

and researchers. The purpose was to provide patients and family caregivers with information and facilitate the exchange of perspectives and experiences among peers e.g. on daily living and family function. Additionally, to provide participants with strategies to manage this life transition RESULTS: Adult patients with high-grade glioma (n = 17) and their family caregivers (n = 16) completed a 4-day residential programme and a 2-day follow-up programme 3 months later. Qualitative data were collected during focus group interviews (n = 4) with patients and caregivers. Participants responded to self-developed questionnaires after each programme, scoring all sessions for relevance and satisfaction on a 5-point Likert scale (0, not relevant/satisfied; 5, very relevant/highly satisfied). Three themes emerged in the focus group interviews: 1) meeting peers strengthens social well-being, 2) the value of information and focusing on individual needs, and 3) accepting life as an unpredictable passage. The mean overall satisfaction score was 4.80 (standard deviation [SD], 0.55) for the initial 4-day programme and 4.28 (SD, 0.83) for the follow-up programme. CONCLUSION: The multimodal rehabilitative palliative care programme addressed unmet patient and caregiver needs and may have the potential to enhance family function or coping mastery. The programme was feasible, and all sessions received high scores for satisfaction and relevance, as well as positive evaluations. Qualitative findings confirmed the value of individualized information and peer interactions. In particular, peer-to-peer interventions for family caregivers may address individual support needs, including sharing experiences and strengthening social well-being.

P08.02.B. THE CLINICAL FRAILTY SCALE AS PREDICTOR OF OVERALL SURVIVAL AFTER RESECTION OF HIGH-GRADE GLIOMA

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BACKGROUND: The Clinical Frailty Scale (CFS) describes the general level of fitness or frailty and is widely used in geriatric medicine, intensive care and orthopaedic surgery. This study was conducted to analyze, whether CFS could be used for patients with high-grade glioma. MATERIAL AND METHODS: Patients harboring high-grade gliomas, undergoing first resection at our center between 2015 and 2020 were retrospectively evaluated. Patients' performance was assessed using the Rockwood Clinical Frailty Scale and the Karnofsky Performance Scale (KPS) preoperatively and 3-6 months postoperatively. RESULTS: 289 patients were included. Pre- as well as postoperative median frailty was 3 CFS points (IqR 2-4) corresponding to "managing well". CFS strongly correlated with KPS preoperatively ($r = -0.85$; $p < 0.001$) and at the 3-6 months follow-up ($r = -0.90$; $p < 0.001$). The reduction of overall survival (OS) was 54% per point of CFS preoperatively (HR 1.54, CI95% 1.38-1.70; $p < 0.001$) and 58% at the follow-up (HR 1.58, CI95% 1.41-1.78; $p < 0.001$), comparable to KPS. Patients with IDH mutation showed significantly better preoperative and follow-up CFS and KPS ($p < 0.05$). Age and performance scores correlated only mildly with each other ($r = 0.21$; $p < 0.01$), but independently predicted OS ($p < 0.001$ each). CONCLUSION: CFS seems to be a reliable tool for functional assessment of patients suffering from high-grade glioma. CFS includes non-cancer related aspects and therefore is a contemporary approach for patient evaluation. Its projection of survival can be equally estimated before and after surgery. IDH-mutation caused longer survival and higher functionality.

P08.03.A. CONVERSATION TOOL FOR BRAIN TUMOR PATIENTS - TAILOR-MADE SUPPORT AND GUIDANCE FOR THE PATIENT AND THEIR PROXIES

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BACKGROUND: An evaluation by the Dutch Neuro-Oncology Society (LWNO) showed that screening for psychosocial problems and the need for psychosocial care in glioma patients and their proxies is currently not optimal. Although tools to screen for psychosocial issues such as the Distress Thermometer exist, in daily practice they appear to be insufficient to discuss all disease-specific problems patients with brain tumors may encounter. We describe the development of a conversation tool to support the consultation between the patient with a brain tumor, their proxies and the health care professionals (HCPs). MATERIAL AND METHODS: The development of the conversation tool for brain tumors was based on the tool used by the AYA Care Network in the Netherlands. Topics of importance for the entire care process were identified in a brainstorming session with 15 people (comprising HCPs, patients and proxies). Subsequently, the content of the conversation tool was determined by members of the LWNO and members of the LWNO-working group of nurses specialized in neuro-oncology (LWNO-v). Each topic in the conversation tool is supported by a visual,

which was developed by a graphic design company in close collaboration with patients, proxies and HCPs. RESULTS: The conversation tool contains a total of 35 different topics covering six domains: physical health, daily life activities, psychological health, social relationships, loss of health and life, practical issues, all illustrated by a visual. The conversation tool can be given to the patient in booklet form before an appointment with the HCP, so they can prepare the conversation upfront. In addition, cards per domain will be available in the consultation room to be used during the appointment.

Conclusion:

By using the conversation tool, optimal individual guidance and support of patients with brain tumors is facilitated, as this patient population has unique issues that are often not covered by existing tools. Using the conversation tool also promotes a nationally uniform way of working. Currently, an interactive tool for HCPs is being developed in which an overview of available interventions and best practices for the topics in the conversation tool are described, to ensure the needs of patients can be adequately addressed. The process of development of this tool can serve as an example for other cancer types.

P08.04.B. THE CLINICAL FRAILTY SCALE IS SUPERIOR TO THE KARNOFSKY PERFORMANCE STATUS AS PREDICTOR OF OVERALL SURVIVAL IN PATIENTS WITH SURGICAL TREATMENT OF BRAIN METASTASES

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BACKGROUND: The Clinical Frailty Scale (CFS) evaluates patients' level of frailty on a scale from 1 (very fit) to 9 (terminally ill) and is commonly used in geriatric medicine, intensive care and orthopaedics but not in patients harboring neuro-oncological diseases. Our study was conducted to reveal if the usage of CFS generates more reliable prediction of overall survival in patients after brain metastases resection rather than Karnofsky Performance Status (KPS). MATERIAL AND METHODS: All patients which were operated for brain metastatic disease at our department from 2005-2019 were included. CFS and KPS were retrospectively assessed for the timepoints pre- and postoperatively as well during follow-up 3-6 months after resection. RESULTS: 205 patients with mean follow-up of 22.8 months (CI95% 18.4-27.1) were evaluated. Mean estimated OS was 32.1 months (CI95% 25.0-39.1). CFS showed a median of 3 points (IqR 2-4) at all 3 assessment-points which means patients were "managing well". Median KPS was 80 preoperative (IqR 80-90) and 90 (IqR 80-100) postoperative as well as on follow-up after 3-6 months. CFS strongly correlated with KPS: preoperatively ($r = -0.92$; $p < 0.001$), postoperatively ($r = -0.85$; $p < 0.001$) and at follow-up ($r = -0.93$; $p < 0.001$). In the same time, CFS pre- and postoperatively showed only weak correlation with CFS at follow-up after 3-6 months ($r = 0.30$, $p < 0.001$; and $r = 0.37$, $p < 0.001$, correspondingly). In multivariate integrated Cox regression model, the CFS predicted the expected reduction of OS superior to KPS at all 3 assessment-points. One point increase of preoperative CFS represented 30% additional hazard to decrease (HR=1.30, CI95% 1.15-1.46; $p < 0.001$), correspondingly postoperative CFS provides 39% (HR=1.39, CI95% 1.25-1.54; $p < 0.001$) and at follow-up 42% of hazard (HR= 1.42, CI95% 1.27-1.59; $p < 0.001$). In case of KPS, decrease of 10 points resulted in additional hazards to decrease of 26% (HR=0.974/point, CI95% 0.962-0.987; $p < 0.001$) postoperatively 14% (HR=0.986/point, CI95% 0.978-0.993; $p < 0.001$) and 31% (HR=0.969/point, CI95% 0.959-0.978; $p < 0.001$) at follow-up. CONCLUSION: CFS is a feasible and reliable performance scoring in patients undergoing brain metastasis resection, that provides better OS prediction as compared to KPS. Whereas, CFS at follow-up after 3-6 months specifies the expected OS most accurately. Due to weak correlation between CFS preoperatively vs. postoperatively and in 3-6 months, initial frailty does not predict the patients' postoperative frailty score.

P08.05.B. COMMUNICATION IN THE CONTEXT OF GLIOBLASTOMA TREATMENT: WHAT MATTERS MOST TO PATIENTS AND CAREGIVERS

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BACKGROUND: Given the poor prognosis of glioblastoma, with short survival times regardless of treatment, it is critical that the benefits and risks of treatments are clearly discussed with patients and family caregivers. The respective value of quantity versus quality of life varies for each individual. Yet, effective communication can be complicated by emotional responses following diagnosis, patients' neurocognitive deficits, and sometimes, lower health literacy. We aimed to investigate patient and caregiver experiences and preferences around glioblastoma treatment communication. MATERIAL AND METHODS: Semi-structured qualitative interviews were conducted with adult glioblastoma patients and their caregivers, interviewed as dyads or individuals. Purposive sampling was used to capture views across the entire disease trajectory. Interviews were recorded, transcribed verbatim, and

analysed for common themes. Analysis is ongoing and will be completed by June 2022, with preliminary findings described below. RESULTS: In total, 15 glioblastoma patients and 13 caregivers took part, 8 as dyads. Five main themes were found. 1) *Communication experiences*. A rush to get treatment underway can limit adequate communication. Patients and caregivers described that risks of treatment were clearly explained, but perceived it as 'the only option'. 2) *Communication preferences*. Balanced and sensitive communication of prognostic information was desired, with uncertainty providing hope as well as being a burden. Patients and caregivers can have different information and support needs, requiring separate and proactive communication. 3) *What matters most*. Participants valued feeling involved, having clear and reliable information and support from the treatment team, and developing a personable relationship. In terms of treatment goals, they valued extending life with good quality of life. 4) *Decision-making*. Participants emphasised the importance of being involved in decisions, involving caregivers, and following treatment team advice. While faced with extremely limited treatment options, they valued having a sense of control over declining, pausing or stopping treatment. 5) *Impact of Covid-19*. In general, patients described limited impact of the measures taken during the pandemic (e.g., masks, telephone consultations), whilst caregivers highlighted specific issues around not being able to support patients in emergencies, expressing/reading nonverbal cues, or fully participating in telephone consultations. CONCLUSION: Glioblastoma patients and caregivers value sensitive, comprehensive and comprehensible communication around treatment risks and benefits, and supportive care. Involving and supporting caregivers is critical.

P08.06.A. WORK RESUMPTION FOLLOWING LOWER-GRADE GLIOMA SURGERY: A MULTICENTER COHORT STUDY

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BACKGROUND: Patients with lower-grade glioma (LGG) are often of working age. For LGG patients post-surgical work resumption is at risk from treatment including resective surgery. However, little is known on determinants of returning to work. In this study we examined determinants of post-surgical work resumption after nine months using patient- and tumor-related characteristics, such as tumor and resection cavity locations. MATERIAL AND METHODS: This retrospective multicenter cohort study included adults with supratentorial WHO grade II and III gliomas who underwent a first-time surgery in Paris, Munich or Amsterdam between 2011 and 2016. Patient-related characteristics included age, sex, patient condition, received treatments, classification of work type and skill level. Presurgical tumors and postsurgical resection cavities were manually segmented on MRI and registered to standard brain space. These segmentations were mapped to Schaefer, XTRACT and Harvard-Oxford atlas parcellations of cortical, white matter and grey nuclei structures. Predictors of postsurgical return to work were examined in multivariable logistic regression and Bayesian hurdle regression models. RESULTS: The cohort consisted of 219 patients. Before surgery 192 (88%) patients were able to work, and after surgery 119 (62%) resumed work. Independent predictors of returning to work were male sex (OR = 3.21, CI = 1.44 - 7.46, $p = 0.005$) and lower age (per 1 year older, OR = 0.96, CI = 0.92 - 0.99, $p = 0.029$). No associations were found between work resumption and locations of the tumor or resection cavity. CONCLUSION: Many patients are able to work before and many return to work after first-time LGG surgery. Inability to resume work is exclusively associated with patient-related characteristics and not with tumor or resection locations. This novel information may inform patient counseling.

P08.07.A. LONG-TERM MULTIDIMENSIONAL ASSESSMENT OF FATIGUE AND FATIGUE AS PREDICTOR OF SURVIVAL IN PATIENTS WITH BRAIN METASTASES AFTER GAMMA KNIFE RADIOSURGERY

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BACKGROUND: The aim of this study was to assess long-term multidimensional fatigue and (change in) fatigue as predictor for survival in

patients with brain metastases (BM) up to 21 months after Gamma Knife radiosurgery (GKRS). MATERIAL AND METHODS: Patients with 1 to 10 BM, expected survival >3 months, and Karnofsky Performance Status ≥ 70 were included. Fatigue was measured with the Multidimensional Fatigue Inventory (MFI). Linear mixed models were used to evaluate fatigue up to 21 months after GKRS. Fatigue before GKRS and changes in fatigue in the first three months after GKRS were evaluated as predictors for survival duration. RESULTS: Patients with BM experienced significantly higher levels of fatigue on all subscales prior to GKRS ($n=92$) compared to Dutch controls ($n=104$), all p 's $\leq .001$. Over 21 months, levels of physical fatigue increased significantly ($p=.001$), and levels of mental fatigue decreased significantly ($p=.004$). Between pre-GKRS and 3 months, there was a significant increase in levels of general ($p<.001$) and physical fatigue ($p<.001$), followed by stable fatigue scores between 3 ($n=67$) and 6 ($n=53$) months, 6 and 12 ($n=34$) months and 12 and 21 ($n=21$) months. Minimal clinically important (MCI) increases in general ($p=.023$, time ratio=0.61) and in physical fatigue ($p=.008$, time ratio=0.56) from pre-GKRS to 3 months thereafter were independent negative predictors of survival time (i.e., an MCI increase in these domains predicted a reduction of 39% and 44% respectively in survival time compared to stable or decreased fatigue). CONCLUSION: Results indicate that up to 21 months after GKRS fatigue is a persistent problem in patients with BM. Except for an increase in general and physical fatigue up to 3 months after treatment, fatigue remained stable up to 21 months after GKRS. In addition, an MCI increase in general or physical fatigue within three months after GKRS may be related to worse survival outcome.

P08.08.B. LONG-TERM SURVIVAL AND HEALTH-RELATED QUALITY OF LIFE IN MENINGIOMA PATIENTS: A MIXED-METHODS SYSTEMATIC REVIEW

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BACKGROUND: Meningiomas account for approximately 36% of all primary brain tumours. These tumours have a relatively favourable prognosis with approximately 92% of meningioma patients surviving >5 years after diagnosis. Yet, patients report high disease burden and survivorship issues even years after treatment, including cognitive issues and anxiety/depression affecting health-related quality of life (HRQOL). We aimed to systematically review the literature and synthesise evidence on HRQOL in meningioma patients across long-term survival, defined as ≥ 2 years post diagnosis. MATERIAL AND METHODS: Systematic literature searches were carried out using Medline, EMBASE, CINAHL, PsycINFO, and Web of Science Core Collection up to November 2021. Two independent assessors carried out screening. Any published, peer reviewed article with primary quantitative or qualitative data covering the physical, mental, and/or social aspects of HRQOL were included. Quality was assessed using the Mixed Methods Appraisal Tool, before a data-based convergent synthesis design was used to interpret findings. RESULTS: The search returned 2252 articles. Following screening 12 papers were included in the review. The majority of studies used quantitative methods, with only one study reporting mixed-methodology. Two of these were articles from the same study. Most used cross-sectional assessments ($n = 10$) with two reporting longitudinal assessments ($n = 2$). Included meningioma patient samples ($n=2990$ in total) represented a wide range of survival lengths (range: 24 months - 10 years). HRQOL was impacted predominantly through physical and mental issues, including persevering symptoms (e.g. headaches, fatigue, vision problems) and emotional difficulties (e.g. poorer mental and general health perceptions). Returning to work proved difficult for patients due to cognitive and social deficits (e.g. issues with concentration, procrastination and isolation). Factors including age and comorbidities, but also treatment type appears to affect patients' satisfaction with their HRQOL. CONCLUSION: While overall prognosis following a meningioma diagnosis is good, meningioma patients' HRQOL appears affected throughout long-term survivorship. Findings from this review could be beneficial in addressing the HRQOL and supportive-care needs of patients across long-term survivorship.

P08.09.A. IMPROVING SUPPORT FOR FAMILY CARERS: CREATING A CROSS-SECTOR COLLABORATIVE WORKING GROUP

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BACKGROUND: Family carers of people with brain tumours and other progressive neurological conditions have unique but overlapping support needs. This is because caring can be particularly challenging due to patients' cognitive issues, behavioural changes, and neuropsychiatric symptoms. We undertook stakeholder engagement work to bring together family carers, academics, service providers and policy makers to form a working group and highlight opportunities for improvement of family carer (FC) support. MATERIAL AND METHODS: Sixteen stakeholders (academics, carers, charity representatives, clinicians and policy makers) participated in two one-hour online workshops ($N=8$ in each). Workshops started with introductions, an outline