inhibitory effect of the YNT-185 was antagonized by VUF5681. Cisplatin decreased the hypothalamic expression of PPO mRNA and the period of expression decreased in parallel with the onset of anorexia: however, the pretreatment with JNJ7777120 inhibited the decrease in expression.

Conclusions

The activation of the orexinergic and histaminergic pathway is involved in the therapeutic effect of an H4 receptor antagonist against cisplatin-induced anorexia.

eP698
ALL-TRANS RETINOIC ACID SYNDROME (ATRA): A CASE REPORT

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Introduction

Acute myeloid leukemia (AML) is a hematological malignancy associated with life-threatening coagulopathy. All trans retinoic acid (ATRA) therapy is one of the treatment approaches of AML M3. Acute respiratory failure may occur in patients receiving ATRA therapy, which require close monitoring for respiratory function in patients receiving this medication.

Methods

A 34 year old female admitted to intensive care unit with dsypnea. The patient have previous history of AML M3. After first ATRA treatment, she suffered from hypoxia, respiratory failure and transfered to the intensive care unit (ICU). Hemodialysis and plasmapheresis were applied alternately during the treatment for cytokine removal. Mechanical ventilation and drug therapy were started.

Results

The patient's hemoglobin, Oxygen saturation and blood pressure returned to normal after mechanical ventilation support, antihypertensive therapy, nutritional support with Total Parenteral Nutrition, antibiotic therapy and erythrocyte suspension replacement therapy for low hemoglobin and hematocrit level.

Conclusions

It should be considered that ATRA can cause respiratory problem such as life-threating Acute Respiratory Distress Syndrome. Close monitoring and respiratory assessment must be done. Early intervention and discontinuation of ATRA may be life saving in this group of patients.

eP699
LORATADINE FOR PACLITAXEL-INDUCED MYALGIAS AND ARTHRALGIAS

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Introduction

Paclitaxel is a commonly prescribed antineoplastic agent. Unfortunately, 70% of patients who receive this drug develop diffuse myalgias and arthralgias. Several attempted palliative approaches, including opioids, have not shown efficacy in treating these symptoms. However, based on anecdotal reports, loratadine appears to merit further study.

Methods

We screened medical records and then reviewed in depth postoperative ovarian and endometrial cancer patients who received concurrent paclitaxel and loratadine between January 1st, 2001 and December 31st 2017.

Results

Eight hundred sixty-two patients were administered post-operative paclitaxel; 40 received concurrent loratadine and are the focus of this study. The median age of this group was 61 years (range: 40, 79). Twenty-seven (67%) had ovarian cancer, and the rest endometrial cancer. Eight experienced paclitaxel-induced myalgias and arthralgias and then took loratadine. Of these, 6 (75%; 95% confidence interval (CI): 35-97%) manifested symptom improvement. Medical record documentation after loratadine revealed "the joint pain was better" and "the pain was not as bad as previously". Thirty-two patients were already receiving loratadine with paclitaxel. Of these, only 11 (34%; 95% CI: 19-53%) developed myalgias and arthralgias (in contrast to the previously-reported rate of 70%). No major adverse events were attributed to loratadine. Paclitaxel was not discontinued because of myalgias and arthralgias.

Conclusions

Our results support further study of loratadine for paclitaxel-induced myalgias and arthralgias.

eP700
CHARACTERIZING CHEMOTHERAPY-INDUCED PERIPHERAL NEUROPATHY ASSESSMENT AND MANAGEMENT DOCUMENTATION PATTERNS IN AMBULATORY ONCOLOGY CLINICS

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Introduction

Chemotherapy-induced peripheral neuropathy (CIPN) (e.g., numbness/tingling in hands/feet) is a common toxicity of neurotoxic chemotherapy (e.g., oxaliplatin, bortezomib, paclitaxel). Unmanaged CIPN negatively affects function and chemotherapy dosing. Yet, evidenced-based CIPN assessment and management guidelines/strategies are often poorly implemented into practice. The purpose of this analysis is to explore clinicians' CIPN assessment and management documentation patterns when providing care to patients receiving neurotoxic chemotherapy.

Methods

Data for this analysis originate from the usual care period (Period-I) of a two-period, pre/posttest study. Patients receiving neurotoxic chemotherapy for gastrointestinal or breast malignancies or multiple myeloma completed standardized CIPN surveys (e.g., Patient Reported Outcomes version of the Common Terminology Criteria for Adverse Events Numbness/Tingling items [PRO-CTCAE], 0-10 worst CIPN pain intensity) prior to three consecutive clinician appointments. At the third appointment, clinicians' documentation of CIPN assessment (e.g., numbness/tingling/pain) and management (e.g., chemotherapy dose modification, medicine) were abstracted from the medical record.

Results

Eighty-one patients and 45 clinicians were recruited. At the third appointment, 44/63 (69.8%) patients self-reported mild CIPN or worse (PRO-CTCAE numbness/tingling severity≥1/4). Of patients with CIPN, clinicians documented CIPN in 36/44 (81.8%, 90% CI:69.6-90.6%) notes and documented any type of management plan in 17/44 notes (38.6%; 90% CI:26.3-52.1%). Eighteen patients self-reported worst CIPN pain≥4/10, but none were offered duloxetine, the first line medication for painful CIPN.

Conclusions
While clinicians routinely documented CIPN assessment, CIPN management was suboptimal. In Period-II, we will explore how the implementation of a treatment algorithm delivered to clinicians will impact frequency of CIPN assessment documentation and adherence to evidence-based treatment guidelines.

eP701
THE GUT MICROBIOME AS AN INTERVENTION TARGET FOR NERATINIB-INDUCED DIARRHEA

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Introduction
Diarrhea is the most frequently observed adverse event of the oral, irreversible pan-HER tyrosine kinase inhibitor, neratinib. This study aimed to determine if neratinib changes gut microbial composition, and whether targeting these changes with probiotics useful in improving chemotherapy/ radiotherapy-reduced diarrhea, may also improve diarrhea here.
Methods
Cecal contents from Wistar rats treated daily with 50mg/kg neratinib (n=6) or vehicle (n=6) were taken to analyze bacterial composition by 16S pyrosequencing. A second study of 48 rats treated with 50mg/kg neratinib, and receiving concomitant $4x10^8$cfu VSL#3 (probiotic cocktail) or vehicle for 28 days, was conducted to examine the efficacy of probiotics for prevention of neratinib-induced diarrhea and intestinal injury.
Results
Compared to controls, rats receiving neratinib had a significantly lower Firmicutes:Bacteriodetes ratio (P=0.041) and levels of the genus *Blautia* (P=0.001). Neratinib treatment was also associated with higher levels of the genus *Prevotella* (P=0.026) (Table 1). Levels of these groups compared to control levels were not correlated with diarrhea severity. In the second study, rats treated with VSL#3 did not have significantly altered diarrhea or intestinal damage scores compared to neratinib alone (P>0.05) (Table 2).
Conclusions
Neratinib treatment caused changes to the cecal microbiome, increasing levels of *Prevotella* and decreasing *Blautia*. However, targeting these changes with a multi-species probiotic did not alter diarrhea levels. We are now exploring why the main genera in VSL#3 (*Streptococcus*, *Bifidobacterium* and *Lactobacillus*) were unable to alter the development of neratinib-induced diarrhea, when they have previously had positive results in models of chemotherapy and radiation-induced diarrhea.

eP702
OBSERVATIONS ON THE PATTERNS OF CHEMOTHERAPY RELATED SYMPTOMS DURING CHEMOTHERAPY

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Introduction
Patients with cancer experience various types of chemotherapy symptoms during chemotherapy. We investigated the pattern of chemotherapy related symptoms during neoadjuvant chemotherapy in patients with breast cancer.
Methods
This study is a prospective, observational study. In 184 patients who underwent a total of 8 neoadjuvant chemotherapy [Anthracycline+ Cyclophosphamide(AC) 4 cycle, docetaxel(D) 4 cycle] diagnoses of breast cancer, MDASI was identified 8 times before each session. The average MDASI subscale of each participant was plotted on a graph.
Results
The severity of nausea and vomiting increases at the beginning of AC administration and the pain, fatigue, insomnia, distress, dyspnea, memory loss, anorexia, drowsiness, dry mouth, sadness, and numbness increase from the D administration.
Conclusions
Depending on the type of chemotherapeutic agent and the time of administration, there is a change in chemotherapy induced related symptoms. Expectations for completion of chemotherapy appear to reduce the severity of chemotherapy induced related symptoms.

eP703
INCIDENCE AND POSSIBLE PREDICTORS OF CHEMOTHERAPY EXTRAVASATION IN SINGLE CANCER CENTER STUDY AT TERTIARY CARE HOSPITAL

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Introduction
Although extravasation (EV) is an established complication of parental chemotherapy, it often goes under-documented and underestimated. The incidence and severity of extravasation can be influenced by patient, drug or procedure related factors. An understanding of the risk factors and predictors promotes precaution during chemotherapy.
Methods
A prospective study was conducted for one year in patients satisfying study criteria. Patient information such as demographics, history, disease, treatment regimen and EV related information was documented. Severity of EV was established using CTCAE 4.3. The captured data was subjected to appropriate statistical analysis using SPSS ver. 20.
Results
Among the 217 patients reviewed 46(21.20%) experienced EV [Grade 2(67.39%) and Grade 3(32.61%)]. Cluster statistics revealed age, gender and ambulation to be the most important predictors. Ambulation caused an 8 fold increase in the risk of EV (p<0.001, [2.01-14.2]). Females were observed to be 2.5 times susceptible to EV (p=0.001, [2.5-5.9])than males. Progressive age i.e. beyond 60 years the risk of EV increases 2.02 times (p=0.005, [1.3-3.8]).Additionally, age (p=0.007, OR: 2.24 [1.22-6.71]), sex (p=0.010, OR: 2.71 [1.38-7.64]), ambulation (p=0.001, OR: 4.67 [2.09-4.90], co-morbidities (p=0.029, OR: 3 [2.17-5.67] and the use of irritants (p=0.007, OR: 2.25 [1.27-3.76] increased the risk of the patient getting severe EV injury.
Conclusions
Patient, drug and procedure related risk factors influence the incidence of chemotherapy induced EV injury. In the studied population, age, gender, ambulation and co-morbidities were established as predictors of extravasation. Multi-disciplinary approach and patient counselling can contribute to minimizing the discomfort and complication of EV.

eP704
CHANGES OF PERIPHERAL BLOOD LYMPHOCYTE SUBTYPES IN PATIENTS WITH END STAGE CANCER ADMINISTERED LOCALIZED RADIOTHERAPY AND BOJUNGIKKI-TANG

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Introduction
Localized radiotherapy (RT) can cause immune dysfunction. Bojungikki-tang is known to restore immune function. We investigated the absolute counts and percentages of peripheral blood (PB) lymphocyte subtypes in end stage cancer patients before and after RT and after oral administration of Bojungikki-tang water extract (BJITE) and to evaluate the changes mediated by RT and BJITE.
Methods
Absolute counts and percentages of lymphocyte and lymphocyte subsets were determined in whole blood using the TetraONE System (Beckman Coulter, USA). Flow cytometry results were compared before and after RT and after administration of BJITE.
Results
Absolute numbers of CD3+, CD4+, and CD8+ T cells and CD19+ B cells decreased significantly after RT (). Absolute numbers of CD3-CD56+ cells did not change in both groups. No significant differences were observed in the absolute counts of lymphocyte subtypes before and after administration of BJITE or vitamin group. When BJITE group was compared with vitamin group, absolute numbers of CD19+ B cells increased. RT-induced decrease in T cells and B cells in PB suggests that immune deterioration occurs after RT. Administration of BJITE might be effective in the restoration of number of B cells.
Conclusions
In conclusion, RT-induced decrease in helper T cells, cytotoxic T cells, and B cells in PB suggests that immune deterioration occurs after RT. Administration of BJITE might be effective in the restoration of number of B cells.

eP705
CHEMOTHERAPY-INDUCED ACRAL ERYTHEMA: EVALUATION OF EFFICACY AND SAFETY OF TOPICAL COX- INHIBITOR

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Introduction
Acral erythema is a commonly reported side effect during chemotherapy, pathogenically related to a toxic reaction. Still controversial the reason why the acral site is the most frequent affected area. It is most frequently linked with capecitabine treatment, but a large number of other chemotherapeutic agents have been reported. In its pathogenesis, a fundamental role is played by a conspicuous overexpression of Cyclooxygenase-2 (COX-2) due to the toxic damage of basal keratinocytes, followed by an increased production of prostaglandins and free radicals, with maintenance of the inflammatory process. Therefore, the use of a systemic COX inhibitor in the treatment of acral erythema is suggested in literature. Considering that COX inhibitors are not free of side effects, the aim of our study is to evaluate the efficacy and safety of topical COX-inhibitor.
Methods
Ten oncological patients, affected by different cancers and receiving distinct chemotherapy protocols, were referred to our Department for the development of chemotherapy-induced acral erythema. We instructed the patients on applying diclofenac gel topically twice-daily for fifteen days, followed by a one-daily application for another fifteen days.
Results
A reduction of erythema, edema, pain and burning sensation was observed in all patients. No cutaneous or systemic adverse events were detected.
Conclusions
Our results are encouraging and the therapy was well-accepted by patients due to its topical application. The use of topical COX inhibitor may be proposed, in order to reduce anti-inflammatory process and production of Cyclooxygenase from damaged keratinocytes. However, further investigation and more clinical experiences are requested.

eP706
THE EFFECT OF PERCEIVED SOCIAL SUPPORT ON CHEMOTHERAPY RELATED SYMPTOMS IN PATIENTS WITH BREAST CANCER

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Introduction
Social support is important in the cancer treatment process. However, there is no study of the effect of perceived social support(PSS) on chemotherapy related symptoms. Therefore, we examined the effect of PSS on chemotherapy related symptoms.
Methods
This study is a prospective, observational study that periodically assessed chemotherapy related symptoms from the time of diagnosis of breast cancer to 6 months after the end of neoadjuvant chemotherapy. In 184 patients with breast cancer, Multidimensional Scale of perceived social support(MSPSS) was assessed before the first neoadjuvant chemotherapy, and M.D. Anderson Symptom Inventory(MDASI) was assessed 8 times before neoadjuvant chemotherapy. The MSPSS score was divided into the MSPSS low group and the moderate to high group. The MDASI scores were analyzed by linear mixed model to determine the difference between the two groups until the end of the chemotherapy.
Results
In the ongoing chemotherapy, Severity of pain($p=0.002$), nausea($p=0.011$), insomnia($p<0.001$), distress($p=0.001$), dyspnea($p=0.005$), memory loss($p=0.018$), sadness(0.042), vomiting($p=0.014$), numbness($p=0.010$) were higher in the low level of MSPSS group($n=62$) than in the moderate to high level of MSPSS group($n=122$).
Conclusions
Low PSS patients with breast cancer suffered more distress due to chemotherapy related symptoms. Further studies are needed to determine whether PSS intervention can help improve chemotherapy-related symptoms.

eP707
CARDIAC SAFETY AND LONG-TERM SURVIVAL BENEFIT OF NEOADJUVANT LIPOSOMAL DOXORUBICIN, DOCETAXEL, AND TRASTUZUMAB IN HER2-OVEREXPRESSING BREAST CANCER. A RETROSPECTIVE AND MULTICENTER ANALYSIS.

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Introduction
The addition of human epidermal growth factor receptor 2 (HER2) antibodies to anthracycline-taxane-based neoadjuvant chemotherapy (NACT) for the treatment of HER2 expressing breast cancer (BC) resulted in improved pathologic complete response (pCR) rates. However, cardiac toxicity and long-term outcome is rarely investigated.
We report cardiac safety, pCR-rate and data on disease-free (DF) and overall survival (OS).
Methods
83 patients with HER2 positive early BC were treated with liposomal doxorubicin (50 - 60 mg/m^2), docetaxel (75 mg/m^2) and concurrent with

trastuzumab 8 mg/kg (cycle1), 6mg/kg (cycle 2-6) in 3 oncologic centers in Austria before surgery. We investigated cardiac toxicity, clinical response rates, long-term survival rates with a median follow up of 6.3 years.

Results

Median left ventricular ejection fraction (LVEF) was 60% before and nearly unchanged during treatment; only one patient (1.6%) was observed with a reduction of LVEF during neoadjuvant treatment.

Overall pCR rate was 47% (39 patients) after 6 cycles of NACT combined with trastuzumab. Response rates in breast and/or lymph nodes was a strong and significant predictor of disease free survival (DFS). In detail, patients with pCR showed a 5-year DFS of 100% whereas patients with residual disease in breast or nodes exhibited a 5-year DFS of 87% (p=0.001). 5-year OS was 100% in patients with pCR vs. 93% in patients with residual disease (p=0.24).

Conclusions

Patients treated for HER2 positive breast cancer with anthracycline-taxane-based NACT in combination with trastuzumab exhibited excellent response rates which was associated with an outstanding long-term survival while cardiac toxicity was a rare complication.

eP708

ACUTE AND LATE TOXICITIES IN THE MANAGEMENT OF MALIGNANT THYMOMAS AFTER SUBTOTAL RESECTION, CHEMOTHERAPY AND RADIOTHERAPY

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Introduction

The therapy of malignant thymomas after subtotal resection using chemotherapy and/or radiotherapy is controversial.

Methods

All patients (39) underwent subtotal resection. 16 patients (41%) were treated with adjuvant radiotherapy (RT) only (group A). 23 patients (59%) were treated with the sequence of chemotherapy (CT) and conformal radiotherapy (3D-CRT), (group B). The CT regimens consisted of doxorubicin + cisplatin + cyclophosphamide ± vincristine). Acute toxicities (acute eosophagitis-AE, radiation pneumonitis-RP) and late toxicities (lung fibrosis-LF, heart failure-HF) were classified according to CTC v 3.0. RP were softened by oxygenotherapy, antibiotics, corticosteroids and pentoxifylline (PTX). Pentoxifylline (400 mg) was administered orally tid in patients with RP grade 3/4.

Results

AE of grade 1/2 was observed in 1 (6%) and 5 (21%) patients and grade 3/4 in 2 (13%) and 7 (30%) patients in groups A vs B. RP of grade 3/4 was observed in 2 (13%) and 10 (43%) patients in groups A vs B. Median time to recover RP grade 3/4 was 4.9 months in patients without PTX vs 2.7 months in patients using PTX. LF were observed in 3 (19%) and 10 (43%) patients in groups A and B, respectively. HF was diagnosed in 1 (4%) of 23 patients in group B. Median time to tumor progression in group B was 51 months in comparison with 21 months in group A (p=0.0001).

Conclusions

Intensive adjuvant treatment after subtotal resection leads to an improvement of the local control of this disease. AE and RP were not too serious. Manifestation of LF and HF was acceptable.

eP709

UNCOMMON AND POTENTIALLY LIFE-THREATENING COMPLICATIONS FROM THE IMMUNE CHECKPOINT INHIBITOR NIVOLUMAB AT AN ONCO-HOSPITALIST INPATIENT SERVICE

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Introduction

Immune checkpoint inhibition augments the immunologic reaction against tumor cells in several cancer types, with improved survival in various malignancies, but increased autoimmunity as side effects. These conditions are collectively called immune-related adverse events (irAEs).

Methods

We report on selected uncommon high-grade potentially life-threatening toxicities encountered in three patients with metastatic squamous cell carcinoma of the lungs who received the anti-PD-1 agent nivolumab.

Results

Case #1: 76 years-old man who developed edema with elevated troponin T, NT-ProBNP, and an AV block one week after his third dose of nivolumab. His workup was consistent with myocarditis, treated with high doses of corticosteroids, plasmapheresis, infliximab (anti-TNF-alpha), and rituximab (anti-CD20) to further suppress both T and B cells.

Case # 2: 66 years-old woman who developed progressive symmetric lower extremities weakness and hyporeflexia nine days after her second dose of nivolumab. She developed a Guillain-Barre like syndrome, acute inflammatory demyelinating polyradiculoneuropathy (AIDP) variant, and received five doses of IVIG with excellent results.

Case # 3: 69 years-old man with progressive muscle weakness, dysphagia, ptosis and difficulties holding his head up one week after his third dose of nivolumab. He had myositis and myasthenia gravis, which were successfully treated with high doses of corticosteroids and five doses of IVIG.

Conclusions

Although rare, fulminant and fatal toxic effects may present with immune checkpoint inhibition. Knowledge about these conditions expedites the ability of the practitioner to properly manage them, therefore ensuring the best possible outcomes. Some high-grade irAEs with nivolumab are managed with corticosteroids and other immune modulating agents.

eP710

PROGNOSTIC AND PREDICTIVE FACTORS ASSOCIATED WITH IPILIMUMAB RELATED ADVERSE EVENTS: A RETROSPECTIVE ANALYSIS OF 11 NCI SPONSORED IPILIMUMAB PHASE I CLINICAL TRIALS.

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Introduction

Immune checkpoint inhibitors have radically changed the outcome for several cancers including lung cancer, melanoma, renal cell carcinoma, bladder cancer or head and neck carcinoma. We review factors affecting ipilimumab associated toxicity in various National Cancer Institute (NCI) sponsored phase I clinical trials.

Methods

NCI sponsored phase I clinical trials evaluating ipilimumab were retrospectively reviewed after an IRB approval.

Results

373 patients from 11 phase 1 clinical trials were analysed. Grade 3 and 4 adverse events (AEs) were associated with better radiological responses. Mean grade 3 and 4 AEs in CR+PR cohort was 1.167 vs 0.645 in non-responder cohort (p=0.001). No significant differences in low or high grade AEs were noticed in study cohorts differentiated based on ECOG PS (0 vs 1/2). Pretreatment lymphocyte count, LDH or albumin was not predictive of increased ipilimumab associated toxicity. Ipilimumab associated grade 3 and 4 toxicity was directly associated with the number of concurrently used study agents used. Mean grade 3 and 4 AEs were as follows in following cohorts: Ipi alone; 0.631 vs Ipi+ 1 drug; 0.877 vs Ipi+ 2 drugs; 1.408 (p=0.0035). Low grade (grade 1 and 2) toxicity was

associated with duration of treatment. r=0.456 (p<0.0001). High grade (grade 3 and 4) toxicity was not associated with duration of treatment with ipilimumab. r=0.032 (p=0.546).

Conclusions

Ipilimumab associated grade 3 and 4 toxicity predicts response to therapy and is associated with higher CR/PR. Addition of two or more antitumor agents to ipilumumab has potential to cause a significant increase in serious AE's.

eP711
EVALUATING THE IMPACT OF TREATMENT, DISEASE BURDEN AND DISEASE STATUS ON QUALITY OF LIFE AMONG PATIENTS DIAGNOSED WITH NEUROENDOCRINE TUMORS.

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Introduction

Neuroendocrine tumors are the solid tumors with malignant potential. The diagnosis and treatment of neuroendocrine tumor is a continuous distress for caregiver and patients. We aim to find the affect of treatment options and disease status on quality of life among those diagnosed with neuroendocrine tumors.

Methods

A survey was conducted in Sir Ganga Ram Hospital, Lahore from 2015-2018. A total of 500 patients were identified. Inclusion and exclusion criteria was made. Questionnaire was based on demographic and disease related questions. We investigated the impact of treatment on quality of life patients. The treatment options were surgery alone, surgery and somatostatin analogue, endoscopic resections and other treatments. Patients were asked about bowel movement frequency, appetite, sleep, fatigue etc.

Results

Out of 500 patients, 67% were female and male 33% were male. The most common symptom affecting the QOL was increased bowel frequency 74%, fatigue 67%, abdominal discomfort 52%, loss of appetite 47%, Patient Reported Outcomes Measurement Information System (PROMIS) revealed depression 39%, anxiety 27% and lethargy/ difficulty with physical activity 21%. We found poor QOL in 286/500 patients with ongoing treatment. In terms of disease status, patients with recurrence of tumor reported significantly higher ratio lethargy, depression and mental stress. Disease burden was correlated with QOL.

Conclusions

There is need to incorporate patients into the diagnosis and treatment process so that we can over come the effects of treatment options, disease burden and disease status on quality of life. This can only be possible through appropriate education and emotional support programmes.

eP712
TO EVALUATE ROLE OF A NOVEL PROTEIN ULLB-0005 IN BREAST CANCER

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Introduction

To evaluate cytotoxicity of ULLB-0005 on breast cancer cells as a new treatment option

Methods

ULLB-0005 is a protein derived from natural fungus with high binding specificity for carbohydrate antigen and strong apoptotic signal leading to death of cancer cells. For in vitro study, MDA-MB-231 cells were treated with ULLB-0005 at concentration ranging from 2.5-80 μg/mL. Following incubation, the cell cytotoxicity was estimated by MTT assay.

Results

Based on in vitro study, cytotoxicity was found to be 60.9% for ULLB-0005 and 50.2% for doxorubicin. In order to find if ULLB-0005 is cytotoxic to MDA-MB-231 cells, MTT assay was performed. The results demonstrated that ULLB-0005 is cytotoxic.

Conclusions

Based on in vitro data, ULLB-0005 is a potential anticancer drug for the treatment of breast cancer and will be a newer treatment available fro breast cancer

eP713
CONCOMITANT LIMB CRYOCOMPRESSION AND SCALP COOLING TO REDUCE PACLITAXEL-INDUCED NEUROPATHY AND ALOPECIA

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Introduction

Scalp-cooling is a recently approved therapy for chemotherapy-induced alopecia, while limb cryocompression is being developed to reduce chemotherapy-induced peripheral neuropathy (CIPN). We assessed feasibility, safety and tolerability of concomitant scalp-cooling and limb cryocompression.

Methods

Breast cancer patients receiving weekly paclitaxel chemotherapy underwent concomitant scalp cooling and cryocompression of all four limbs for the duration of their chemotherapy infusion (maximum 4 hours), for a maximum of 12 cycles. Limb cryocompression was administered at a constant cyclic pressure of 5-15 mmHg and temperatures starting at 11°C (established as lowest tolerable temperature in a healthy volunteer study), adjusted according to tolerance. Tolerability was assessed via various subjective tolerance scales, and CIPN was assessed via EORTC Quality of Life Questionnaire-CIPN20 before (QOL_{pre}), after completion (QOL_{post}) and 3-months post chemotherapy (QOL_{3m}).

Results

14 patients enrolled in the study, of which 9 have completed all 12 cycles of concomitant scalp-cooling and limb cryocompression during chemotherapy, with the rest currently ongoing therapy. None of the patients had intolerance to scalp-cooling. 7 patients completed 12 cycles of cryocompression at the lowest tolerable temperature of 11oC. 2 patients found 11oC intolerable and completed all 12 cycles at 17oC and 25oC respectively. 1 of the 14 patients withdrew at the 6th cycle, finding 25oC intolerable. Median QOLpre was 19 (range 17-19), QOLpost 20 (18-29) (p = 0.04, Wilcoxon signed-rank) and QOL3m was 19 (18-21) (vs QOLpre; p = 1).

Conclusions

Delivery of concomitant scalp-cooling and limb cryocompression is feasible, safe and tolerable. Validation studies are ongoing to establish efficacy of cryocompression.

eP714
HEALTH PROFESSIONALS' AWARENESS AND KNOWLEDGE ABOUT MEDICATION RELATED OSTEONECROSIS OF THE JAWS

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Introduction
Preventive measures and the correct management of Medication Related Osteonecrosis of the Jaws (MRONJ) have a positive impact on the quality of life in patients who use anti-resorptive (AR) and anti-angiogenic (AA) drugs, so knowledge about MRONJ by health professionals has been evaluated by some studies in the last decade.
Methods
The present study investigated, through the application of specific questionnaires to 1370 health professionals (1.032 dentists, 239 physicians and 99 oncology nurses), the knowledge and the awareness of the role of health professionals that assists these group of patients in the prevention and management of MRONJ and theirs perceptions of the importance of dentist in the care of these patients.
Results
In general, health professionals presents unsatisfactory knowledge about prevention measures, signs and symptoms of MRONJ, although the professionals who take care oncologic patients and with more professional experience present a tendency to a greater knowledge when compared to the others. Dentists who take care of oncologic patients have a greater knowledge about drugs side effects and definition of MRONJ and, for dentists and physicians the professional experience had a positive impact. A significant number of MRONJ diagnosis and follow-up were performed by dentists and physicians who take care oncologic patients and with more experience. The few knowledge about staging and therapeutic management in early and advanced stage were observed for physicians and dentists.
Conclusions
The findings shows that health professionals have low awareness and deficient knowledge regarding MRONJ, although most of them have contact with patients who use AR and AA.

eP715
RANDOMIZED CONTROLLED STUDY OF EXERCISE DURING CHEMOTHERAPY FOR CHEMOTHERAPY-INDUCED PERIPHERAL NEUROPATHY (CIPN) AND PHYSICAL FUNCTION

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Introduction
Over half of patients receiving taxane, platinum, or bortezomib chemotherapy experience CIPN—a dose-limiting toxicity with numbness, pain, and muscle problems in the extremities. This randomized pilot study explored whether exercise improves CIPN symptoms and physical function.
Methods
Nineteen patients to receive taxane, platinum, or bortezomib were randomized to exercise (home-based, low-moderate-intensity, walking+resistance training; EXCAP©®) or nutrition education (control) for 12 weeks upon first infusion. At 0, 6, and 12 weeks, we assessed CIPN symptoms via CIPN-20 sensory scale (9-36, higher is worse). We assessed physical function via leg strength (Biodex) and six-minute walk. Linear regression modeled each outcome, tested for effects of exercise, and controlled for baseline and age because controls were older. Because this is a pilot study, we present effect sizes, not p-values.
Results
The 19 patients were 65±11 years, 52% women, with cancer: 42% breast, 32% gastrointestinal, 16% myeloma, 10% genitourinary. Exercise mitigated CIPN symptoms. At 6 weeks, exercisers increased 11.0 to 12.5 whereas controls increased 11.0 to 15.5 (+1.5 vs. +4.5; ES=0.81). At 12 weeks, exercisers increased 11.0 to 14.8 whereas controls increased 11.0 to 16.2 (+3.8 vs. +5.2, ES=0.46). Exercisers improved leg strength vs. controls (ES=0.35 and 0.28 at 6 and 12 weeks) and six-minute walk distance at 6 weeks vs. controls (1,721 vs. 1,631 ft; ES=0.22) but walked slightly less than controls at 12 weeks (1,679 vs. 1,705; ES=-0.16).
Conclusions
Exercise during neurotoxic chemotherapy mitigated CIPN symptoms and improved physical function. Future work should test for replication with a larger sample. NCT03021174.

eP716
THE SPECTRUM OF CARDIAC IMMUNE-RELATED ADVERSE EVENTS ASSOCIATED WITH IMMUNE CHECKPOINT INHIBITOR THERAPY

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Introduction
Acute left ventricular (LV) dysfunction is a common manifestation of cardiotoxicity related to modern cancer treatment, including novel immunotherapies. As immune checkpoint inhibitor (ICI) therapy is increasingly used, different clinical forms of LV dysfunction are observed.
Methods
This case series was conducted at The University of Texas MD Anderson Cancer Center between January and December 2018. The institution's catheterization laboratory registry was searched for patients who underwent coronary angiography for suspicion of ICI cardiotoxicity.
Results
We present 3 cases of ICI-induced cardiotoxicity with a common denominator, an acute drop in LV ejection fraction, but with 3 different etiologies. Patient 1 is an 81-year-old woman with a history of myelodysplastic syndrome treated with nivolumab and ipilimumab who presented with dyspnea. Electrocardiography revealed nonspecific T-wave abnormalities and ventriculography was suggestive of apical Takotsubo stress cardiomyopathy. Patient 2 is an 82-year-old man with acute myelogenous leukemia treated with azacitidine and nivolumab presenting for worsening anxiety. Coronary angiography revealed triple vessel disease, the culprit of his systolic dysfunction, precipitated by ICI treatment. Patient 3 is a 68-year-old man on combination immunotherapy with durvalumab and tremelimumab for 1 month for metastatic pleomorphic gluteal sarcoma who presented for weakness and dyspnea. Myocardial strain measurement showed global hypokinesia and LV ejection fraction of 30%, suggestive of myocarditis.
Conclusions
ICI-induced cardiotoxicity may have heterogeneous clinical presentations. Suspicion for ICI-induced cardiotoxicity prompts a complete cardiovascular evaluation, including transthoracic echocardiography and global longitudinal strain. Clinicians must be aware of the potential risk for immune-related adverse events, including the various forms of cardiotoxicity.

eP717

SARCOPENIA IS NOT A PREDICTOR OF INCREASED TOXICITY OR IMPAIRED CHEMOTHERAPY RESPONSE IN METASTATIC NON-SMALL CELL LUNG CANCER

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Introduction

Sarcopenia is a negative prognostic factor in cancer patients and is widely determined by computed tomography (CT) measurement of muscle attenuation at the L3 psoas level. Previously we established that higher percentage of muscle attenuation correlated with lower metastatic burden and improved survival in metastatic non-small cell lung cancer patients (mNSCLC.) Here, we aim to evaluate if larger proportion of low muscle attenuation can predict increased toxicity and impact chemotherapy response.

Methods

We identified 182 patients with mNSCLC receiving systemic therapy. CT scan before treatment was used to measure muscle attenuation at the L3 psoas level. Increased toxicity was defined as dose reduction or discontinuation of therapy, hospital admission or death in cycle 1/2/3 unrelated to progression. Response was evaluated by CT scans after 2-3 cycles of therapy or per clinician documentation. The primary outcome was percentage of muscle attenuation and its relation to response. The secondary outcome was impact of muscle attenuation on toxicity.

Results

Of the 171 patients with scans, 135 patients had responding disease. Lower performance status (PS) at scan predicted for response (p=0.031). On a multivariate analysis, increasing percentage of muscle attenuation did not predict for response (OR=1.224, 95% CI 0.724-2.069, p=0.45). 66 patients (37.5%) had dose reduction in Cycle 1/2/3 or stopped chemotherapy because of toxicity. There was no association with muscle attenuation and toxicity (OR=0.800, 95% CI 0.547-1.208, p=0.30).

Logistic Regression for Response to Chemo Per Clinician

Effect	Class	Odds Ratio	Wald Lower 95% Confidence Limit for Adjusted Odds Ratio	Wald Upper 95% Confidence Limit for Adjusted Odds Ratio	p-Value
Healthy muscle (%)		1.391	0.641	3.020	0.4043
Total Healthy and Unhealthy PSOA		0.997	0.911	1.091	0.9487
Charlson Comobidity Index		0.947	0.639	1.401	0.7842
Weight change (KG, from prior to mets)		0.966	0.864	1.081	0.5510
Molecular profile	'EGFR, ALK, ROS1' VS 'Negative, Kras'	0.293	0.033	2.577	0.2684
Albumin		1.033	0.241	4.426	0.9652

Logistic Regression for Response to Chemo Per Follow Up Scan

Effect	Class	Odds Ratio	Wald Lower 95% Confidence Limit for Adjusted Odds Ratio	Wald Upper 95% Confidence Limit for Adjusted Odds Ratio	p-Value
Healthy muscle (%)		1.681	0.773	3.655	0.1903
Total Healthy and Unhealthy PSOA		1.032	0.948	1.124	0.4630
Charlson Comobidity Index		1.027	0.715	1.476	0.8835
Weight change (KG, from prior to mets)		0.982	0.884	1.092	0.7411
Molecular profile	'EGFR, ALK, ROS1' VS 'Negative, Kras'	0.270	0.032	2.283	0.2293
Albumin		0.733	0.180	2.981	0.6648

Logistic Regression for 'Having dose reduction in Cycle 1/2/3 OR stopped first line chemo due to toxicity'

Effect	Class	Odds Ratio	Wald Lower 95% Confidence Limit for Adjusted Odds Ratio	Wald Upper 95% Confidence Limit for Adjusted Odds Ratio	p-Value
Healthy muscle (%)		0.593	0.322	1.091	0.0929
Total Healthy and Unhealthy PSOA		0.939	0.862	1.023	0.1508
Charlson Comobidity Index		1.094	0.818	1.462	0.5444
Weight change (KG, from prior to mets)		0.982	0.888	1.086	0.7256
Molecular profile	'EGFR, ALK, ROS1' VS 'Negative, Kras'	0.447	0.109	1.831	0.2629
Albumin		1.485	0.487	4.530	0.4870

Conclusions

Variation in muscle composition demonstrated no reliable difference in outcomes; therefore, baseline muscle attenuation at L3 psoas level is not a predictor of chemotherapy toxicity and response.

eP718

EFFECTIVE MANAGEMENT OF DIARRHEA ASSOCIATED WITH NERATINIB: FINDINGS FROM THE CONTROL STUDY AND INDIVIDUAL PATIENT CASES

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Introduction
Neratinib is an irreversible pan-HER tyrosine kinase inhibitor (TKI) used for the extended adjuvant therapy of early-stage HER2-positive breast cancer. Diarrhea is the most common adverse event associated with TKIs, including neratinib, and may impact duration of treatment if left unmanaged. CONTROL (NCT02400476) is an open-label phase II study investigating the effectiveness of various prophylactics in preventing diarrhea and improving tolerability of neratinib.
Methods
Patients (n=485; ≥18 years) with early-stage HER2+ breast cancer treated with oral neratinib (240 mg) after adjuvant therapy participated in the study. Primary endpoint is incidence of grade ≥3 diarrhea. Study cohorts: loperamide prophylaxis (n=137); loperamide + budesonide (n=64); loperamide + colestipol (n=136). Two additional strategies (colestipol + prn loperamide and dose-escalation) are being evaluated.
Results
CONTROL data indicate that mandatory loperamide prophylaxis reduces the incidence and duration of grade ≥3 neratinib-associated diarrhea. Adding budesonide or colestipol further reduces this incidence. The median cumulative duration of grade ≥3 diarrhea ranged from 2.5 to 3.5 days for the entire treatment period. No grade 4 diarrhea has occurred in CONTROL. Examples of real-world strategies in managing neratinib-induced diarrhea will also be presented.
Conclusions
The study confirms that proactive antidiarrheal prophylaxis provides an effective means of reducing the incidence, severity and duration of neratinib-associated diarrhea, thus improving tolerability. Patient education and close monitoring are critical for managing diarrhea. Benefits of effective prophylaxis are seen in patients receiving neratinib in daily practice.

eP719
PREVALENCE AND PREDICTORS OF POST-TREATMENT PERIPHERAL NEUROPATHY IN SURVIVORS OF CANCER: RESULTS FROM THE 2010 LIVESTRONG SURVEY

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Introduction
Peripheral Neuropathy (PN) is a common long-term effect of cancer treatment, but no study has reported results across a wide range of survivors. This study addresses that gap in the literature.
Methods
Included in analyses were 3,061 post-treatment adult cancer survivors who completed the 2010 LIVESTRONG survey including items related to current and past PN, sociodemographics, cancer diagnosis and treatment. Respondents were excluded if they had metastatic/recurrent cancer or more than one primary cancer. Bi-variate and multivariate analyses were conducted to identify factors associated with post-treatment PN.
Results
Participants were 49.1 (sd=11.8) years old and 4.8 (sd=5.4) years post-diagnosis. More than half were female (62.9%), married/partnered (70.6%), White (87.3%), college educated (52.9%), employed full-time (60.5%) and had health insurance (82.9 %). The most prevalent cancer types were: breast (29.9%), testicular (9.2%), and prostate (7.5%). Over half of participants received chemotherapy (57.9%) alone or in combination with radiation and/or surgery.
Post-treatment PN was reported by 33.7% of survivors (n=1031); prevalence was highest among colorectal (63.9%), lung (60.8%), and ovarian (57.5%) cancer survivors. In logistic regression the strongest independent ($p<.05$) predictors were: chemotherapy [z(1)=177.1]; type of cancer [z(16)=38.4]; time since diagnosis [z(1)=26.7]; history of neuropathy prior to cancer [z(1)=24.7]; employment status [z(4)=17.28]; and income [z(6)=16.0].
Conclusions
Chemotherapy, certain cancer types, and PN prior to cancer were associated with higher risk for post-treatment PN. Time since diagnosis, full-time employment and higher income were associated with lower risk. Additional research is needed to determine whether these sociodemographic factors are predictors or consequences of post-treatment PN.

eP720
NASAL VESTIBULITIS: A NATURAL HISTORY TRIAL

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Introduction
Previously, nasal vestibulitis symptoms were retrospectively reported by 71% of patients undergoing taxane chemotherapy. This study describes the incidence, characteristics, and severity of nasal vestibulitis symptoms among patients undergoing paclitaxel chemotherapy.
Methods
Eligible participants, without baseline nasal symptoms, enrolled in this natural history trial at the initiation of a new chemotherapy regimen. Participants completed nasal symptom logs each time they received a dose of therapy. This abstract reports upon the participants who received paclitaxel. A larger ongoing trial will describe and compare nasal symptoms among participants receiving each of the follow therapies: paclitaxel, docetaxel, nab-paclitaxel, bevacizumab, or other.
Results
Twenty patients received paclitaxel chemotherapy. All patients were female with a mean age of 58.5 years, and an average time on study of 4.0 months. 18 (90%) experienced new nasal symptoms, including dryness (10, 56%), bleeding (13, 72%), pain (4, 22%), scabbing (8, 44%), runny nose (10, 55%), and congestion (6, 33%). Nasal symptoms started at a median of 20.5 days after initiation of paclitaxel therapy and symptoms lasted until the last dose in 94% (17) of participants. Five participants' providers recommend therapy for their nasal symptoms.
Conclusions
Patients receiving paclitaxel chemotherapy experience a high incidence of nasal vestibulitis symptoms.

eP721
PLATINUM-BASED CHEMOTHERAPY INDUCED OTOTOXICITY: THE UNANSWERED QUESTIONS

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Introduction
Due to an increase in survival rates, many cancer survivors are now impacted by toxicities associated with treatment. Platinum-based chemotherapy, although highly effective, is known to cause ototoxicity, presenting as high frequency hearing loss, and tinnitus. Hearing loss and tinnitus are associated with a higher risk of depression, dementia, social isolation and anxiety.
Methods
A systematic review was carried out, aiming to collect information about ototoxicity and the impact on quality of life. Furthermore, online health forums were then reviewed and thematically analysed to explore the lived experiences of people suffering from ototoxicity. This data then led to two clinical studies being designed. A cross-sectional study aims to identify the prevalence and severity of ototoxicity in the cancer population, and another mixed-methodology to identify the impact on quality of life and what support is available compared to what is needed.

Results
The systematic review found 10 papers representing 11 studies, all which were inconsistent in their diagnostics. The online forum review, however, found that there was indeed a lack of information and awareness of ototoxicity. The two clinical studies are in progress.
Conclusions
There is currently little good-quality information and support offered to patients who experience ototoxicity, which can potentially lead to many being undiagnosed and untreated. Ototoxicity can be permanent and progressive, therefore it is essential that a deeper understanding and increased awareness of how hearing loss and tinnitus affects the quality of life of cancer survivors can improve long-term symptoms management and support offered.

eP722
THE DEVELOPMENT OF NONBULLOUS PEMPHIGOID SECONDARY TO PD-1 INHIBITION

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Introduction
Bullous pemphigoid (BP) classically presents with pruritis and tense bullae, though a small proportion of patients never develop bullae in their clinical course. Nonbullous pemphigoid (NBP) often presents as an intensely pruritic, polymorphic eruption, which often presents a diagnostic challenge for clinicians. Additionally, immune checkpoint inhibitor (ICI) therapy has been associated with the development of BP, though NBP associated with ICI has not been previously described.
Methods
We performed a retrospective case series of 4 cases of NBP that developed in patients while they were receiving anti-PD-1 therapy.
Results
Clinical characteristics and diagnostic testing for patients in our case series are summarized in Tables 1 and 2. All of the patients had intense pruritus and nonspecific eruptions that required a combination of clinical, histopathological, and serological studies to confirm the diagnosis of NBP. All of our patients had a primarily urticarial morphology at presentation (Figure 1). Each of the four patients were treated with oral corticosteroids early in their course due to the severity of their pruritus, but they were ultimately able to achieve complete resolution of NBP using steroid-sparing biologic agents.
Conclusions
Given the nonspecific presentation of NBP, we advocate for performing histopathology, direct and indirect immunofluorescence, and serum anti-hemidesmosomal antibody studies in patients on ICI with refractory itch and/or pruritic eruptions. Once the diagnosis of NBP is established, we encourage early introduction of a targeted, steroid-sparing agent to avoid long term broad immunosuppression when possible.

eP723
POSITIVE EFFECTS OF TRILACICLIB ON PATIENT MYELOSUPPRESSION-RELATED SYMPTOMS AND FUNCTIONING: RESULTS FROM THREE PHASE 2 RANDOMIZED, DOUBLE-BLIND, PLACEBO-CONTROLLED SMALL CELL LUNG CANCER TRIALS

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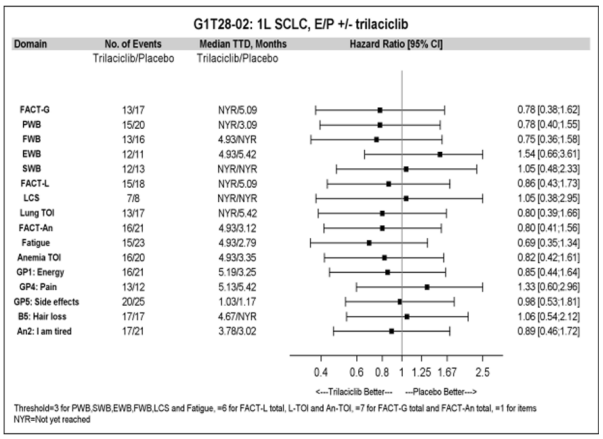
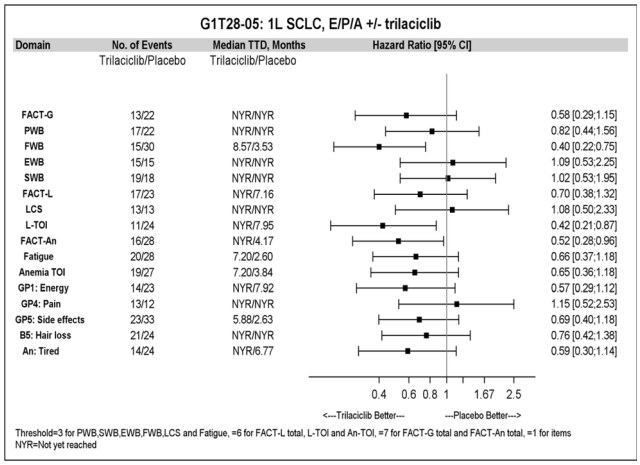
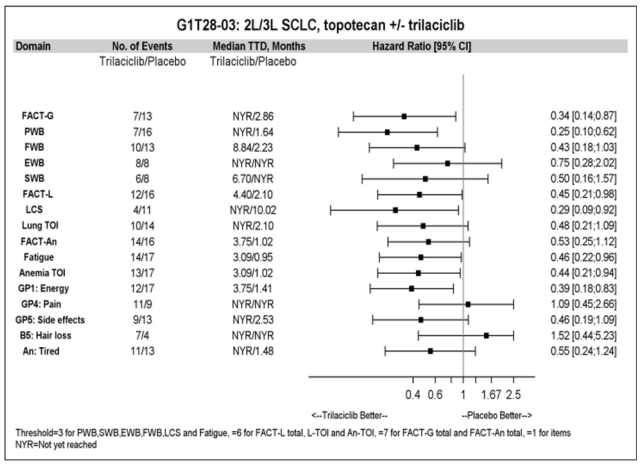
Introduction
Three randomized, double-blind, placebo-controlled Phase 2 trials treated extensive stage SCLC (ES-SCLC) patients with the CDK4/6 inhibitor trilaciclib prior to cytotoxic chemotherapy. In all three trials, trilaciclib demonstrated multi-lineage myelopreservation as measured by decreases in duration and occurrence of severe neutropenia and occurrence of RBC transfusions. We now analyze the effects of trilaciclib on symptoms and functional impairments.
Methods
In all three trials, patients received standard of care chemotherapy alone or with trilaciclib:

1. G1T28-03: previously-treated, receiving topotecan
2. G1T28-05: newly-diagnosed, receiving etoposide/ carboplatin (E/P), atezolizumab
3. G1T28-02, newly-diagnosed, receiving E/P

Patient Reported Outcome (PRO) symptom and functioning data were collected using the Functional Assessment of Cancer Therapy-Anemia (FACT-An) and the FACT-Lung (FACT-L) on days 1 and 10 of each cycle (day 1 only for G1T28-05).
Time-to-confirmed deterioration (TTD) was defined as time to first deterioration, confirmed at the next visit. Standard survival analysis (log-rank test and Cox model) was performed. Deterioration was defined as a change from baseline exceeding clinically meaningful thresholds.
Results
Trilaciclib was favored across trials in TTD for most of the domains analyzed (Figures 1-3), with statistically significant differences versus placebo in physical well-being (PWB), functional well-being (FWB), fatigue, and FACT-An. Differences were more prominent in the previously-treated population.
Conclusions
PRO results across all 3 trials indicate that adding trilaciclib to standard-of-care chemotherapy demonstrated meaningful delays of deterioration in select symptom domains (e.g., fatigue and anemia) in ES-SCLC patients as evaluated by FACT-L and FACT-An.







eP724

GEOGRAPHIC ACCESS TO SCALP COOLING FOR PREVENTION OF CHEMOTHERAPY-INDUCED ALOPECIA IN THE UNITED STATES

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Introduction

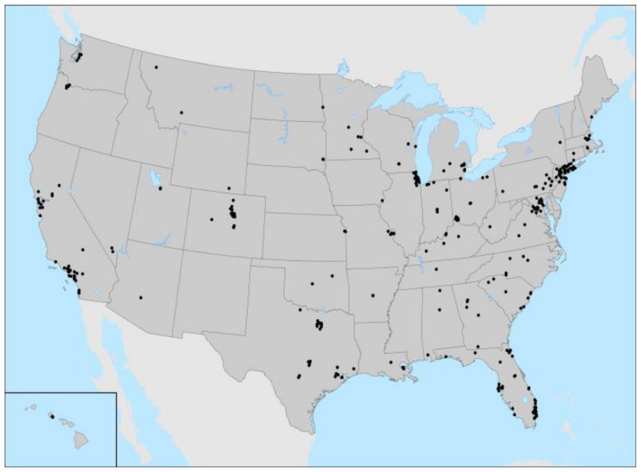
Chemotherapy-induced alopecia (CIA) is often one of the most psychosocially impactful aspects of cancer care for patients. Recent data has shown that scalp cooling is highly effective in preventing or decreasing the extent of CIA. Our study is the first to examine geographic access to scalp cooling centers in the United States.

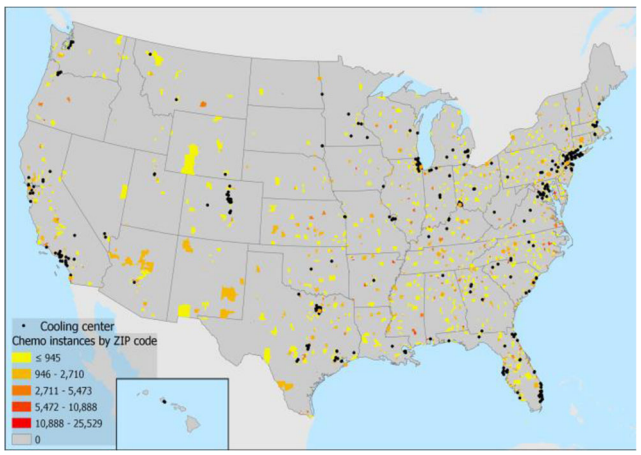
Methods

We identified locations of cancer treatment centers in the United States that offer scalp cooling as of Fall 2018 using The Rapunzel Project website, the Dignicap Scalp Cooling System website, and the Paxman USA website. We used 2016 Medicaid data to evaluate the number of chemotherapy infusions occurring in each 5-digit zip code in the United States.

Results

There are 366 cancer centers in the United States that offer scalp cooling therapy. Six states have no scalp cooling centers, while another seven only have one scalp cooling center in the entire state. 32% of cancer centers with scalp cooling therapy are located in New York, California, or Florida. Of 3000 5-digit zip codes in which chemotherapy infusions occurred in 2016, only 272 (9.1%) also have a scalp cooling center in that same zip code.





Conclusions

Scalp cooling therapy is highly effective in preventing CIA, but geographic access significantly limits the number of patients that are able to reduce or prevent hair loss using this method. Many of the scalp cooling centers are located in urban areas, meaning patients in more rural areas of the country would have to travel unreasonable distances to pursue this therapy.

eP725

DRUG-ASSOCIATED STOMATITIS IN METASTATIC COLORECTAL CANCER PATIENTS UNDERGOING AN EPITHELIAL GROWTH FACTOR RECEPTOR INHIBITOR (PANITUMUMAB): A CASE SERIES

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Introduction
Anti-Epidermal Growth Factor Receptor (EGFR) drugs are currently used for the treatment of some solid cancer types as metastatic colorectal cancer (mCRC). Despite the improvements in survival outcomes of mCRC patients, these target therapies such as panitumumab (pmAb), have been associated with several toxicities, including oral adverse events such as mucositis/stomatitis which has been reported in 5-21.3% patients.
Methods
Herein, we reported a series of 6 well-documented cases of mCRC patients undergoing pmAb associated with irinotecan complaining of mouth sores during cancer treatment.
Results
Four female and 2 male patients diagnosed with wild-type RAS adenocarcinomas, and with a mean age of 54 years (ranging from 37 to 68-year-old), were documented. The oral lesions manifested in approximately 8 days after drug infusion and all patients complained of pain and feeding discomfort, with 4 patients reporting moderate pain and the 2 remaining patients reporting mild and severe pain, respectively. They presented round/ovoid-shaped shallow ulcerations associated with a surrounding erythematous halo, showing an aphthous-like appearance. Additionally, 1 patient presented a non-ulcerated, tender and reddish tongue lesion that resembled benign migratory stomatitis, and five cases were associated with an acneiform cutaneous rash of face and trunk. The patients were successfully managed either with low-level laser therapy or topical corticosteroids, and the lesions self-resolved in a short time following drug interruption in 2 cases.
Conclusions
In summary, we highlight the need to recognize, prevent and treat appropriately this condition which remains unclear, and can negatively impact patients' quality of life and their ability to tolerate cancer treatment.

eP726
RADIOACTIVE CARIES IN PATIENTS OBTAINING THERAPY FOR MALIGNANT NEOPLASMS

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Introduction
With high actuality of toxic effects of antitumor therapy the aim of the research: to analyze the intensity and nature of damage to the dental tissues after chemotherapy and radiation therapy during the rehabilitation period in children and adolescents who have been treated of malignant neoplasms.
Methods
During the period 2017- 2019 in the Rehabilitation Centre "Russkoe Pole", 2005 patients undergoing treatment for Malignant Neoplasms. All of them received varying degrees of radiation therapy: acute lymphoblastic leukemia 12 Gray; CNS tumors and soft tissue head-neck tumors 35 - 90 Gray; total irradiation before bone marrow transplantation of 12 Gray to the site. The duration of remission is 4.9 ± 1.95. The median age of the patients at the time of the survey ranged from 3 to 17 years, M 8 ± 2.3.
Results
On this cohort, it was revealed that, the younger age the child at the time of receiving therapy, the more pronounced changes in his dental status. The most severe changes were observed in patients from the Department of Neuro-oncology. This is due to high doses radiation therapy in the head-neck area (1,2 pictures of the boy 7 years Diagnose: Medulloblastoma (chemotherapy, radiation therapy 56 Gray, neurosurgery).
Conclusions
nder the conditions of a specialized rehabilitation center, in which convalescents are concentrated, it is advisable to conduct prospective in-depth studies of the effect of tumor, chemotherapy and radiation on changes in the hard tissues of teeth, saliva homeostasis and caries-resistanc.

Authors	Presentation No.
A Wahid, M.	eP038
A. Caplan, G.	eP446
A/Wahid E. Ali, M.	eP039
Aapro, M.	eP007, eP023, JS08
Aarne Grossman, V.	eP225, eP443
Aaron, S.	eP527
Aaronson, N.	eP652, eP653
Abdel khalek, E.	eP461
Abdel-Gawad, M.	eP457
Abdelmonem, A.	eP469
Abdelmonem, M.	eP474
Abdelwahab, R.	eP038, eP039
Abdur Rouf, M.	eP338, eP342
Abe, E.	eP330
Abe, M.	eP016
Abrahm, J.	PS49
Abrams, G.	JS16
Abreu Alves, F.	eP134, eP135
Achmadzai, S.	eP661
Adams, A.	eP020, eP021
Adams, S.A.	eP383
Adamsen, L.	eP076, eP198, eP592, eP618
Adavikolanu, V.	eP063
Aditya, M.	eP388
Adlan, S.	eP037
Adler, S.	eP723
Affronti, M.L.	eP279
Afrin, S.	eP412
Afzal, N.	eP349
Agar, M.	eP446, eP448
Agarawal, S.	eP155, eP156, PS10
Agboola, O.	eP052
Aguilar-Velazco, J.C.	eP233
Ahcene Djaballah, S.	eP327
Ahlgren, J.	eP487
Ahmed, S.	eP428
Ahmedzai, S.H.	eP435
Ahn, S.J.	eP546
Ahn, S.Y.	eP677
Ahuja, R.	eP688
Aiba, K.	eP004
Aimin, L.	eP379, eP526
Aitpilla, F.	eP082
Ajenifuja, K.	eP052
Åkeflo, L.	eP562
Akgun Citak, E.	eP518
Akhtari, M.	eP348
Akhter, R.	eP412
Aksoy, N.	eP696, eP698
Akyuz, F.	eP213
Al Amri, T.	eP315
Al Jaouni, S.	eP315
Al Okka, R.	eP038
Al-Abri, M.	eP029
Al-Awamer, A.	PS65
Al-Obaidi MD, M.	eP138
Al-Okka, R.	eP039
Alahari Dhir, A.	eP231
Alam, R.	eP043
Alam, S.	eP442
Alaparthy, G.	eP623
Alaudeen, H.B.B.S.	eP334
Alayed, Y.	eP088
Albers, L.F.	PS30, PS54
Alexander, E.	eP517, eP519
Algun, C.	eP180
Ali, E.E.	eP149
Ali, T.	eP338
Alibhai, S.	eP142
Aljabri, S.	eP663, eP669
Allen, C.	eP188, eP189
Allen, P.	eP234
Allende Pérez, S.	eP422
Allende, S.	eP580
Alloju, S.	eP062
Almalky, M.	eP457
Almeida, J.M.D.C.V.	eP372
Almendros Sánchez, S.	PS69
Alpert, A.	eP520
Alqawasmeh, K.	eP029
Alsuhail, A.	eP485
Altavilla, G.	eP366
Amarelo, A.	eP694
Ameringer, S.	eP089
Ameye, L.	eP257
Amin, B.	eP673
Amir Sardari, R.	eP225
Amir, E.	eP166, eP589
An, S.Y.	eP635
Anadkat, M.	eP658
Anandarajah, G.	eP430
Ananeva, E.	eP496
Andersen, B.	eP577
Andersen, C.	eP592, eP618
Anderson, C.	eP267
Anderson, P.	eP266
Ando, M.	eP276
Andre, F.	eP630
Andreadis, C.	eP237
Andric, Z.	eP723
Anejo-Okopi, J.	eP075
Ang, E.	eP713
Angevine, P.	eP436
ann, W.	eP186
Ansari, F.	eP033
Antal, J.	eP723
Anthony, L.	eP121
Antoni, M.	eP524
Antoniotti, C.	eP293
Antonuzzo, A.	eP293, JS03
Antunes, P.	eP694
Anupama, C.	eP157
Anuradha, H.V.	eP157

Aoki, O. eP210
Aoun, M. eP299, PS25
Aoyama, T. eP016, eP227
Aprikian, S. PS66
Arai, M. eP276
Arantes, D. eP065
Aravantinos, G. eP237
Aravantinou, E. eP192
Arboleda, M.F. eP061, eP128, PS66
Arcanà, C. eP397
Ardavanis, A. eP237
Areepium, N. eP369
Ariga, H. eP016
Arndt, V. eP593, eP598
Arora, H. eP684
Arora, R.D. eP285, eP300
Arthur, E. PS55
Arthur, J. eP053
Asahina, A. eP616
Asang, C. eP292
Ascensão, A. eP694
Asch, S. eP136
Ashbury, F. ME01
Asher, A. eP143
Askarifar, M. eP242
Aslakson, R. eP691
Aso Gonzalez, S. eP120
Asoda, S. eP333
Asoogo, C. eP082
Assel, M. eP516
Asthana, R. eP110, eP122, eP290
Athanasiadis, A. eP192, eP237
Athar, A. eP171
Atherton, P. eP479
Atkins, J. JS15
attili, V.S.S. eP271
Aubin, N. PS66
Avery, J. eP162
Awada, A. PS25
Awuah, B. eP082
Azhar, A. eP450
Azhar, E. eP315
Aziz, A. eP175, eP683
Aziz, A.F. eP548
babu, K.V.S. eP365
Bacci, C. eP327
Bacis, V. eP130, PS66
Bae- MT-BC- NMT, M.S. eP069
Bae, S. eP303
Baek, S.K. eP435
Baekgaard Larsen, H. eP592
Bæksgaard Jensen, L. eP145
Bager, L. eP145
Baguley, B. eP164
Baguley, D. eP721
Bai, J. eP140, eP301, PS31
Baig, S. eP320
Bailey-Dorton, C. eP056
Bainbridge, D. eP602
Baize, N. eP218
Bajwah, S. PS59
Balachandran, D. eP219
Balanescu, D.V. eP716
Baldonedo-Cernuda, R. eP483
Baldwin-Medsker, A. eP456
Ball, I. eP692, eP701
Ball, K. eP164
Bamidele, O. eP077
Bandla, A. eP713
Banerjee, C. eP376, eP521
Banerjee, D. eP353
Banerjee, S. eP087, eP326
Bang Christensen, K. eP076, eP592
Bang Christiensen, K. eP618
Bansal, S. eP283
Bao, S. eP590
Bardellini, E. eP243, eP263
Bardhi, E. eP327
Baretić Marinac, M. eP537, eP542
Barker, C.A. eP664
Barker, R. eP350
Barkun, J. eP624
Barnard-Tidy, J. eP124
Barnes, E. eP008, eP101, eP401, eP402
Barni, S. eP364
Barr, N. eP531
Barratt, K. eP266
Barrault-Couchouron, M. eP528
Barreira, C.R.A. eP419
Barrett, M. eP313
Barros Ferreira, E. eP473
Barthélémy, V. eP528
Barton-Burke, M. eP516
Baruah, D. eP717
Bascialla, L. eP432
Bashoura, L. eP219
Bass, A. PS39
Basu, A. eP523
Bauer, J. eP306
Baynes, R. eP143
Beato, C. PS20
Beatty, L. eP160
Beaumont, A. eP612
Beauvois, S. eP257
Bechara, F. eP087
Becker-Commissaris, A. eP424, eP509
Becker, C. eP206
Becker, G. eP206
Becker, M. eP094
Beekman, A.T.F. eP509
Beer, J. eP084
Beernaert, K. eP438, eP439, eP447
Begum, N. eP338, eP342
Behera, M. eP033
Bektaş Kayhan, K. eP035
Belac-Lovasić, I. eP537, eP542
Belani, R. eP286
Belcher, S. eP547, eP631, eP719
Belfiori, G. eP367
Benavente, P. eP378
Bender, C. eP066
Bender, J. eP166
Bendiane, M.K. eP055, eP395
Benhalla, N.K. eP466
Benites, B. eP714
Béracochéa, M. eP528
Berardi, R. eP060, eP366, eP367
Berek, J. eP529, eP639

Bergamo, F. eP293
Bergling, M. eP264
Bergmark, K. eP533, eP562
Berman, R. PS58
Bernardi, M. eP636
Berry, D. eP700, JS06
Berterö, C. eP275
Bertino, G. eP087
Bertram, H. eP593, eP598
Beshier moh_besher74@yahoo.com, M. eP461
Bessire, J. eP445
Betrian, S. eP317
Bezinelli, L. eP269
Bezinelli, L.M. eP268
Bharathy, R. PS16
bharati, S. eP137
Bharati, S.J. eP102
Bhargava, R. eP302
Bhatia MD- MPH, S. eP138
Bhatnagar, N. eP050
Bhatnagar, S. eP050, eP102, eP137, eP253
Bhattacharyya, M. eP353
Bhide, P. eP132
Bhoo-Pathy, N. eP548
Bhoo-Pathy, N.T. eP548
Bhupal, D.P. eP620
Biasotto, M. eP252
Billod, J. eP532
Bilsborough, R. eP362
Binder, G. eP026, PS63
Biondo, P. eP436
Biswas, K. eP273
Bitar, H. eP521
Björnsson, B. eP539
Blackhall, L. eP043
Blanchard, E. eP063
Blanchard, G. eP362
Bland, K. eP549
Blaschke, S.M. eP390
Blayney, D.W. eP604
Blijlevens, N. eP159, eP246, eP260
Blonquist, T. eP700
Blum-Murphy, M. eP238
Boelsbjerg, H.B. eP414
Boers-Doets, C.B. eP382
Bokan, D. eP222
Bolla, K. eP106
Boltong, A. eP306
Bomfim, E. eP070, eP536
Bondarenko, A. eP644
Bonetti, A. eP002
Boni, E. eP432
Bonito, N. eP296
Bonneterre, J. eP363
Bonomi, P.D. eP437
Bonsignore, A. eP549
Boopathy, A. eP494
Booth, C. PS51
Bordia, S. eP612
Bore, J. eP167
Borges, A.F. eP325
Borgonovo, K. eP364
Borisov, P. eP644
Börjeson, S. eP275
Borneman, T. eP398
Bornstein, J.C. PS04
borod, M. PS66
Bortolotti, F. eP324
Boselli, D. eP056
Bosnjak, S. eP693
Bouchal, S.R. eP436
Boufferoua, F. eP466
Boukovinas, I. eP237
Bourlon, M.T. eP545
Bournakis, E. eP237
Bousquet, P.J. eP395
Bouterfas, N. eP466
Bovbjerg, D. eP547, eP719
Bowen, J. eP692, eP701, PS17
Boyne, D. eP224, eP497
Bradford, N. eP083
Bradley, G. PS31
Brandão, T.B. eP725
Brant, J. eP054
Brassil, M. eP446
Bravo-Ruiseco, G. eP258
Braz-Silva, P.H. eP250
Breed, W. eP661
Brennan, M. eP247, eP344
Brenner, H. eP593, eP598
Brill, J. eP267
Brill, S. eP552
Brito-Dellan, N. eP229, eP238, eP709
Brito, R. eP065
Brohard, C. eP203
Bronkhorst, E. eP246
Brosens, M. eP659, eP667
Broux, V. eP667
Brown, B. eP112, eP522
Brown, C. eP131
Brown, L. eP446
Brown, M.C. eP111
Brown, T. eP306
Browning, K. PS55
Bruce, J. eP535
Bruera, E. eP053, eP062, eP069, eP113, eP141, eP230, eP361, eP425, eP431, eP450, eP468, eP538, eP594, eP633
Brundage, M. eP131
Bruner, D.W. PS31
Brunner, C. eP707
Bruno, J. eP714
Bruno, J.S. eP250, eP323
Bruno, T. eP718
Bryant-Lukosius, D. eP092, eP162
Buckle, P. eP417
Buga, S. eP376, eP521
Bugden, E. eP591
Bui, T. eP624
Bulanov, A. eP013
Bulens, P. eP659, eP667
Burattini, L. eP060
Burbage, D. eP389
Burge, M. eP009
Burgio, V. eP293
Burgoyne, R. PS33

Burhenn, P.S.	eP234
Burke, D.	eP313
Burress, V.	eP474
Burris, V.	eP469
Bushehri, A.	eP012
Bussé, L.	eP659, eP667
Butler, T.	eP129
Byrne, A.	eP427
Byun, J.M.	eP435
Cabiddu, M.	eP364
Cafazzo A., J.	eP166
Cakir Karabas, H.	eP035
Camargo, A.A.	eP250, eP323
Cameron, E.	eP375
Cameron, M.	eP046
Campana, L.	eP087
Campanha, D.	eP135
Campbell, G.	eP547, eP631, eP719
Campbell, K.	eP549
Campone, M.	eP630
Campos, E.B.	eP372
Campos, L.	eP135
Can, G.	eP213, PS43
Candela, B.	eP672
Candiani, M.	eP636
Candotti, G.	eP636
Cano, I.	eP336
Caponero, R.	eP441
Cappuccio, F.	eP568
Capriotti, K.	eP658
Carafizi, N.	eP416
Cardoni, M.	eP469, eP474
Carlesimo, M.	eP679, eP680, eP705
Carli, F.	eP624
Carlomagno, C.	eP293
Carlton, J.	eP370
Carneiro Leão, J.	eP328
Carnelli, L.	eP636
Caro, G.	eP679, eP680, eP705
Carole, K.F.	eP208
Carvalho Da Costa, A.C.	eP473
Carvalho, D.L.	eP269
Casey, L.	eP313
Cashion, C.	eP083
Cassel, B.	eP150
Castagno, J.	eP524
Castellano, I.	eP116
Castro-Alonso, F.	eP545
Cathcart-Rake, E.	eP720
Caulfield, B.	eP626
Caulkin, R.	eP408
Censabella, S.	eP659, eP667
Cetinkaya, A.	eP184
Cevik, B.	eP510, eP518
Chabni, S.	eP466
Chacon, L.	eP588, eP599
Chae, J.	eP303
Chahine, S.	eP559
Chaitosa, R.	eP685
Chan, A.	eP168, eP283, eP607, eP608, eP611, eP613, JS13, PS21
Chan, C.	eP434
Chan, C.W.H.	eP481, eP651
Chan, G.	eP610, eP713
Chan, J.C.	eP642
Chan, K.T.	eP415
Chan, R.	eP585
Chan, S.	eP007, eP012, eP059, eP088, eP099, eP100, eP101, eP118, eP220, eP401, eP402, eP695, PS34
Chan, S.Y.	eP044
Chandra, S.	eP353
Chandran, G.	eP098
Chang, A.T.Y.	eP415
Chang, J.S.	eP064
Chang, L.L.	eP044
Chang, M.H.	eP064
Chang, Y.J.	eP454
Changying, C.	eP379, eP526
Chao, S.	eP529
Chapman, J.	eP201
Charalambous, A.	JS05
Charbonneau, F.	eP015, eP290
Chartier, L.	eP244
Chasen, M.	eP302, eP308
Chatkaew, S.	eP027
Chatzifoti, N.	eP192
Chaudhury, P.	eP624
Chauhan, A.	eP121, eP710
Chauhan, J.B.	eP098
Chavan, N.	eP671
Chavarri-Guerra, Y.	eP233
Cheah, S.C.	PS16
Chee, C.E.	eP610
Chen, C.	eP406, eP411
Chen, H.	eP425
Chen, H.L.	eP270
Chen, H.M.	eP347
Chen, I.	eP399, eP413
Chen, J.J.	eP541
Chen, P.	eP590
Chen, W.	eP507
Chen, Y.	eP248, eP406, eP411
Chen, Y.L.	eP689
Cheng, C.N.	eP415
Cheng, E.	PS22
Cheng, H.	eP425
Cheng, K.	eP334
Cheng, S.F.	eP399, eP413
Chennupati, S.	eP674
Chernicova, I.	eP281
Chesman, N.	eP570
Cheung, V.H.M.	eP415
Cheung, W.	eP224, eP497
Cheung, Y.B.	eP503
Cheung, Y.T.	eP471
Chevrier, M.	eP079
Chew, L.	eP149, eP232
chia-chin, L.	eP270
Chiang, K.	eP025
Chiang, M.K.	eP044
Chicrala, G.	eP325, eP336
Chien, L.I.	eP347
Chin-Chu, C.	eP047
Chini, C.	eP432
Chiorini A., J.	eP107
Chisholm, G.	eP425
Chitiya, L.	eP013

Chiu, L.	eP006, eP007
Chiu, N.	eP006, eP007
Chiu, W.T.	eP642
Cho, Y.U.	eP482
Choi, E.J.	eP048
Choi, H.J.	eP435
Choi, J.	eP658
Choi, K.C.	eP651
Choi, Y.J.	eP064, eP064
Choo Cheng Fei, W.	PS16
Choo, J.E.	eP677
Choquet, S.	eP218
Chou, X.Y.	eP642
Chou, Y.J.	eP312
Choudhari, C.	eP495
Choudhary, N.	eP050, eP102
Choudhury, D.	eP339
Chouksey, R.	eP455, eP530
Chow, B.	PS51
Chow, C.F.	eP415
Chow, E.	eP008, eP012, eP059, eP088, eP099, eP100, eP101, eP110, eP118, eP122, eP220, eP290, eP401, eP402, eP663, eP669, eP695, PS34
Chow, K.M.	eP434, eP481, eP651
Chow, R.	eP006, eP007, eP110, eP122
Chow, S.	eP059, eP099, eP100, eP118, eP220, PS34
Christie, A.J.	eP069
Christodoulopoulos, R.	PS66
Christopoulou, A.	eP237
Chu, C.Y.	eP668
Chun, M.	eP546
Chung, V.	eP398
Chye, R.	eP446
Ciałkowska-Rysz, A.	eP058
Cicolello, K.	eP430
Cink Škalic, M.	eP537
Cink, M.	eP542
Cioffi, R.	eP636
Ciotti, O.	eP262
Ciruelos, E.	eP630
Claes, S.	eP659, eP667
Claret, C.	eP493
Clark-Snow, R.	eP026, PS63
Clark, F.	eP600
Clark, K.	eP521
Clark, M.	eP479
Clarke, M.	eP294, eP295
Clemson Vaca, K.	eP604
Clochesy, J.	eP194
Clover, J.	eP087
Cmelak, A.	PS32
Cnossen, I.C.	eP595
Coberly, T.	PS63
Cohen, B.	eP516
Cohen, J.	eP438, eP439
Cohen, L.	eP113
Colasurdo, A.	eP715
Coleman, A.	eP112, eP522
Collado-Borrell, R.	eP147
Colman, R.	eP444, PS52
Colome, E.	PS20
Colomer-Lahiguera, S.	eP092
Colson, D.	eP659, eP667
Cong, W.	eP569
Conley, Y.	eP223, JS16
Conte, P.	eP630
Cook-Wiens, G.	eP143
Cook, D.	eP362
Cooksley, T.	eP294, eP295, PS24, PS38
Cooper Brathwaite, A.	eP396
Cooper, B.	eP277, eP489, eP585, PS05, PS45
Cooper, B.A.	eP081
Cordio, S.	eP293
Corish, C.	eP313
Corrêa, L.	eP268, eP065, eP269
Correia, S.F.	eP483
Corrigan, M.	eP555
Cortesi, E.	eP293
Costa, A.	eP325
Costa, L.S.S.	eP268
Costa, N.	eP065
Costantini, M.	PS59
Counè, B.	eP206
Coupé, V.	eP424
Cox, S.	eP408
Coyle, V.	eP294, eP295
Crawford, g.	PS64
Cremolini, C.	eP293
Crippa, S.	eP367
Crouch, A.	eP115
Crumpei - Tanasa, I.	eP513, eP514
Crumpei, I.	eP514
Cruz, A.R.	eP265
Cruz, E.	eP163
Cruz, F.	eP209
Cubero, D.	eP209
Cui, P.	eP406, eP411
Cuijpers, P.	eP509, eP511, eP652, eP653
Culakova, E.	eP034, eP225, eP228, eP304, eP360, eP615, eP628
Cullia, L.	eP397
Cumming, A.	eP446
Cunningham, E.	eP557
Curatolo, P.	eP087
Currow, D.	eP437
Cuthbert, C.	eP224, eP497
D'Alessio, A.	eP397
D'Arino, A.	eP679, eP680, eP705
D'Souza, R.	eP122
Da Silva Ferreira, A.R.	eP260, eP258, eP272
da Silva Júnior, P.	eP065
daddi, A.	eP231
Daem, M.	eP086
Daga, H.	eP016
Dahiya, N.	eP486
Dale, W.	eP225, eP443, eP521, PS48
Daly, R.	eP164
Dang, T.	eP678
Daniel, D.	eP723
Danjoux, C.	eP401, eP402
Danny, J.	eP163
Darmani, N.	eP005
Das, S.	eP339, eP404
Dassah, E.	eP082
Datta, A.	eP476
Davey, J.	eP302
Davies, A.	eP441, PS42
Davies, A.N.	eP421

Davies, D. eP166
Davis, J.M. eP446
Davis, M. PS40, PS56
Davis, M.E. eP456
Davis, M.P. eP418
Day, L. eP601
Dazai, M. eP030
De Vleminck, A. eP447
de Alcântara, B. eP209
De Angelis, C. eP110, eP122
de Bataille, C. eP317
de Bree, R. eP509, eP595
de Groot, R. eP335
De Guia, C. eP111
de Haan, T. eP335
De La Cruz, M. eP230
De La Garza II, R. eP498
De Laat, M. eP444, PS52
De Marino, V. eP366
De Mooij, C. eP260
De Santis Carmen, M.C. eP660
De Terlizzi, F. eP087
de Toro, M. eP236
De Wit, M. eP158, eP511, PS09
De, R. eP353
DeAngelis, C. eP006, eP007, eP008, eP012, eP015, eP059, eP100, eP220, eP290, eP401, eP402, eP669, PS34
DeCastro, G. eP068
Declerck, M. eP218
Deering, E. eP699
Defachelles, A.S. eP460
Defilipp, Z. eP429
Deforche, B. eP439
deKock, I. eP452
Del Fabbro, E. eP308
del Giglio, A. eP209
DelFabbro, E. eP150
Delgado Guay, M. eP230
Deliens, L. eP438, eP439, eP444, eP447, PS52
Demidov, L. eP644
Demirci, U. eP221
Demirhan, M. eP146
Dempsey, A. eP523
Denehy, L. eP211, eP212
Dennis, K. eP022
Deo, P. eP480
Deo, S.V.S. eP074
deodhar, J. eP530
Derosa, A. eP337
Desai, N. JS15
DeSalvo, J. eP551, eP552
Desjardins, A. eP279
Desnoyers, A. eP589
Desrame, J. eP218
Devadas, S.K. eP620
Dewan, A. eP722
Dhillon, H. eP160, JS10
Dhir, V. eP578
Dholam, K. eP031
Dhollander, N. eP447
Di Mattei, V. eP636
Di Palma, M. eP371, JS02
Di Pietro Paolo, M. eP060
Diab-Assaf, M. eP315
Diala, I. eP692
Dias Pereira, J.R. eP328
Dib, E. eP225
Dibaj, S. eP141, eP361
Dibaj, S.S. eP069, eP594
Dickerson, J. eP691
Dickman, A. eP196, eP441
Dijk, D.J. eP421
Diniz dos Reis, P.E. eP205, eP473
Dionne-Odom, J.N. eP228
Dipasquale, A. eP397
Diplock, B.D. eP105
Dissanayake, M. eP396
Dixit, N. eP588, eP627
Djalilova, D. eP355
Dobrila-Dintinjana, R. eP537, eP542
Doege, D. eP593, eP598
Dogra, S. eP557
Dolai, T. eP353
Domen, K. eP540
Domínguez Ocadio, G. eP422
Dong, J. eP163
Dong, S. eP406, eP411
Dong, S.Q. eP675
Donisan, T. eP716
Donnelly, P. eP139
Donnelly, Y. eP313
Donovan, H. eP547, eP631, eP719
Doornaert, P. eP595
Dooyoung, J. eP504
Dorchin, M. eP041
Dorta, C. eP116
Dotan, E. eP234
Douglas, R.G. eP273
Downs, M. eP267
Dozmorov, M. eP127
Dr Vigano, A. PS66
Dr, S.G.V. eP649
Dr, V.S. eP649
Dracham, C.B. eP553
Dragan, T. eP257
Dressler, G. eP430
Driza, S. eP163
Drosdowsky, A. eP212
Drost, L. eP008, eP059, eP088, eP099, eP100, eP101, eP220, eP669, PS34
Drott, J. eP275, eP539
Drury, A. eP621
Du, Y. eP590
Duan, B. eP301
Duarte, A. eP686
Dubashi, B. eP459
Duberstein, P. eP443
Dubinsky, S. eP235
Dudgeon, D. PS51
Dudley, W. eP129
Duggan, E. eP163
Dumlao, D. eP141
Dunberger, G. eP562
Dunn, J. eP139
Dunne, R. eP034, eP304, eP360, eP615, eP628, eP715
Durand, J.B. eP716
Durrani, S. eP113

Dusi, V. eP271
Dutta, S. eP033
Dvorakova, D. eP708
Dzierżanowski, T. eP058
Eberle, A. eP593, eP598
Ector, G. eP159
Edbrooke, L. eP211, eP212
Edridge, K. eP172
Eduardo, F.D.P. eP268
Eduardo, F.P. eP269
Edwards, B. PS68
Edwards, L. eP448
Eeckhout, G.M. eP509
Eecloo, K. eP444, PS52
Eerenstein, S. eP424
Eerenstein, S.E.J. eP595
Egle, D. eP707
Ehrenpreis, A. eP256
Ehrenpreis, E. eP256
Eicher, M. eP092
Eisen, A. eP356
El Bawab, S. eP298
El Geziry, A. eP038
EL Hangoori, W. eP029
El Mozy kams_8866@yahoo.com, W. eP461
El Omri, H. eP340
El-khayat, H. eP457
El-Mouallem, N. eP150
El-Shabrawi, M. eP457
Elangovan, A. eP553
Elazzaz, S. eP039
Elazzazy, S. eP038, eP340
Ellis, J. eP104, eP105
Ellis, M. eP601
Elmerstig, E. eP562
Elsayed, G. eP036
Elsnukaeva, K. eP013
Elswick, R.K. eP654
Elumalai, M. PS16
Ely, E.W. eP446
Elzevier, H.W. PS30, PS54
Emmanuel, A. eP441
Emmenegger, U. eP235
Enblom, A. eP215, eP533, eP556
Endo, F. PS19
Enepekides, D. eP104, eP105
Eng, L. PS37
Engelen, V. PS54
Epstein, J.B. eP317, eP382
Erdogan, C. eP696, eP698
Erickson, J. eP089
Erickson, L. eP163
Erten, B. eP510
Esameli, B. eP229
Escalera, C. eP625
Escudero-Vilaplana, V. eP147
Eskigülek, Y. eP410
Esparza-Duran, D. eP524
Espin-Garcia, O. eP578
Espósito, F. PS20, PS26
Esserman, L. eP523
Esteves, D. eP694
Eunjoo, K. eP676
Evans, A. eP139
Evans, C. PS59
Evans, W.K. eP375
Eychmüller, S. eP445
Fabregat Franco, C. PS69
Facchinetti, N. eP660
Faithfull, S. eP597
Faiz, S. eP219
Faizan, M. PS35
Falcone, A. eP293
Falconi, M. eP367
Fallai, C. eP660
Fan, J. eP111
Fang, L. eP334
Fang, Y.Y. eP341, eP642
Farina, M. eP243
Farré, N. eP204
Farrell, C. eP718
Fatima, A. eP307, eP711
Faulkner, J. eP370
Fayed Ahmed Elgeziry, A. eP039
Fazekas, B. eP446
Fea, E. eP293
Fedianin, M. eP013, eP014
Feghali, E. eP469, eP474
Feldman, A. eP256
Felipe, D.F. eP265
Fenlon, D. eP601
Ferella, L. eP660
Ferguson, K. eP155, eP156, PS10
Fernández Ortega, P. eP204
feroz, A. eP175
Ferrara, C. eP366
Ferrari, D. eP366
Ferrari, S. eP397
Ferreira, A. eP289
Ferreira, M.H. eP268
Ferrell, B. eP398
Ferrer, C. eP045
Ferrua, M. eP371
Feuerstein, M. JS11
Figueiredo, J. eP057
Filincieri, P. eP568
Filippone, R. PS04
Findlay, M. eP306
Finlay, D.A. eP417
Fiordoliva, I. eP060
Fitch, M. eP380
Fitzgerald, S. eP555
Flamen, P. eP299
Flannery, M. eP225, eP228, eP443, eP520
Fletcher, C. PS14
Flight, I. eP201, PS14
Flore, M. eP432
Flunkert, K. eP292
Flynn, F. eP190
Foitschik, T. eP216
Fok, R.W.Y. eP611, eP613
Fomichov, V. eP275
Fonfa, A. eP583
Fong, A.J. eP602
Fonseca, F. eP209

Font, C.	eP236, PS20, PS26
Foote, R.	eP479
Forde, C.	eP294, eP295
Foreman, E.	JS09
Forge, J.	eP108, eP109
Fortuna, M.C.	eP679, eP680, eP705
Fotedar, V.	eP688
Fourcade, A.	eP371
Fowler, M.	eP637
Fox, B.	eP236
francesco, B.	JS03
Franco, L.	eP674
Fransiska, D.	eP610
Fraser, S.	eP164
Frederick, N.	PS27
Fregnani, E.	eP714
Fregnani, E.R.	eP250, eP323
Friedman, E.	eP629
Friedman, H.	eP279
Frolova, M.	eP013
Ftanou, M.	eP612
Fu, J.	eP210, eP594
Fu, Y.	eP314
Fuchs, D.	eP441
Fujino, J.	eP244
Fujisawa, T.	eP080
Fujita, H.	PS19
Fukunaga, H.	eP249
Fuller, C.	eP113
Fung, C.	eP615, eP628, eP715
Fwazy, A.	eP461
G. Lawlor, P.	eP446
Gabster, B.	eP691
Gagel, R.	eP202
Gail, D.	eP533
Gaiola, R.D.	eP265
Galiti, D.	eP153
Galitis, E.	eP259
Gallagher, J.	eP313
Gallerani, D.G.	eP084
Gama Fila, E.	eP105
Gamaoun, R.	eP061, eP128, PS66
Ganesan, P.	eP459, eP494
Ganesh, V.	eP008, eP100, PS34
Ganguly, B.	eP353
Gao, W.	PS59
Gao, X.	eP406, eP411
Garces, Y.	eP479
Garcia Morillo, M.	PS26
Garcia-Gonzalez, A.	eP077
Garg, R.	eP137, eP102
Garming-Legert, K.	eP247
Garssen, J.	eP272
Gascón, P.	eP298
Gasson, S.	eP139
Gatehi, M.	eP596
Gaudel, P.	eP229, eP709
Gaudet, M.	eP022
Gause, A.	eP627
Gautam, D.	eP071
Gawade, P.	eP286
Gayle, A.	eP443
Gear, K.	eP273
Geboes, K.	eP444, PS52
Gebresellassie, M.	eP529
Gebreyohannes, E.	eP003
Geddie, P.	eP194
Gehl, J.	eP087
Gelmon, K.	eP549
Gemawat, K.	eP177
Gemawat, N.	eP177
Geng, Y.	eP361
Genot, M.T.	eP257
Gentile, D.	eP056
Gentry, M.	eP479
Georgala, A.	eP299, PS25
George, A.	eP326
George, L.S.	eP326
George, P.S.	eP345
Getahun, N.	eP176
Gewandter, J.	eP715
Ghequière, S.	eP086
Ghiam, M.	PS32
Ghilardi, M.	eP364
Ghoshal, S.	eP553
Giaquinto, A.	eP262, eP432
Gibson, F.	eP472, PS28, PS48
Gibson, M.	PS32
Gibson, R.	PS17
Gigic, B.	eP057
Giguere, J.	JS15
Gilbert, J.	PS32
Gilmore, N.	eP225, eP628, JS15
Gilmore, N.J.	eP360
Gimelfarb, A.	eP129
Ginex, P.	eP010, W01
Giorgione, R.	eP087
Giruparajah, M.	PS51
Giuffrè, S.	eP397
Giuliani, J.	eP002
Giuliano, C.	eP024
Giustra, M.G.	eP366
Gjevre, J.	eP536
Glazkova, E.	eP013
Glisch, C.	eP717
Glotzbecker, B.	eP429
Gobba, S.	eP432
Gobbi, M.F.	eP268
Godino, C.	eP204
Goebel, G.	eP707
Gogoi, M.	eP647
Goh, W.L.	eP607, eP608
Gok Metin, Z.	eP221
Golčić, G.	eP537, eP542
Golčić, M.	eP537, eP542
Goldberg, L.	eP104
Goldfarb, S.	eP658
Gomes-Silva, W.	eP725
Gomes, D.O.	eP265
Gomez-Moreno, C.	eP233
Gómez, J.	eP045
Gomez, T.	eP069
Gonsalves, C.	eP350
González Barboteo, J.	eP120, PS69
Gonzalez-Haba, E.	eP147
Goodall, S.	eP110, eP122
Gordon, K.	eP043
Gori, S.	eP366

Gough, K.	eP612
Govers, M.	eP667
Gović-Golčić, L.	eP537, eP542
Goyal, G.	eP462
Gralla, R.	eP007
Grande, G.	PS59
Granger, K.	eP164
Grasso, V.	eP163
Gray, R.	eP436
Green, A.	eP448
Green, P.	eP163
Greiner, R.	eP056
Griffin A, B.	eP597
Griffin, D.	eP077
Griffin, P.	eP298
Griffiths, G.	eP601
Griffiths, J.	eP417
Grischke, E.M.	eP087
Groeger, J.	eP163
Groenvold, M.	eP653
Groselj, A.	eP087
Grov, E.K.	eP081
Grudem, M.	eP699
Gu, X.	eP409
Guang-wei Yang, Y.	eP240
Gueiros, L.	eP328
Gueli, R.	eP262
Guerry, R.	eP389
Guha Chaudhuri, P.	eP476
Guleria, R.	eP495
Gummersall, T.	eP634
Gunawan, S.	eP465
Gunn, K.	PS14
Gunn, K.M.	eP499
Guo, H.	eP425
Guo, H.R.	eP117
Guo, Y.	eP425, eP594
Gupta, K.	eP646
Gupta, M.	eP554, eP688, eP688
Gupta, M.K.	eP554
Gupta, N.	eP137
Gupta, S.	eP671
Gupta, T.	eP671
Gurav, S.	eP031
Gutierrez, C.	eP582, eP629
Gutiérrez, L.	eP236
Gwaltney, C.	eP723
H. Bush, S.	eP446
Haase, K.	eP162
Hae Kwang, L.	eP676
Hahm, B.	eP702
Hahm, B.J.	eP358, eP440, eP504, eP506, eP706
Haider, A.	eP053
Hairom, Z.	eP713
Haj Mohammad, S.F.	PS30
Hale, D.	eP239
Halkett, G.	eP517, eP519
Hall, E.	eP691
Hall, N.	PS58
Hall, S.	eP451
Halmos, G.B.	eP595
Hamad, A.	eP038, eP039
Hamerschlak, N.	eP268, eP269
Hamill, R.	eP202
Hammer, M.	eP073, eP223, JS16
Han, Y.H.	eP632
Hanan, T.	eP555
Hannon, B.	eP442, PS51
Hansen, A.	PS51
Hansen, N.V.	eP414
Hantala, D.	eP466
Haque, M.	eP020, eP021, eP375
Harada, K.	eP030, eP316
Harada, M.	eP119
Harakeh, S.	eP315
Harden, M.	eP467
Hardikar, S.	eP057
Hardillo, J.A.U.	eP595
Hardin, J.W.	eP084
Haris, H.	eP067
Harmsen, H.	eP260, PS17
Harmsen, H.J.M.	eP258, eP272
Harris, J.	eP111
Harris, W.	eP143
Harrison-Moench, E.	eP298
Harthoorn, L.	eP272
Hartman, T.J.	PS31
Hartog, A.	eP272
Harunal Rashid, M.F.	eP607, eP608, eP611, eP613
Hasegawa, S.	eP540
Hashimoto, H.	eP016
Hashimoto, M.	eP540
Hassanzadeganroudsari1, M.	PS04
Hasséus, B.	eP247
Haverbeke, C.	eP438
Havinga, R.	eP258, eP260
Hayashi, M.	eP500
Hayashi, T.	eP004, eP330
Hayes, J.	eP043
He, L.	eP301
Healy, P.	eP279
Heckler, C.	eP615, eP628, eP715
Hee Jun, K.	eP028
Hegarty, J.	eP555
Heidrich, V.	eP323
Heimonen, S.	eP558
Heiney, S.P.	eP383
Hejri-Rad, Y.	eP104
Helms, A.S.	eP198
helmy, S.	eP457
Hemmelgarn, B.	eP224, eP497
Herbault-Barrés, B.	eP317
Hermens, R.	eP159
Herndon- II, J.	eP279
Hero, B.	eP216
Herranz-Alonso, A.	eP147
Herring, K.	eP152
Heung, Y.	eP450
Hewson, I.	eP586
Hida, N.	eP019
Higgins, K.	eP104, eP105, eP313
Higginson, I.	PS59
Hill, C.	eP239
Hillebrand, L.	eP521
Hino, O.	eP492
Hirabayashi, R.	eP210
Hirano, Y.	eP214

Hiranuma, A.	eP276
Hiroshi, I.	eP261
Hirotsu, K.	eP678
Hjorth, M.	eP572, PS46
Ho, C.H.	eP117
Ho, M.K.	eP415
Ho, M.L.	eP415
Hoffman, A.	eP297
Hoffmann, M.	eP197
Hofmeister, E.	eP529, eP604, eP639
Hohri, H.	eP603
Holleczek, B.	eP593, eP598
Holmlund, J.	eP267
Holowatyj, A.	eP057
Holst Pedersen, J.	eP592
Holtmaat, K.	eP158, eP424, eP511, eP652, eP653, PS09
Holzner, B.	eP652, eP653
Homdee, N.	eP043
Honda, K.	eP019
Hong, F.	eP700
Honings, J.	eP595
Hooghiemstra, N.	eP158, eP424, eP653
Hopkins, J.	eP228
Horie, Y.	eP019
Horsa, B.	eP003
Hosie, A.	eP446, eP448
Hosina, Y.	eP016
Hovan, A.	eP247
Howarth, G.	eP244
Howell, D.	eP131, eP162, eP166, PS51
Hsiao, F.H.	eP491
Hsiao, S.Y.	eP117
Hsieh, C.	eP049
Hsu-Min, T.	eP645
Hsu, C.Y.	eP541
Hsue, C.C.Y.	eP415
Huang, C.	eP042, eP078
Huang, I.B.	eP024
Huang, M.	eP009
Huang, T.W.	eP241
Hubalek, M.	eP707
Hughes, D.	eP201
Hui, D.	eP425, PS50, PS57
Hung, C.T.	eP381, eP642
Hunt, J.	eP448
Hunter, M.	eP601
Hurk, C.	eP094, eP661
Hurtado, L.	eP204
Husain, A.	eP166
Hussain, S.	eP040
Husson, O.	PS30
Huston, A.	eP034, eP715
Hutcheson, K.	PS47
Hutcheson, K.A.	eP380
Hutchison, A.	eP522
Huysmans, M.C.	eP246
Hwang, I.G.	eP245
Hwang, J.H.	eP635
Hwang, M.	eP101
Hwang, S.W.	eP405
Hyeokgon, P.	eP676
Iacono, M.	eP568
Iacovelli, N.A.	eP660
Ibrahim Rasul, K.	eP039
Ibrahim, F.	eP539
Ignatova, E.	eP013
Igulu Bandese, N.	eP386
Iida, T.	eP584
Iihara, H.	eP004, eP016, eP019
Ilie, G.	eP574, eP648
Iliescu, C.	eP716
Iliescu, G.	eP716
Im-Ryung, K.	eP676
Im, S.A.	eP504
imai, H.	eP080
Inamdar, M.B.	eP365
Inglis, J.	eP034, eP304, eP615, eP628
Inglis, J.E.	eP360
Innocentini, L.M.A.R.	eP324
Inocêncio Vasques, C.	eP374, eP473
Isaac, K.	eP389
Isenberg-Grzeda, E.	eP104, eP105
Isenring, L.	eP306, eP308
Ishida, K.	eP011
Ishiguro, A.	eP030
Ishii, T.	eP606
Ishikawa, S.	eP403
Itaya, K.	eP032, PS19
Ito, R.	eP249
Iwamoto, Y.	eP016
Iwata, H.	eP565, eP630
Iyengar, V.	eP063
Izawa, N.	eP019
Izgu, N.	eP221
Jabbarzadeh, F.	eP242
Jacquot, J.	eP493, eP460
Jaeger, T.	eP707
Jager-Wittenaar, H.	eP308
Jaguar, G.	eP134, eP135
Jahan, S.	eP349
Jain, K.	eP629
Jamali, A.	eP408
James, K.	eP573
Jan, K.	eP487
Janah asmaa.janah@inserm.fr, A.	eP055
Janah, A.	eP395
Janaki, M.	eP620
Janelsins C, M.	eP304
Janelsins, M.	eP034, eP520, eP615, eP628, eP715
Janelsins, M.C.	eP360
Jang, J.S.	eP245
Jansen, F.	eP085, eP424, eP509, eP511, eP595, PS09
Jansen, L.	eP598
Jantra, T.	eP027
Jarden, M.	eP076, eP226, eP426, eP484, eP592
Jatoi, A.	eP615, eP699
Jauwena, O.	eP521
Jean-Pierre, P.	eP132
Jefford, M.	PS44, PS48
Jennifer, B.	eP521
Jeong, B.K.	eP546
Jeong, J.Y.	eP435
Jeong, S.	eP638
Jia-luo, C.	eP240
Jia, W.H.	eP675
Jill, I.	eP521

Jim, H. eP129
Jin Seok, A. eP676
Jin, R. JS14
Jo, E. eP431, eP468
Joaquim, A. eP694
Johansen, C. eP690
Johansson, J.E. eP247
Jomaa, M.K. eP284
Jones, P. eP294, eP295
Jones, R. eP043
Jong Hyock, P. eP632
Jontell, M. eP264
Joo, S. eP453
Jordan, K. eP020, eP021
Joshi, A. eP400
Joshi, S. eP657
Juergens, R. eP092
Juhee, C. eP676
Jui-Chun, C. eP123
Jung Hun, K. eP245
Jung, D. eP358
Jung, S. eP702
Jungphichanvanich, A. eP027
Juric, D. eP630
kabbani, M. eP469, eP474
Kabir, M.S. eP412
Kabir, T. eP710
Kacel, E. eP524
Kadam, N. eP353
Kadoya, K. eP276
Kaffenberger, B. eP658
Kainickal, C.T. eP345
Kaira, K. eP080
Kakizawa, M. eP560
Kalam, M.A. eP563
Kalnicki, S. eP674
Kalofonos, C. eP237
Kalpakidou, A. eP417
kamal, E. eP457
kamal, N. eP457
Kamath, J. eP154
Kamei, Y. eP001
Kamen, C. eP034, eP228, eP520, eP628
Kaminski, I. eP659, eP667
Kamisako, M. eP603
Kamposioras, K. eP192
Kanazawa, H. eP420
Kanceva, R. eP298
Kang, D. eP676
Kang, J.H. eP064
Kanno, T. eP329
Kannusamy, P.D. eP334
Kao, C.Y. eP207
Kapucu, S. eP133
Kar, M. eP339
Karaaslan Eser, A. eP510
Karadas, C. eP221
Karam, I. eP088
Karino, M. eP329
Karni, R. eP582, eP629
Karuturi, M. eP234
Kasahara, E. eP249
Kashif, M. eP349, eP681
Kassa, R. eP466
Kassem, N. eP340
Kasvis, P. eP061, eP128, eP130, eP310, eP311, eP624, PS66
Katagiri, H. eP606
Kataoka, Y. eP261
Katia, P. eP673
Katsumata, N. eP249
Katsura, K. eP330
Kaur, S. eP495
Kaushik, D. eP302
Kav, S. eP410, eP510, eP518
Kav, T. eP309
Kawabata, T. eP227
Kawagishi, R. eP011
Kawaguchi, N. eP261
Kawaguchi, T. eP019
Kawakami, A. eP214
Kawakami, M. eP603
Kawamitsu, K. eP276
Kawamoto, Y. eP030
Kawamura, T. eP227
Kawana, H. eP333
Kawazoe, H. eP001, eP004
Kawubiri, W. eP391
Kayahara, T. eP091, eP403
Kayal, S. eP459
Kayumba, A. eP257, eP299
Ke, Y. eP607, eP608, eP611, eP613
Keam, B. eP687
Keefe, D. eP429
Keeley, V. eP417
Kelly, J. PS46
Kemp, E. eP160
Kenmotsu, H. eP227
Kennedy, G. eP251
Kennewell, T. eP244
Kenzik MS- PhD, K.M. eP138
Kersten, C. eP046
Kesarwani, A. eP132
Kesler, S. eP604
Ketcher, D. eP622
Keyssar, R. PS12
Khadam, A. eP354
Khalil, H. eP427
Khan, S. eP375
Khanjani, M. eP105
Khanna, V. eP348
Kharetia, P. eP462
khurshid, M. eP175
Kibet, H. eP161
Kilara, N. eP620
Kilgour, R. eP624
Kilgour, R.D. eP311
Killela, M. eP579
Kim, D.Y. eP435
Kim, H. eP303, eP429
Kim, H.J. eP245
Kim, H.S. eP453
Kim, I. eP543, eP544
Kim, J. eP546
Kim, J.H. eP546
Kim, J.J. eP433, eP619
Kim, J.M. eP677
Kim, K. eP546

Kim, K.N. eP677
Kim, M. eP687
Kim, M.K. eP609
Kim, P. eP716
Kim, S. eP303, eP370, eP546
Kim, S.H. eP482
Kim, S.S. eP546
Kim, T.Y. eP504
Kim, Y. eP635
Kim, Y.B. eP546
Kimata, Y. eP565
Kimoto, S. PS23
Kirkham, A. eP549
Kirkova, Y. eP097
Kis, E. eP087
Kiselnikova, L. eP726
Kiss, N. eP164, eP306, eP612
Kitagawa, K. eP016
Kitagawa, M. eP603, eP606
Kitahara, T. eP276
Kitamura, K. eP565
Kittang, J. eP567
Kizilaslan, D. eP696, eP698
Kjeldsen, L. eP484
Kjellgren, K. eP275
Klampe, C. eP699
Klastersky, J. eP257, eP299, PS25
Kleckner, A. eP034, eP304
Kleckner, I. eP034, eP304, eP615, eP628, eP715
Klemanski, D. eP165
Knebel, F.H. eP250, eP323
Kneipp, S. eP579
Knoerl, R. eP700
Knox, A. eP219
Knox, J. PS51
Kobayashi-Taguchi, K. eP001
Kobayashi, H. eP227
Kobayashi, T. eP330
Kobayashi, Y. eP030
Kober, K. eP090, eP223, eP277, eP489, JS16, PS05
Koch-Gallenkamp, L. eP593, eP598
Kochovska, S. eP446
Koczwara, B. eP160, PS48
Koczywas, M. eP398
Kogawa, R. eP032, PS19
Koh, S.J. eP064
Kohli, C. eP486
Koike, Y. eP032, PS19
Kolarova, I. eP708
Komatsu, H. eP011
Komatsu, Y. eP030
Komi, Y. eP261
Kondo, K. eP565
Kong, M. eP546
Kong, Y.C. eP548
Konishi, N. eP603, eP606
Konishi, T. eP254
Konomatsu, A. eP249
Koo, D.H. eP064
Koon, H.K. eP471
Kooner, S. eP111
Koproski, T. eP212
Korakis, I. eP317
Korman, M.B. eP104, eP105
Korogianos, A. eP192
Kotake, M. eP080
Kouloulias, V. eP259
Koumakis, G. eP237
Kouri, M. eP259
Kousei, O. eP584
Kouvaris, I. eP259
Kovacevic, T. eP222
Koyama, A. eP500
Kraj, L. eP297
Krebber, A.M.H. eP509
Krecke, C. eP527
Kreis, R. eP141
Kreuzberger, N. eP020, eP021
Krikelis, D. eP192
Krishna, L. eP463, eP464
Kristensen, M. eP308
Krivorotko, P. eP630
Krok-Schoen, J. eP551, eP552
Kruglova, L. eP665, eP666
Kruse, V. eP086
Kryzanowska, M. eP162
Krzyzanowska, M. eP166, PS51
Kubecova, M. eP708
Kuchonthara, N. eP027
Kudo, Y. eP333
Kuhr, K. eP020, eP021
Kuipers, F. eP258
Kukreti, V. eP162, eP166
Kumagai, Y. eP565
Kumar Veluswamy, S. eP126
Kumar, L. eP253
Kumar, R.R. eP345
Kumar, S. eP114, eP125, eP373, eP655, eP712
kumar, V. eP137
Kunishima, Y. eP584
Kunos, C. eP710
Kunte, C. eP087
Kuo, H.J. eP312
Kuol, N. PS04
Kurian, A. eP529, eP639
Kurihara, A. eP492
Kurita, G. eP414
Kurrle, S. eP446
Kurt, B. eP133
Kusakabe, E. eP001
Kusakawa, G. PS23
Kuyoki, O. eP658
Kuznecova, G. eP352, eP662
Kuznecovs, S. eP352, eP662
Kuznetsov, V. eP644
Kwon, J.H. eP435
Kwong, B. eP678
Kyrodimos, E. eP259
Lach, J. eP043
Lacouture, M. eP658
Lacouture, M.E. eP664
Ladjadj, Y. eP466
Lahijani, S. eP531
Lahoti, A. eP202
Lai, C.H.N. eP415
Lai, O. eP232
Laing, E. eP421
Lakdizaji, S. eP242

Laksameekarnkha, M. eP027
Lalami, Y. eP257, PS25
Lalani, A. eP692, eP701
Lalich, D. eP108, eP109
Lall, R. eP535
Lalla, V.R. eP344
Lam, C. eP502
Lam, H. eP006, eP007, eP118, eP402, eP663, eP669, eP695
Lam, L. eP446
Lamb, S. eP535
Lambrichts, I. eP659, eP667
Lamoussenery, D. eP624
Landers, M. eP555
Lane, K. JS07
Lang, A. eP707
Langin, H. eP363
Lao, M. eP110, eP122
Lao, N. eP368
Lapid, M. eP479
Laribi, K. eP218
Lars, K. eP076
Larsen Baekgaard, H. eP197
Larsen, A. eP426
Larsen, H.B. eP198, eP488
Lartigau, E.F. eP363
Latiano, T.P. eP293
Lau, A.J. eP283
Lausen, B. eP197
Laxman, P. eP104
Lazaridis, G. eP192
Le Bihan, C. eP395
Le Deley, M.C. eP363
Le W., L. eP166
Le, B. eP446
Le, L. PS51
Lea, S. eP472
Leach, C. eP441, PS42
Leah, D. eP118
Leang Cheah, S. eP446
Leano, A. eP104
Leao, P.M.D.M. eP268
Lebaron, V. eP043
LeBlanc W., T. eP026, PS63
LeBlanc, T. eP152
LeBoeuf, N. eP722, eP724
Leckey, J. eP579
LeConte, B. eP629
Lee, A.J. eP704
Lee, C. eP267, eP350
Lee, D.S. eP546
Lee, G.L. eP503
Lee, H. eP168
Lee, J. eP088, eP095, eP096, eP100, eP303, eP713, PS34
Lee, J.H. eP546
Lee, J.T. eP645
Lee, K. eP505
Lee, K.H. eP064, eP245, eP504
Lee, K.M. eP358, eP440, eP504, eP506
Lee, L.Y. eP351
Lee, M. eP453
Lee, M.A. eP435
Lee, M.H. eP064
Lee, S.C. eP713
Lee, S.T. eP687
Lee, V. eP179
Lee, Y.H. eP123, eP381, eP642, eP668
Lee, Y.J. eP631
Leemans, C.R. eP085, eP509, eP595
Lefebvre, G. eP363
Lehane, E. eP555
Lei, Y. eP301
Leighl, N. PS51
Leis, A. eP536
Lemanska, A. eP597
Lemonde, M. eP396, eP557
Lennon, O. eP626
León-Rodríguez, E. eP545
Leonenko, V. eP644
Leow, J.L. eP149
Leung, E. eP059, eP099, eP100, eP118, eP220, eP669, PS34
Levine, J. eP090, eP223, eP277, JS16
Levine, M. eP516
Levy-Milne, R. eP079
Lewis, D. eP059, eP099, eP118, eP220
Lheureux, S. PS51
Li, C. eP057, eP240
Li, C.K. eP471
Li, I.F. eP381
Li, J. eP346
Li, M. eP131, PS51
Li, P. eP248
Li, S. eP678
Li, T. eP379, eP526
Li, X.Z. eP675
Li, Y.C. eP341
Liakouli, Z. eP259
Liao, M.W. eP044
Liao, W.J. eP322
Liao, Z. eP425
Lichtman, S. eP234
Lickliter, J. eP298
Liew, S.H. eP087
Ligibel, J. eP700
Lillelund, C. eP618
Lim, J. eP536
Lim, S.E. eP713
Lima, R. eP070
Lima, R.A.G. eP525
Lima, R.A.G.D. eP475
Lin, C.C. eP347
Lin, C.Y. eP117
Lin, F.C. eP178
Lin, J.N. eP331, PS15
Lin, P.J. eP034, eP304, eP615, eP628, eP715
Lin, W.L. eP199
Lin, Y.W. eP318
Lindberg, H. eP690
Linden, K. eP022
Linden, K.G. eP670
Linder, L. eP089
Lindgren, A. eP533
Lindhoff Larsson, A. eP539
Ling Ling, S. eP611
Liontos, M. eP192
Lipe, B. eP715

Lipp, E. eP279
Lipson-Smith, R. eP612
Lira, E. eP233
Lisotto, P. eP258
Lissenberg-Witte, B. eP424, eP511, PS09
Lissenberg-Witte, B.I. eP509, eP595
Litos, I. eP192
Liu, D. eP053, eP062, eP141, eP361, eP431, eP450, eP468
Liu, E. eP425
Liu, G. eP111, eP131, eP166
Liu, H.E. eP561
Liu, J.J. eP228
Liu, M. eP603, eP606
Liu, T.M. eP241
Liu, W. eP025
Liying, Z. eP220
Lock, M. eP007
Locke, S. eP152
Lockhart, J. PS58
Lodewijckx, J. eP659, eP667
Loeliger, J. eP306, eP612
Loerzel, V. eP194
Logozzo, M. eP163
Loh, K.P. eP234, eP443, eP628, JS15
Loh, K.W.J. eP611, eP613
Lohfeld, L. eP548
Loibl, S. eP630
Loizidou, A. eP299, PS25
Lombard, J. eP362
Lomborg, K. eP484
Lonati, V. eP364
Lopane, D. eP397
Lopes-Júnior, L.C. eP070, eP475, eP525
Lopes, R.M. eP269
Lopez-Mattei, J. eP716
Lopez, G. eP069, eP304, eP360, eP615, eP628
López, M.D. eP045
Loprinzi, C.L. eP720
Lorca Parraguez eP378
Kinesiologo, L.A.
Lorentz, J. eP356
Lorenz, K. eP136
Loscalzo, M. eP521
Loucks, A. JS14
Lovas, M. eP162
Lovell, M. eP446
Low, G. eP629
Low, L.L. eP611, eP613
Low, S.G. eP611, eP613
Løyland, B. eP081
Lozza, L. eP660
Lteif, A. eP630
Lu, C. eP407
Lu, Y. eP590
Lu, Z. eP024, eP053, eP062
luca, G. JS03
Lucas, L. eP234
Lucey, P. eP674
Lui, J.Y.H. eP024
Lui, K.H. eP415
Lumprasert, W. eP027
Lund, C.M. eP226
Lund, J. eP443
Luo, Y.W. eP241
Luque, L. eP121, eP429
Lustberg, M. eP165, eP577
Lustberg, M.B. eP551
Lustberg, M.M. eP552
Lyons, K. eP600
M'Bailara, K. eP528
Ma, S.Y. eP546
Macchi, F. eP660
Macdonald, C. eP380
Macdonald, H. eP600
Macedo, F. eP296
Macedo, L.D. eP324
Maciejak, M. eP297
Macpherson, C.F. eP089
madan, K. eP137
Madan, R. eP553
Madden, K. eP468
Maeder, A. eP160
Maegawa, J. eP565
Maes, A. eP659, eP667
Magarajah, G. eP713
Magni, E. eP432
Magnuson, A. eP715
Maguire, R. eP166
Mahieu, A. eP439
Mahran, E. eP037
Maishman, T. eP601
Majeed, A.B.B.A. PS16
Major, B. eP479
Majorana, A. eP243, eP263
Majumdar, J. eP516
Maka, V. eP126, eP620
Maka, V.V. eP157, eP703
Makki, M.A.A. PS16
Makrantonakis, P. eP237
Malheiro, M. eP289
Malik K., R. eP723
Mallaiah, S. eP113
Mallea, P. eP057
Mallesara, G. eP370
Maloney, C. eP010
Malton, S. eP682
Malveaux, D. eP077
Mamesaya, N. eP227
Mandal, N. eP387, eP477
Mandaliya, H. eP370
Mandavkar, S. eP671
Manders, R. eP597
Mangenot, M. eP460
Mani, U. eP353
Manias, E. eP183, eP478
Manna, A. eP384, eP385
Manten-Horst, E. PS30
Mantik, M. eP465
Manzullo, E. eP202
Marcantognini, G. eP060
marete, J. eP186
Maria Fernandes, P. eP134
Marilyn, H. eP090
Marin Melia, M. eP120
Marinello, A. eP397
Marliot, G. eP363
Marmagkiolis, K. eP716

Marmorino, F. eP293
Marshall, A. eP139, eP239
Marshall, E. eP294, eP295
Marsiske, M. eP524
Marston, C. eP612
Martelli, L. eP092
Marth, C. eP707
Martin, A. eP612
Martin, A.I. eP116
Martin, M. PS31
Martínez-Marín, V. eP236
Martino, R. eP380
Martins, A. eP289, eP472
Martins, L. eP325
Marupakula, V. eP141
Marx, W. eP308
Marzal-Alfaro, E. eP147
Masakazu, T. eP261
Mascherini, M. eP087
Mashtoub, S. eP244
Masood, S. eP338, eP342
Mastick, J. eP090, eP223, eP277, eP489, JS16, PS05
Masuda, Y. eP606
Masujima, M. eP565
Matsuda, C. PS19
Matsuda, Y. eP329
Matsui, Y. eP011
Matt, L.M. PS16
Matteucci, P. eP087
Matthys, M. eP523
Mattie, H. eP360
Maurer, C. PS25
Maxymiw, W. eP319
May, C. eP601
Mayden, K. eP718
Mayer, D. PS48
Mayer, F. eP292
Mayer, I. eP630
Mayo, B. PS17
Mayo, S. eP162, eP571, eP621
Mazor, M. eP106, PS45
Mazuquin, B. eP535
Mazzanti, P. eP060
Mazzetti, M. eP636
Mc Caffrey, J. eP313
McBride, C. eP108
McCann, C. eP088
McCarthy, B. eP555
McCarthy, D. eP132
McCaul, J. eP087
McCauley, V. eP160
McCleary, N. eP700
McCrae, C.S. eP524
McCulloch, L. eP718
McCulloch, T.M. eP380
Mccullough, R. eP255
McDonald MD, A. eP138
McDonnell, K.K. eP084
McFarlane, T. eP012, eP235
McGhan, G. eP428
McGuire, D.B. eP654
McKenzie, D. eP549
McKenzie, E. eP012, eP101, eP401, eP402, eP695
McLaughlin, E. eP564, eP573
McLellan, B. eP658
McLellan, B.N. eP673, eP674
McLeod, A. eP235
Mcpherson, M.L. eP418
McQuade, R.M. PS04
McSharry, V. eP313
McWilliams, L. eP570
Mebis, J. eP659, eP667
Meena, J. eP321
Meguerditchian, A. PS66
Mehta, A. eP129
Mehvar, R. eP672
Melisko, M. eP523
Mendoza, T. eP077
Menglei, C. eP409
Menon, M. eP480
Menon, S. eP717
Menon, U. PS55
Merazi, N. eP466
Merino, M. PS20
Merkx, T. eP335
Merlo, J. eP243, eP263
Mert, M. eP146
Metchiem Oumbe, R. eP208
Metrakos, P. eP624
mg, J. eP126
Miaskowski, C. eP073, eP081, eP090, eP106, eP223, eP277, eP489, eP585, JS16, PS05, PS45
Mikkelsen, M.K. eP226
Mikoshiba, N. eP214
Mikulas, K. eP065
Mikus, G. eP292
Milakovic, M. eP006, eP007
Milanti, A. eP483
Milbury, K. eP113
Miller, R. eP121
Mills, D. eP630
Minato, K. eP080, eP016
Minatogawa, H. eP019
Ming-Hsiou, L. eP072
Minghui, L. eP409
Minhas, S. eP349, eP681
Minicucci, E.M. eP265, eP372
Minowa, C. eP560
Minvielle, E. eP371
Mir, N. eP138
Miranda Baleiras, M. eP289
Miranda-Silva, W. eP250, eP323
Mirhosseini, M. eP452
Mishra, S. eP102, eP137, eP253
Missel, M. eP587, eP592
Mistry, P. eP535
Mistry, R. eP480
Mitchell, C. eP244
Mitchell, G. eP183, eP478
Mitsimponas, N. eP192
Mittal, K. eP033
Mituhashi, N. eP606
Miyagishima, T. eP030
Miyaji, T. eP019
Miyata, H. eP249
Miyawaki, E. eP227
Miyawaki, T. eP227
Miyuki, E. eP500

Mizuno, M. eP091, eP403
Mizusawa, M. eP249
Möbus, V. eP292
Moeller, T. eP592
Mohabir, R. eP163
Mohamed, A. eP469, eP474
Mohamed, M. eP443, JS15
Mohammadi, I. eP286
Mohammed, S. eP144
Mohan, A. eP495
Mohand-Oussaid, A. eP466
Mohanraj, L. eP127
Mohile, N. eP715
Mohile, S. eP225, eP228, eP443, eP520, eP615, JS15
Moir, G. eP087
Molasiotis, A. PS22
Molina Mata, K. eP120
Molinares, D.M. eP594
Møller, T. eP076, eP618
Mols, F. eP094
Monahan, K. eP717
Mondal, P. eP353
Monsef, I. eP020, eP021
Montanaro, F. eP660
Monteiro, A.R. eP296
Monteiro, M. eP695
Montezari, H. eP672
Montezuma, M. eP714
Moon, I.S. eP280
Moon, J.Y. eP506
Mooney, S. eP521
Moore, S. eP105
Morabito, A. eP366
Moradian, S. eP166
Morais-Silva, I. eP328
Morais-Silva, T. eP328
Morales Gonzalez, M. eP116
Moreland, E. eP203
Morello, E. eP243
Moreno-Garcia, M.L. eP233
Moretto, R. eP293
Morgan, J. eP467
Morgese, F. eP060
Morhe, E. eP082
Mori, K. eP227, eP606
Moriarty, K. eP010
Morimoto, Y. eP091
Morishita, S. eP210, eP540, eP594
Morita, H. eP019
Morita, P. eP166
Moriyama, Y. eP276
Morris, S. eP723
Morrow, G. eP034, eP715
Morrow, G.R. eP360
Moss, L. eP150
Mostaghimi, A. eP724
Mosteiro Lamas, M. eP120
Mosteiro-Diaz, P. eP483
Mougeot, F. eP247, eP344
Mougeot, J.L. eP247, eP344
Mowatt, D. eP087
Ms Ondreka, D. PS06
Muckaden, M.A. eP400
Muhammad Hasan, A. eP219
Muir, T. eP087
Mukelabai, M. eP195
Mullee, A. eP313
Mullen, L. eP555
Muñoz, A. eP236
Muñoz, D. PS26
Murai, T. eP032, PS19
Murakami, A. eP001
Murakami, H. eP227
Muranaka, T. eP030
Murdaugh PhD, D. eP138
Murgor, L. eP161
Muro, M. eP332
Murphy A, B. PS32
Murphy, A. eP555
Murphy, V. eP219
Murray, A. eP104, eP105
Murray, N. eP520
Murtagh, F. PS59
Murthy, M.K. eP703
Mustian, K. eP034, eP520, eP615, eP628, eP715
Muyodi, D. eP161
Myers, J. eP104, eP105, eP143
Nabekura, T. eP276
Naberhuis, J. eP053, eP361
Nabiee, R. eP672
Nabirotchkina, E. eP218
Nadler, M.B. eP589, eP602
Naeije-Overtoom, L. eP470
Naert, E. eP444
Nagaratnam, S. eP111
Nagasaka, A. PS19
Nagashima, M. eP276
Nagi, A.H. eP681
Naito, T. eP227, eP308, eP606
Nakagaki, M. eP009, eP251
Nakagawa, K. eP500
Nakagawa, T. eP333
Nakajima, T. eP019
Nakamura, M. eP030, eP032, PS19
Nakamura, T. eP001
Nakashima, K. eP227
Nakayama, R. eP333
Nakura, M. eP500
Nalini, K. eP126
Nan, Z. eP407
Nandagopal MD, L. eP138
Nandi, R. eP253
Nandi, S. eP412
Naning, W. eP392
Napoles, A. eP512, eP588, eP599, eP625
Napoli, J. eP163
Naqvi, F. eP428
Naqvi, S. eP053, eP062, eP582, eP629
narendra, H. eP365
Narley Pires Vieira, N. eP473
Naronha, V. eP400
Nascimento, L. eP070
Nassairirad, S. eP672
Nasyrova, R. eP013
Nath, S.S. eP163
Naughton, M.J. eP551
Navari M., R. eP026
Navari, R. PS63

Navari, R.M. eP006, eP007
Navarro Martin, A. PS69
Nayak, B.S. eP326
Nazarian, R. eP673, eP674
Neate, J. eP601
Nebuloni, D.R. eP725
Nedolisa .O., A. eP075
Neijenhuijs, K. eP652, eP653, PS09
Neil-Sztramko, S.E. eP602
Nelson, C. eP722, eP724
Neo, P. eP503
Neves Silva Guerra, E. eP473
Neves, M.G. eP725
Neves, M.T. eP289
Newsome, B.R. eP084
Ng, A. eP633
Ng, C.C. eP168
Ng, C.H. eP463, eP464
Ng, D.Z.W. eP611, eP613
Ng, J.X. eP463, eP464
Ng, N. eP434
Ng, T. eP607, eP608
Ngan, M.P. eP024
Ngo-Huang, A.T. eP113
Nguyen, K. eP053, eP141
Niazi, S. eP527
Nicolatou-Galitis, O. eP153, eP259
Niedzwiecki, A. eP315
Nielsen, D. eP226
Nielsen, M.K.F. eP198, eP488
Niermann, K. PS32
Nightingale, G. eP234
Nigro, O. eP262, eP432
Nikolaou, M. eP192
Nikolic, N. eP693
Nischal, A. eP566
Nishikawa, S. PS19
Nitin, O. eP673
Nizam, A. eP343
Noble, B. eP446
Noble, S. PS02
Noé, L. eP659, eP667
Nogueira, R.M.G. eP268
Nolan, T. eP577
Nonoyama, M. eP557
Noonan, A.M. eP551, eP552
Noonan, B. eP555
Nordan, L. eP527
Nordentoft, S. eP426
Nordman, I. eP362
Noreika, D. eP150
Noronha, V. eP065
Nørskov, K. eP484
Norton, S. eP520
Notsu, A. eP227
Noventa, S. eP293
Nowell, A. eP104, eP105
Nunes, M. eP070
Nurgali, K. PS04
Nuristani, H. eP521
Nuttall, J. eP601
Nwosu, A. eP075
Nyhus Boe, H. eP193
O Mahony, M. eP555
O'connor, D. eP626
O'Connor, M. eP517, eP519
O'Donoghue, A. eP313
O'Donoghue, N. eP313
O'neill, M. eP142
O'Rourke, M. eP225
Obenchain, R. eP521
Obeng, P. eP173
Oberoi, S.K. PS26
Obrecht, S. eP443, JS15
Obukhov, Y. eP726
Odabasi, G. eP696, eP698
Odili, J. eP087
Ofner, S. eP115
Ogawa, Y. eP565
Ogbonna, A. eP075
Oh, G. eP506
Oh, G.H. eP358, eP504
Oh, K.H. eP440
Oh, S. eP433, eP454
Oh, S.B. eP619
Oh, S.Y. eP064, eP245, eP433, eP619
Ohlsson-Nevo, E. eP487, eP558, eP567
Ohno, Y. eP019
Okayama, T. eP227, eP606
Okazumi, S. eP276
Okpako, M. eP456
Oku, T. eP565
Okui, R. eP697
Oldenmenger, W. JS04
Oldmeadow, C. eP370
Oliveira de Almeida Marques da Cruz, F. eP205
Oliveira, A.S. eP324
Oliveira, M.C.Q. eP725
Oliveira, T. eP336
Olson, R. eP012
Olson, T. PS31
Oluyase, A. PS59
Olver, I. eP499, PS08
Omar, R. eP417
Omori, S. eP227
Ongel, E. eP062
Ongole, R. eP326
Onigbogi, O. eP423, eP423
Onishi, H. eP210
Ono, A. eP227
Ono, Y. eP032, PS19
Onodera, K. eP249
Oo, T. eP238
Oprea-Lebedenco, M. eP291
Orcurto, A. eP092
Orlandi, E. eP660
Orlando, A. eP087
Orsey, A. PS11
Ortega, L. eP236
Ortiz-Brugués, A. eP317
Ortiz, C. eP512, eP588, eP599, eP625
Osazuwa-Peters, N. PS07
Ose, J. eP057
Osei-Tutu, L. eP173
Oshiro, T. eP276
Oskarsson, A. eP558
Osman, M. eP151

Osmola, M.	eP297
Ostwal, V.	eP671
Otobe, E.	eP016
Ottaviani, G.	eP252
Ottery, F.	eP308
Otto, A.	eP622
Otto, C.	eP163
Ou, J.	eP590
Overcash, J.	PS55
Overgaard, D.	eP484
Ow, S.	eP713
Owenby, S.	eP129
Owens, O.L.	eP084
Oyekami, G.	eP219
Oyer, R.	eP234
Oyero, S.	eP075
Oza, A.	PS51
Ozalp, E.	eP299
Ozcan, İ.	eP035
Ozdemir, L.	eP221
Pachecho, G.	eP219
Pachón, V.	eP236
Packer, E.	eP112, eP522
Padron, A.	eP524
Padrones Sanchez, S.	eP120
Paesmans, M.	eP257, eP299
Pai, R.R.	eP326
Paice, J.	eP441
Paintsil, V.	eP173
Palanirajan, V.	PS16
Palaskas, N.	eP716
Palesh, O.	eP529, eP604, eP639, PS01
Pallanki, S.D.	eP271
Paluri MD, R.	eP138
Panda, N.	eP404
Pandit, A.	eP137
Pang, C.L.K.	eP590
Pang, G.	eP503
pangtey, R.	eP646
Pannekoeke, L.	eP659, eP667
Paolieri, F.	JS03, eP293
Papademetriou, E.	eP026
Papadopoulos, V.	eP192
Papadopoulou, E.	eP259
Papageorgiou, E.	eP192
Papakostas, P.	eP237
Papakotoulas, P.	eP237
Papandreou, C.	eP237
Papatsimpas, G.	eP237
Papaxoinis, G.	eP192
Pappot, H.	eP145, eP690
Parahyba, C.J.	eP250
Parati, M.C.	eP364
Pardon, K.	eP444, eP447, PS52
Park, E.	eP433
Park, J.	eP064, eP303, eP630
Park, K.	eP433, eP619
Park, K.R.	eP546
Park, M.	eP431, eP450
Park, S.E.	eP028, eP245
Park, Y.H.	eP630
Parker, N.	eP108, eP109
Parmigiani, M.	eP636
Partelli, S.	eP367
Pasetka, M.	eP008, eP290
Passero, F.	eP715
Patel, J.	eP717
Patel, K.	eP023
Patel, M.	eP136
Patel, P.	eP376, eP521, eP721
Patel, S.	eP421
Patil, A.	JS15
Patil, V.	eP400
Patino, M.	eP629
Patronidis, F.	eP061, eP128, eP130
Patterson, P.	eP499, PS14
Paul, S.	eP090, eP106, eP140, eP277, eP489, JS16, PS05
Paul, S.M.	eP081
Paulose, N.	eP074
Pavesi, C.	eP397
Pavlock, S.	eP132
Pawar, D.	eP114, eP125, eP373, eP655, eP712
Pawliuk, C.	eP470
Pearson, E.	eP211, eP212
Pearson, S.	eP721
Pedersen, J.H.	eP587
Pederson, L.	eP479
Pedras, R.	eP065
Pei-Ling, K.	eP072
Pelger, R.C.M.	PS30, PS54
Peña Nieves, A.	eP422
Peng, L.W.	eP471
Peng, X.	eP590
Pentheroudakis, G.	eP237
Peoples, A.	eP057
Peppone J, L.	eP304
Peppone, L.	eP034, eP520, eP615, eP628
Pereira-Da Silva, G.	eP475
Pereira-Da-Silva, G.	eP525, eP070
Pereira, D.B.	eP524
Pereira, T.	eP296
Peretti-Watel, P.	eP395
Perez Martin, J.	eP120
Perez-de-Acha, A.	eP233
Perez-de-Celis-Herrero, C.	eP233
Perez, R.	eP576
Peria, F.	eP419
Perz, J.	PS03
Pesantez, D.	PS26
Peters, K.	eP279
Peters, M.	eP377
Petrelli, F.	eP364
Petrou, S.	eP535
Peverelli, G.	eP293
Phair, T.	eP451
Philips, A.	eP458
Phillips, J.	eP446, eP448, PS18
Phillips, R.	eP467
Phillipson, C.	eP448
Phyu, W.L.L.	eP515
Pickrell, W.	eP350
Pidduck, W.	eP012, eP059, eP099, eP100, eP118, eP220, PS34
Piechotta, V.	eP020, eP021
Pietra, C.	eP024
Pigliacelli, F.	eP679, eP680, eP705

Piil, K.	eP145, eP426, eP592
Pillai, M.R.	eP345
Pinotti, G.	eP262, eP432
Pisegna, J.	eP551
Plant, H.	eP343
Plasser, J.	eP378
Platschek, A.M.	eP216
Pleimes, D.	eP292
Plotkin, E.	eP234
Plumb, S.	eP443
Poggio, C.	eP397
Poh Loh, K.	eP304
Poh, K.L.	eP228
Pokataev, I.	eP013, eP014
Pomarico, R.	eP432
Poole, K.	eP597
Poon, E.	eP607, eP608
Poon, P.	eP427
Pope, A.	eP442, PS51
Popova, A.	eP013
Popovic, M.	eP006, eP007
Porta-Sales, J.	eP045
Porter, S.	eP183, eP478
Porz, R.	eP445
Postupack, R.	eP524
Potluri, R.	PS63
Potting, C.	eP246
Poulose, R.	eP495
Powell, C.	PS31
Powers-James, C.	eP069
Powis, M.	eP162
Prabhash, K.	eP400
Prasad AJ, M.	eP098
Pratap Singh, V.	eP253
Premkumar, K.	eP536
Prica, A.	eP578
Prince, R.	PS51
Pritzkuleit, R.	eP598
Provasoli, C.	eP397
Psirry, A.	eP259
Pu, Y.	eP301
Pucciarelli, M.G.	eP336
Pugliese, S.	eP678
Pulido, M.	eP116
Puts Martin, M.	eP166
Puts, S.	eP659, eP667
Qamar, S.	eP521
Qdaisat, A.	eP284
Qian, Y.	eP053, eP062, eP361, eP431
Qin, Y.	eP314
Qu, D.	eP503
Quaglino, P.	eP087
Quah, G.T.	eP370
Quah, J.H.M.	eP611, eP613
Quintanilla, B.	JS16
Qureshi, S.	eP566
Radhakrishnan, V.	eP458
Rafi, M.	eP345
Rafn, B.	eP549
Raftery, J.	eP601
Rahman, M.M.	eP338, eP342
Rahmani, A.	eP242
Rai, B.	eP553
RAJ Dr, D.	eP345
Rajkumar, R.	eP649
Rakovitch, E.	eP099
Ramadas, K.	eP345
Ramamoorthy, J.	eP458, eP459
Raman, S.	eP012
Ramaswamy, A.	eP671
Ramirez-Asensio, M.	eP139
Ramírez, E.	eP580
Ramirez, V.	eP376
Ramos, P.	eP718
Ramsdale, E.	eP304, JS15
Ramsdale, E.E.	eP360
Ramsdale, S.	PS46
Ramzi, M.	eP242
Rana, S.	eP554
Rancea, D.	eP163
Rancoita, P.M.V.	eP636
Randall, K.	eP362
Randazzo, D.	eP279
Rapoport, B.	eP017, eP124
Rashed, S.	eP415
Rashid, A.	eP498
Raskovic, G.	PS66
Rassekh, S.R.	eP470
Rasul, K.	eP038
Rath, M.	eP315
Rathore, P.	eP102
Ravi, P.	eP026
Ray, H.	eP612
Raymond, B.	eP448
Razvi, Y.	eP012, eP401, eP402, eP695
Reato, S.	eP432
Reblin, M.	eP622
Reddy, S.S.	eP703
Reddy, T.R.	eP623
Rees, C.	eP517
Regan, J.	eP355
Reidy, D.	eP163
Reidy, M.	eP555
Reijneveld, J.	eP424
reiko, K.	eP254
Ren, Y.	eP093
Renaud, J.	eP022
Reschke, J.	eP034
Resende, T.	eP065
Revuelta-Herrero, J.L.	eP147
Reyes, K.	eP700
Rha, S.Y.	eP095, eP096
Rhea, D.	eP110
Rhoten, B.	eP643
Rial, O.	eP204
Ribi, K.	eP092
Rico, V.	eP110, eP122, eP695
Ricz, H.M.A.	eP324
Rietkoetter, S.	eP092
Rijavec, E.	eP366
Rim, C.H.	eP546
Rimassa, L.	eP397
Rinaldi, S.	eP060, eP367
Ripamonti, C.I.	JS01
Risbud, R.	eP136
Ristevski, E.	eP427
Rithara, S.	eP186
Rivas, B.	eP376

Rizzi, G.	eP023
Roberge, M.	eP631
Roberts, K.	eP121
Robertson RN, M.	eP138
Robijns, J.	eP659, eP667
Robin, U.	eP559
Robinson, L.	eP408
Robinson, M.E.	eP524
Roccaro, S.	eP568
Rodgers, B.	eP654
Rodin, G.	eP131, PS51
Rodolfo Masera, G.L.	eP262
Rodríguez-Hernández, A.	eP236, PS26
Rodríguez-Ramírez, A.M.	eP545
Roeland J., E.	PS63
Roeland, E.	eP026
Roeniger, A.	eP580
Roerth, M.	eP592
Rojas Hernandez, C.	eP238
Rojas, C.	eP018
Rojek, N.W.	eP670
Rosa, A.	eP204
Rosado, M.N.	eP686
Rosenberg, A.	eP335
Rosenthal, D.	eP113
Rosenthall, L.	eP311
Rosett, H.	eP152
Rosin, F.C.	eP269
Rosin, F.C.P.	eP268
Rossi, A.	eP679, eP680, eP705
Rossini, D.	eP293
Roth, C.	eP158
Roug Ingerslev, L.	eP197
Roulston, F.	eP313
Round, J.	eP057
Roy, R.	eP404
Rozman de Moraes, A.	eP361
Rubab, Z.	eP320
Rubira, C.	eP336
Rudd, J.A.	eP024
Ruddy J., K.	eP026, PS63
Rugo, H.	eP630
Rummans, T.	eP479
Rumyantsev, A.	eP013, eP014
Rupel, K.	eP252
Rupérez, A.B.	eP236
rustagi, R.	eP646
Rutledge, R.	eP574, eP648
Ryan Wolf, J.	eP057, eP672
Ryoo, H.M.	eP704
Ryu, J.S.	eP677
Saab, M.	eP555
Sabiston, C.	eP142
Sacomori, C.	eP378
Saeki, T.	eP004
Saetta, A.	eP397
Safra, T.	eP630
Sagar, T.G.	eP458
Sahin, E.	eP146
Sahoo, P.	eP462
Saito, M.	PS60
Sakai, H.	eP500
Sakai, T.	PS23
Sakamoto, H.	eP420
Sakhri, S.	eP174
Sakji, I.	eP363
Saklnai, A.	eP671
Saleem, S.	eP461
Saleem, W.	eP038, eP039
Saleh Hassan Al Kadhi, F.	eP039
Saleh, F.	eP038
Saleh, R.R.	eP589
Saligan, L.	eP355
Salins, N.	eP400
Salvador, C.	eP236
Samantas, E.	eP237
Samayoa, C.	eP599
Šambić Penc, M.	eP537, eP542
Sameshima, L.	eP079
Sampaio, F.	eP694
Samsa, G.	eP152
Samuel, S.	eP623
Sanchez, N.F.	eP163
Sandström, P.	eP539
Sanjurjo-Saez, M.	eP147
Sano, Y.	eP603
Sansavino, S.	eP325
Santa Mina, D.	eP142
Santacroce, S.	eP579
Santana, M.J.	eP428
Santiguida, A.	eP162
Santini, D.	eP293
Santoro, A.	eP397
Santos-Silva, A.R.	eP725
Santos, J.	eP325
Santos, P.	eP325, eP336
Santoso, A.M.M.	eP085
Santoso, S.D.	eP465
Santoyo-Olsson, J.	eP512, eP588, eP599, eP625
Saraf, A.	eP274, eP534
Sargent, L.	eP127
Sasaki, A.	eP011
Sasaki, H.	eP565
Sathe, D.	eP114, eP125, eP373, eP655, eP712
Sato, A.	eP276
Sato, Y.	eP276
Satou, M.	eP011
Saunders, D.	eP267, eP375, PS36
Savina, S.	eP281
Sawadogo, M.	eP641
sawant, S.	eP231
Sawyer, R.	eP266
Saxena, P.	eP623
Saxton, J.	eP597
Sazdanic Velikic, D.	eP222
Sbrana, A.	JS03, eP293
Scartozzi, M.	eP366
Schaeffers, P.	eP159
Schapira, L.	eP529, eP639, eP691, PS13
Scheckel, B.	eP020, eP021
Scherrens, A.L.	eP439
Schimmer, A.	eP319
Schimming, D.	eP165
Schjølberg, T.K.	eP217
Schmerold, L.	eP026, PS63
Schmidt, M.	eP292
Schmiegelow, K.	eP197, eP198, eP488, eP592
Schnaitmann, N.	eP521

Schneider, M.	eP057
Schofield, P.	eP390
Schoueri, J.	eP209
Schover, L.	eP656, PS29
Schrader, P.	eP203
Schrotz-King, P.	eP057
Schueler, A.	eP298
Schuit, A.	eP424
Schwartz, N.	eP375
Schwartzberg, L.	eP023
Scott, J.	eP187
Scullion, B.	eP196
Seah, A.	eP334
Seah, D.	eP591
Seam, R.	eP688
Seam, R.K.	eP554
Sebastiani, S.	eP026
Seccareccia, D.	eP104
Secombe, K.	eP692, eP701, PS17
Sek, C.	eP334
Sekhina, O.	eP013
Sekhon, S.	eP079
Sekido, H.	eP316
Sekido, K.	eP316
Sekimoto, A.	eP214
Sekretareva, E.	eP726
Senderovich, H.	eP051
Seo, J.S.	eP635
Seo, K.S.	eP543, eP544
Seo, S.	eP305
Sereika, S.	eP066, eP547
Sersa, G.	eP087
Sette, C.	eP209
Shackelford, M.	eP169
Shah, N.	eP103
Shah, R.	PS33
Shaheen, Z.	eP175, eP683
Shaikh, A.	eP141
Shakian, L.	PS04
Shamim, W.	PS35
Sharafeldin MBBCh-MSc- PhD, N.	eP138
Shariq Mujtaba, J.	eP283
Sharma, A.	eP646, eP253, eP302, eP462
Sharma, P.	eP650, eP724
Shatokhina, E.	eP665, eP666
Shayne, M.	eP034, eP715
Shekhar, V.	eP050
Shen, H.	eP529, eP604, eP639
Shen, X.	eP286
Sherief, L.	eP457, eP461
Sherwood, P.	eP547
Shi, Q.	eP287
Shi, X.	eP344
Shibata, D.	eP057
Shibata, K.	eP016
Shibli, K.U.	eP038, eP039
Shiff, J.	eP104, eP105
Shim, J.Y.	eP454
Shimokawa, M.	eP004
Shimomura, K.	eP019
Shin, D.W.	eP632, eP638
Shin, K.	eP640
Shin, S.	eP359, eP638
Shin, Y.J.	eP546
Shinomiya, M.	eP016
Shirren, J.	eP692, eP701
Shoubridge, A.	eP266
Shu Chan, C.	eP199
Shu-Chan, C.	eP200
Shu-Chiung, L.	eP072
Shuhama, R.	eP419
Shuhov, O.	eP665
Shultz, G.	eP524
Shun, S.C.	eP312
Shwe, M.	eP283
Sibaud, V.	eP317
Sidhu, S.	eP079
Siegel, E.	eP057
Sierdziński, J.	eP297
Silva, H.L.M.	eP419
Silva, W.	eP714
Silveira, D.S.C.	eP525
Silveira, D.S.C.D.	eP475
Silver, J.K.	eP594
Simões, C.C.	eP265
Simon, T.	eP216
Sin, W.H.	eP651
Singer, S.	eP722, eP724
Singh, A.	eP575
Singh, H.	eP684
Singh, K.	PS62
Singh, N.	eP650
Singh, U.	eP566
Singhai, P.	eP530, eP400, eP455
Singhal, S.	eP691
sinha, A.	eP074
Sinn, D.H.	eP635
Sinnarajah, A.	eP428, eP436
Siosaki, A.T.	eP325
Siu, K.Y.	eP651
Siu, S.W.K.	eP415
Sjøgren, P.	eP414
Skaczkowski, G.	eP515, eP616, eP634
Skaltsa, K.	eP723
Skoetz, N.	eP020, eP021
Skomro, R.	eP536
Skrabal Ross, X.	eP499
Sleight, A.	eP600
Sloan, J.	eP479
Sloan, P.	eP170
Slusher, B.S.	eP018
Småstuen, M.C.	eP217
Smets, T.	eP447
Smit, E.F.	eP509
Smit, T.	eP017, eP124
Smith, C.	eP699
Smith, D.	eP720, PS32
Smith, D.K.	eP382
Smith, T.	eP398, eP656
Sneek, A.	eP159
So yoon, Y.	eP305
So Young, K.	eP632
Soares, R.	eP296
Soares, S.	eP336
Soerensen Led, J.	eP197
Soga, M.	eP330
Soga, Y.	eP332

Sogabe, S.	eP030
Soh, L.L.	eP613
Soiffer, R.	eP429
Soliman, H.	eP059, eP088, eP663, eP669
Solomon, N.	eP639
Somayaji, S.	eP703
Somers, V.	eP659, eP667
Sommeijer, D.	eP424
Son, K.L.	eP358, eP440, eP504, eP506
Sone, T.	eP032, PS19
Song cheol, K.	eP305
Song, H.	eP093, eP569
Song, T.	eP191
Sonis, S.	eP267
Soong, Y.L.	eP611, eP613
Sørensen, H.	eP217
Sorrell, M.E.	eP383
Soto-Perez-de-Celis E.	PS48
Soto-Perez-de-Celis, E.	eP233
Soucy, A.M.	eP063
Sougleri-, M.	eP237
Sousa, A.	eP289
Sousa, G.	eP296
Sousa, P.	eP059, eP099, eP100, eP118, eP220, eP401, eP402, PS34
Soy, L.	eP033
Spasic, J.	eP693
Spaulding, A.	eP577
Speke, A.	eP105
Speksnijder, C.	eP335
Spencer, K.	eP417
Sridhar, S.	PS51
Srilatha, B.	eP607, eP608
Srinivasan, K.	eP671
Stahl, M.	eP298
Staples, S.	eP715
Starkhammar, H.	eP275
Stasinos, I.	eP153
Stathopoulos, K.	eP299
Steer, B.	eP306
Stegenga, K.	eP089
Stein, K.	eP656
Steineck, G.	eP533
Stejskal, J.	eP708
Stenina, M.	eP013
Stephens, C.	eP552
Stephens, W.Z.	eP057
Steuerwald, N.	eP344
Stevanović, A.	eP537
Stewart, A.	eP512, eP588, eP599, eP625
Stewart, G.	eP313
Stinson, J.	eP015, eP290
Stöger, H.	eP707
Stojanov, O.	eP222
Stojanovska, V.	PS04
Stokke, K.	eP193, eP501
Stone, P.	eP417
Stragliotto, S.	eP293
Straten, A.V.	eP085
Stringer, A.	eP266, PS17
Strollo, S.	eP656
Strüder, H.K.	eP216
Struth, D.	eP010
Stübner, J.	eP264
Stutman, R.E.	eP163
Su, C.C.	eP181, eP182
Su, S.B.	eP117
Subramanian, D.L.	eP187
Sudhakar, R.	eP494
Sugihara, S.	eP565
Suheon, L.	eP111
Sunami, T.	eP403
Sundar, R.	eP713
Suo, J.	eP314
Suppan, C.	eP707
Surbone, A.	eP568
Surmont, V.	eP444
Suryavanshi, M.	eP286
Sussman, J.	eP602
Sutherland, K.	eP112
Sutton, K.A.	eP163
Sutton, K.S.	PS31
Suzuki, E.	eP560
Suzuki, H.	eP560
Swami, N.	PS51
Swanson, E.	eP057
Swift-Scanlan, T.	eP127
Sylvester, C.	eP266
Symons, J.	eP573
Syoji, J.	eP603
Szabo, A.	eP717
Taarnhøj, G.A.	eP690
Tahir, R.	eP349
Taib, N.A.	eP548
Tajiri, H.	eP565
Takabatake, H.	eP091
Takagi, R.	eP276
Takahashi M.	JS12
Takahashi, F.	eP249
Takahashi, T.	eP227
Takamoto, M.	PS23
Takamura, M.	eP330
Takashima, K.	eP565
Takei, D.	eP016
Takeichi, H.	eP316
Takemasa, S.	PS23
Takeuchi, T.	eP333
Takezawa, R.	eP403
Talevi, V.	eP247, eP344
Tam, S.	eP356, eP695
Tamura, A.	eP227
Tamura, K.	eP004
Tan, A.	eP334, eP436
Tan, C.J.	eP168, eP607, eP608
Tan, I.M.J.	eP607, eP608
Tan, K.	eP579
Tan, M.	eP232
Tan, N.C.	eP611, eP613
Tan, W.	eP185
Tanabe, S.	eP330
Tanada, D.	eP394
Tanaka, H.	eP276
Tanaka, K.	eP016, eP500
Tanaka, O.	eP584
Tanaka, T.	eP540
Tanco, K.	eP053, eP141
Taniguchi, T.	eP584
Tanuma, A.	eP606

Tarantino, G.	eP364
Taranto, P.	eP636
Targia, V.	eP228
Tari, S.	eP466
Tartaro, T.	eP262
Tassembedo, S.	eP641
Tayag, M.	eP223
Taylor, J.	eP721
Taylor, K.	eP390
Taylor, M.W.	eP273
Taylor, P.	eP059, eP220
Taylor, R.	eP472
Techane, T.	eP176
Teixeira, M.	eP694
Tejani, M.	eP715
Temkin, S.M.	eP654
Tempe, A.	eP650
Tennison, J.	eP538
Terwee, C.	eP652, eP653
Thakor, N.	eP713
Thakur, N.	eP288
Thawer, A.	eP235
Thiessen, M.	eP436
Thomas, A.G.	eP018
Thomas, D.	PS66
Thomas, T.	eP043, eP631
Thomassen, M.D.	eP198
Thompson, A.	eP535
Thompson, J.	eP451, eP717
Thomsen, C.	eP627
Thong, M.	eP593
Thong, M.S.Y.	eP598
Threatt, S.	eP279
Timmermans, A.	eP659, eP667
Tinelli, G.	eP432
Ting, Y.C.	eP561
Tinianov, S.	eP627
Tiseo, M.	eP366
Tishova, Y.	eP644
Tissing, W.	eP260, PS17
Tissing, W.J.E.	eP258, eP272
Tjulandin, S.	eP013, eP014
Tkachenko, E.	eP724
Todd, C.	eP417, PS59
Tödt, K.	eP215
Tofthagen, C.	eP527
Toh, J.	eP713
Toh, Y.L.	eP168, eP283
Toh, Y.P.	eP463, eP464
Tolby, L.	eP529
Tomaš, I.	eP537, eP542
Tomasello, G.	eP293
Tomasone, J.	eP602
Tomlinson, G.	eP142
Toor, A.	eP127
Topperzer, M.	eP197
Topperzer, M.K.	eP198
Toriola, A.	eP057
Torniai, M.	eP060, eP367
Torres, T.	eP604, eP639
Tostes Faria, E.	eP205
Toyoshima, G.	eP325, eP336
Tozetto-Mendoza, T.R.	eP250
Traill, A.	eP612
Trakarnsanga, B.	eP369
Tralongo, P.	eP568
Trejo, A.	eP348
Tresch, E.	eP363
Trichas, M.	eP259
Trigg, J.	eP160
Trinastic, L.	eP524
Trivedi, R.	eP136
Tropperzer, M.K.	eP488
Truscott, R.	eP375
Tryakin, A.	eP013, eP014
Tsae-Jyy, W.	eP072
Tsai, J.M.	eP490
Tsai, L.Y.	eP490
Tsai, R.Y.	eP047
Tsao, C.J.	eP117
Tsao, M.	eP006, eP007, eP008, eP101, eP401, eP402
Tsapakidis, K.	eP192
Tseng, C.H.	eP689
Tsigaridas, K.	eP192
Tsige, Y.	eP176
Tsimafeyeu, I.	eP644
Tsoukalas, N.	eP192, eP237
Tsubaki, A.	eP210
Tsuboya, A.	eP019
Tsuda, T.	eP019
Tsugawa, K.	eP565
Tsuji, T.	eP210, eP565, eP603, eP606
Tsuji, Y.	eP030
Tsukuda, Y.	PS19
Tsuruta, T.	eP016
Tsutsumi, K.	eP316
Tu, L.	eP024
Tun Min, S.	eP370
Tunali, N.	eP180, eP184
Turba, F.	eP636
Turner, L.	eP601
Turra, A.	eP243
Tuzi, A.	eP262
Tveten, K.	eP193, eP501
Tweardy, D.	eP202
Twisdale, K.	eP150
Tyulyandina, A.	eP013, eP014
Tzeng, C.C.	eP689
Tzovaras, A.	eP192
Uchida, Y.	PS23
Uchitomi, Y.	eP016
Uchiyama, Y.	eP540
Ueda, H.	eP016
Uemura, S.	eP316
Ueno, M.	eP091
Ugalde, A.	eP164, eP390
Ugurlu, Z.	eP510
Ui Dhuibhir, P.	eP313
Ul-Ain, R.	PS35
Ulfig, C.	eP524
Ullgren, H.	eP148
Ulrich, A.	eP057
Ulrich, C.	eP057
Umboh, A.	eP465
Uozumi, R.	eP001
Upadhyay, S.	eP321
Urita, T.	eP276
Urwin, K.	eP408

Ussher, J.	PS03, PS53
Utne, I.	eP081, eP176, eP193, eP217
Utsugi, K.	eP565
Vaca, K.	eP529, eP639
Vadalouca, A.	eP259
Valdagni, R.	eP660
Valério, P.H.M.	eP419
Vallini, I.	eP262
van 't Veer, L.	eP523
Van Batenburg, C.	PS54
Van Belle, S.	eP438, eP444, eP447, PS52
van Belzen, M.A.	PS54
van Bergenhenegouwen, J.	eP272
Van De Poll-Franse, L.	eP094, eP511, PS09
Van den Eertwegh, A.	eP158
van der Aa, S.	eP272
Van Der Hout, A.	eP511, PS09
Van der Meer, L.	eP079
van der Werf, J.	eP094
van Doorne-Nagtegaal, H.	eP094
Van Eeden, R.	eP017, eP124
van Eenbergen, M.	eP094
Van Gestel, D.	eP257
van Hinte, G.	eP595
van Leeuwen, S.	eP246
van Linde, M.	eP424
Van Patten, C.	eP079, eP549
van Straten, A.	eP509
Van Uden-Kraan, C.	eP511, PS09
van Uden-Kraan, C.F.	eP595
Vanasek, J.	eP708
Vanbutsele, G.	eP444, PS52
Vandale, J.	eP436
Vanseymortier, M.	eP363
Vardas, E.	eP259
Varthalitis, I.	eP192, eP237
Vasanwala, F.F.	eP611, eP613
Vashistha, V.	eP495
Vasta, F.	eP636
Vats, S.	eP688
Vechiato Filho, A.J.	eP725
Veeraiah, S.	eP494
Veerle, S.	PS52
Velasco Fargas, R.	eP278
Velli, R.	eP636
Veluswamy, S.K.	eP620
Velutti, L.	eP397
Verástegui Avilés, E.	eP422
Verástegui, E.	eP580
Verdonck-De Leeuw, I.	eP158, eP424, eP652, eP653, eP511, PS09
Verdonck-de Leeuw, I.M.	eP085, eP509, eP595
Verduzco-Aguirre, H.C.	eP545
Verma, A.	eP321
Verma, M.	eP566
Verma, R.	eP126
Vertosick, E.	eP516
Vesprini, D.	eP088, eP356
Vesty, A.	eP273
Vias, P.	eP688
Viboonchaicheep, P.	eP027
Vickerstaff, V.	eP417
Vidal, M.	eP431, eP633
Vieira, N.N.P.	eP374
Vigano, A.	eP061, eP128, eP130, eP311, eP624
Vigano, M.	eP130, eP310
Vigarios, E.	eP317
Vigen, C.	eP600
Vijayan, J.	eP713
Vilela, E.	eP694
Villa, E.	eP397
Villegas, F.	eP045
Viñal, D.	eP236
Vincent, E.	eP298
Vinciguerra, V.	eP228
Vinther, A.	eP226
Virgen, C.A.	eP664, eP670
Vizeacoumar, F.	eP536
Vogel, C.	eP269
Vogel, V.	eP443
Vogelzang, N.	eP225
Voisin, D.	eP023
Von Ah, D.	eP115, eP282
von Bültzingslöwen, I.	eP247
Voulgaris, E.	eP192
Vrabel, M.	eP010
Vries, R.D.	eP085
Wagner Mackenzie, B.	eP273
Wahner Hendrickson, A.	eP699
Waisbeck, T.M.	eP269
Wakeda, T.	eP617
Wakuda, K.	eP227
Waldeyer-Sauerland, M.	eP593, eP598
Waldmann, A.	eP593, eP598
Waldrop-Valverde, D.	eP140
Walker, D.K.	eP605
Walker, R.	eP467
Walladbegi, J.	eP264
Walsh, D.	eP313, PS41
Wan Angela, B.	eP695
Wan Ishak, W.Z.	eP548
Wan, A.	eP669
Wan, B.	eP663
Wan, B.A.	eP008, eP059, eP099, eP100, eP118, eP220, PS34
Wang, G.K.	eP163
Wang, J.	eP301, eP590
Wang, K.	eP059, eP110, eP122, eP220, eP290, eP669, eP695
Wang, L.	eP287
Wang, T.M.	eP675
Wang, X.	eP301
Wang, Y.C.	eP341
Warby, C.	eP057
Ward, E.	eP112, eP522
Wardill, H.	eP260, PS17
Wardill, H.R.	eP258
Warner M., B.	eP107
Warr, D.	PS51, PS61
Warr, D.G.	eP006, eP007
Waszczuk-Gajda, A.	eP297
Watanabe, A.	eP249
Watanabe, S.	eP500
Watari, H.	eP565
Watson, E.	eP139, eP319
Watts, N.	PS67
Weaver, R.	eP557
Wechsler, A.	eP284

Wehkamp, T.	eP272
Wei-Wei, C.	eP072
Wei, J.	eP710
Wei, S.	eP425
Wei, Y.S.	PS16
Weibel, M.	eP198, eP488
Weiss, J.	eP723
Wells, M.	eP225
Wen, J.	eP344
Wenwu, C.	eP409
Were, P.	eP161
Weru, K.	eP596
Whelan, J.	eP472
Whisenant, M.	eP077
Whitburn, T.	eP408
White, I.D.	eP651
Whitehead, L.	eP605
Wickersham, K.	eP383
Wickham J., R.	PS63
Wickham, R.	eP026
Widgren, Y.	eP556
Wieser, V.	eP707
Wignall, A.	eP692, eP701
Wilcock, J.	eP448
Wilcox, M.	eP139
Wilder-Smith, E.	eP713
Wilke, C.	eP630
Williams MD, G.	eP138
Williams- MBA- MPH, J.L.	eP069
Williams, A.C.	eP398
Williams, J.	eP053, eP062, eP230, eP431, eP450
Williams, K.P.	eP577
Williams, L.A.	eP077
Williams, P.A.H.	eP160
Williams, S.	eP521
Williamson, E.	eP535
Wills, C.E.	PS55
Wilson, C.	eP201, eP515, eP616, eP634, eP654, PS14
Wilson, R.H.	eP294, eP295
Winter, C.H.	eP641
Winters-Stone M, K.	eP597
Wise, R.	PS06
Wishart, L.	eP112, eP522
Wolf, S.	eP152
Wolfe, S.	eP723
Wonders, K.	PS06
Wong, A.	eP713
Wong, E.	eP415
Wong, G.Y.L.	eP611, eP613
Wong, H.N.	eP691
Wong, J.	eP350
Wong, L.P.	eP548
Wong, M.	eP434
Wong, S.F.	eP672
Wong, Y.Y.	eP503
Wongvichitsilp, N.	eP027
Wood, R.	eP319
Woodring, S.	eP279
Woon, A.	eP502
Wowor, E.C.	eP465
Woytkiw, T.	eP436
Woźniak, K.	eP297
Wozniczka, I.	eP571
Wright, F.	PS05
Wright, S.	eP626
Wu, E.	eP079
Wu, H.	eP421
Wu, J.	eP053, eP710
Wu, P.H.	eP200
Wu, R.	eP717
Wu, W.W.	eP357
Wu, Y.	eP361, eP569
Wu, Z.Y.	eP675
Wujcik, D.	eP054, eP129
Xiangfei, P.	eP393
Xianyong, L.	eP407
xiao, H.	eP508
Xiao, J.	eP481
Xu, H.	eP225, eP443, JS15
Xu, P.	eP287
Xufeng, Z.	eP407
Ya Lan, H.	eP645
Yadav, N.	eP163
Yadav, S.	eP536
Yagata, H.	eP565
Yagisawa, M.	eP030
Yaguang, L.	eP393
Yaguda, S.	eP056
Yakoot, M.	eP457
Yakushijin, Y.	eP001
Yamada, Y.	eP333
Yamaguchi, T.	eP016, eP019
Yamahana, R.	eP214
Yamamoto-Mitani, N.	eP214
Yamamoto, K.	eP697
yamamoto, Y.	eP565
Yamasawa, H.	eP001
Yamashita, M.	eP001
Yamatodani, A.	eP697
Yan, Z.	eP287
Yanagita, Y.	eP080
Yanai, T.	eP016
Yanchu, L.	eP407
Yang, D.S.	eP546
Yang, E.J.	eP614
Yang, G.	eP503
Yang, L.	eP425
Yap, K.Y.L.	eP149
Yasmeen, R.	eP101
Yassin, M.	eP340
Yasuda, N.	eP500
Yavan, T.	eP146
Yeager, K.	eP140
Yee, C.	eP008, eP059, eP088, eP099, eP100, eP101, eP118, eP220, eP669, eP695, PS34
Yeh, C.	eP067
Yehgambaram, P.	eP548
Yennu, S.	eP062
Yennurajalingam, S.	eP425
Yeo, A.H.L.	eP168, eP283
Yeom, C.H.	eP303
Yeom, C.W.	eP358, eP440, eP504, eP506, eP706
Yeung, S.C.	eP284
Yi, D.	PS59
Yi, J.H.	eP245
Yi, P.	eP407
Yi, X.	eP361

Yi, Z.	eP392
Yigit, B.	eP180, eP184
Yildirim, D.	PS43
Yim, G.W.	eP449, eP453
Yip, C.H.	eP548
Yobas, P.	eP334
Yokomizo, A.	eP019
Yokoyama, T.	eP249
Yom, S.	PL01
Yonenaga, Y.	eP227
Yoo, S.H.	eP687
Yoon, W.S.	eP546
Yorke, J.	eP570
Yoshida, Y.	eP276
Yoshitomi, A.	eP332
Yoshizawa, I.	eP565
Young-Smith RN, C.	eP138
Young, A.	eP139, eP239, eP294, eP295
Yu Jung, K.	eP435
Yu-Sin, S.	eP550
Yu, C.	eP346
Yu, C.C.	eP668
Yu, Q.	eP121
Yu, T.H.	eP357
Yu, W.H.	eP322
Yu, W.Y.	eP415
Yuen, K.K.	eP415
Yuki, S.	eP030
Yun, S.Y.	eP064
Yurika, M.	eP254
Yusof, M.M.	eP548
Yusuke, Y.	eP606
Yvette, C.	eP090
Zacchigna, S.	eP252
Zachariah, F.	eP521
Zahrieh, D.	eP720
Zaki, P.	eP012, eP101, eP401, eP402
Zakurdaeva, K.	eP644
Zambrano, S.	eP445
Zaric, B.	eP222
Zaydiner, B.	eP281
Zeissig, S.R.	eP593, eP598
Zelek, L.	eP218
Zenda, S.	eP016
Zhang, H.	eP590
Zhang, J.B.	eP675
Zhang, L.	eP008, eP059, eP088, eP099, eP100, eP101, eP118, eP401, eP402, PS34
Zhang, M.	eP287
Zhang, P.F.	eP675
Zhang, T.	eP590
Zhang, X.	eP590, PS68
Zhang, Y.	eP301
Zhang, Z.	eP392, eP393
Zhao, K.	eP521
Zhao, W.	eP287
Zhe, Z.	eP409
Zheng, R.	eP346
Zheng, Z.	eP287
Zhong, L.	eP314
Zhong, W.	eP005
Zhou, C.	eP093, eP569
Zhou, Q.	eP581
Zhou, Y.	eP425
Zhu, J.	eP314, eP346
Zhu, X.	eP590
Zhu, Y.	eP066
Zhuang, A.	eP053
Zhukovskaya, E.	eP726
Zibdawi, L.	eP578
Zijlstra-Baalbergen, J.	eP424
Zimmermann, C.	eP442, PS51
Ziras, N.	eP237
Zouzias, C.	eP674
Zukov, R.	eP644
Zuo, Z.	eP471
Zwienenberg, M.	eP528
Zygogianni, A.	eP259