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Introduction

The Gulf Cooperation Council (GCC) Association of Immunology and Rheumatology (GCC AIR) is a medical association aiming to advance research and training to improve the health of people with rheumatic and related diseases and enhance research environment. The GCCAIR aims to educate members and other practitioners in the musculoskeletal field to enable provision of best possible management for patients. We aim to also fosters excellence in the diagnosis and management of musculoskeletal and inflammatory conditions through training, professional development, research and advocacy.

These are the advance abstracts of the Middle East Rheumatology Conference of the GCC Association of Immunology and Rheumatology to held on 25-27th of November 2021. The abstracts are presented under their relevant groups; Basic and Translational Research, Clinical Research, Health Professionals in Rheumatology Practice and Clinical Care, Rheumatology Images and Clinical Cases were submitted. These peer reviewed abstracts from the region has the potential of improving our understanding of local data and could add to our understanding of rheumatic disease, standards of care and provide prospective for further research.

Meeting Highlights

Category: Health professionals in rheumatology practice and clinical care

Challenges of referral, diagnosis and management of axial spondyloarthritis

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HIGHLIGHTS FROM MIDDLE EAST RHEUMATOLOGY CONFERENCE

Background: There are many challenges in the referral, diagnosis, and management of patients with suspected axial spondyloarthritis (AxSpA) worldwide. Gulf-REDMAS comprises a group of expert rheumatologists from the Gulf countries who convened to create and disseminate a survey to understand the aforementioned challenges with the main aim to fill the evidence gap.

Materials and methods: An anonymous online survey consisting of 35 multiple choice closed questions that lasted for 1 month was circulated among practicing rheumatologists in the Gulf countries (calculated sample size was 101).

Results: One hundred thirty-two rheumatologists completed the survey from 371 rheumatologists in the region. The majority of responders (88%) noted that they faced delays in the referral of AxSpA patients to their clinic, with the main reason being a 'lack of disease awareness by primary care physicians' (56%). The survey respondents surmised that the leading reasons for non-rheumatology specialists' reluctance to refer patients with suspected AxSpA included 'lack of awareness of long-term complications of spondyloarthritis' (34%), and 'some non-rheumatology specialists think they can treat and diagnose AxSpA without the need to refer to a rheumatologist' (28%). Two-thirds of survey respondents (66%) highlighted that the greatest challenge being 'patients who present with atypical symptoms such as: <3 months back pain, chronic back pain occurring >45 years of age, or chronic back pain with ≥1 spondyloarthritis features but without sacroiliitis on imaging' (51% of responders who highlighted they faced a challenge). The main patient-related challenges to management of AxSpA were: 'patients cannot access the medication as it is unavailable in my hospital/clinic pharmacy' (31%, first reason) and 'patients may have fears of drug side effects (39.6%, second reason).

Conclusion: Responses to this survey highlighted several challenges in the referral, diagnosis, and management of AxSpA patients. Future recommendations that should be implemented to address these challenges

Category: Clinical Research

MRC2021-A-1027

Hospitalizations outcomes in patients with systemic lupus erythematosus in a large tertiary center with multinational population

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Background: Systemic Lupus Erythematosus (SLE) is characterized by diverse clinical presentations and a remarkably unpredictable course. Although survival rate has increased in recent decades, morbidity and mortality are still substantially high, resulting in multiple hospital admissions. Winning the battle against lupus requires a good understanding of the causes of SLE-related hospital admissions and the predictors of morbidity and mortality, in order to implement the early necessary interventions to reduce poor outcomes in hospitalized patients. Because SLE disease course, prognosis, and management vary across races and countries, understanding these factors in different populations is highly important.

Material and method: Electronic records of SLE patients admitted to Hamad General Hospital over a period of 3 years were reviewed to obtain patients' demographics, clinical characteristics, and hospitalization outcomes, and

identify predictors of intensive care unit (ICU) admission and poor outcomes. Descriptive statistics were used to summarize data and presented as percentages and mean±SD. Multiple logistic regression analysis to identify predictors of disease outcomes in relation to various features was conducted. Non-parametric correlation was expressed as correlation coefficient (r) and *p*-value <0.05 was considered to be significant.

Results: A total of 110 patients were analyzed with mean age 34.6±10.9 years, 84% were females and 56% Arabs. Disease duration was 5.5±7.3 years, 43% had renal involvement and 40% were on steroids (mean dose 7.5±12.9 mg/day). The main reason for hospitalization was hematological flares in 27%, articular in 20%, and infections in 28%. Sepsis occurred in 22% of patients and renal impairment in 41% with 14% needing renal replacement therapy. Mean hospitalization length was 10.3±10.7 days, 47% had ≥2 admissions, 17% required ICU admissions and one death occurred due to sepsis. The ICU admissions were associated with neuropsychiatric flares (odds ratio [OR] 12.7, 95% confidence interval [CI] 1.7–94.7), higher disease activity (SELENA-SLEDAI-2k, OR 1.1, 95% CI 1.0-1.2), cardiovascular causes (OR 11.9, 95% CI 1.4–98.0), complications including renal impairment (OR 4.2, 95% CI 1.1–15.8) and heart failure (OR 14.6, 95% CI 1.4–149.9), higher number of admissions (OR 2.2, 95% CI 1.3–3.9), and longer hospital stay (OR 1.3, 95% CI 1.1–1.4).

Conclusion: In this multinational cohort, sepsis, renal, neuropsychiatric, cardiovascular complications, high disease activity and recurrent hospital admissions were associated with poor outcomes which were consistent with previous studies. Although the proportion of ICU admissions was substantially high in this population, the mortality was relatively low. The findings of this study could potentially help us better predict poor outcomes in order to implement early interventions to reduce morbidity and mortality.

Category: Clinical cases

MRC2021-A-1026

Antiphospholipid syndrome with diffuse alveolar hemorrhage: case report

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Introduction: Diffuse alveolar hemorrhage (DAH) is a rare, potentially fatal presentation of antiphospholipid syndrome (APS) that can be triggered by infections, toxins or other factors. Due to rarity of DAH in APS, no randomized trials exist and treatment is guided by case reports, case series, and inter-disciplinary experience. This abstract will describe a case of DAH in a patient with primary APS.

Materials and methods: Case report

Result: Mr. X; A 40-year-old male, with known primary APS. His APS presented with 2 years history of chronic mild hemoptysis, episodes of amaurosis fugax twice, and triple positive anti-phospholipid antibodies (APLa). A bronchoalveolar lavage had been carried out one year prior to the presentation of Mr. X with the DAH, and it was inconclusive. He was on treatment with Mycophenolate mofetil (MMF), Methotrexate (MTX) plus folic acid, high dose Prednisolone, without anticoagulation. Mr. X ran out of MMF tablets 2 weeks prior to the DAH attack. The DAH episode started with acute hemoptysis and dyspnea which started 10 days after his recovery from asymptomatic COVID-19 infection. On physical examination, Mr. X was alert and afebrile, desaturating down to 85% on room air. There were no positive musculoskeletal findings. Investigations revealed leukocytosis, anemia, thrombocytopenia, and mildly elevated inflammatory markers. Chest radiography showed a new extensive bilateral

patchy consolidation and ground-glass changes. There were no large pulmonary embolism or smaller embolism. Therefore, DAH could not exclude. Mr. X was put on supportive care, Oxygen supplement, empirical antimicrobial therapy, pulse corticosteroid, and plasma exchange. After confirming negative septic workup, cyclophosphamide and IVIG had been added. Mr. X condition improved with the given treatment.

Conclusion: The DAH is a rare microvascular manifestation of APS in which blood oozes from the alveolar capillaries into the intra-alveolar space. The frequency of APS-associated DAH was 2%, and the mortality rate among primary APS ranged between 23 to 33%. Viral URTI was reported as a trigger inciting episodes of alveolar hemorrhage. In literature, in addition to supportive care, high-dose corticosteroids are the initial treatment for DAH in APS. The majority of patients need an immunosuppressive steroid-sparing agent

Category: Clinical research

MRC2021-A-1025

Behavioral assessment of Algerian patients with a chronic rheumatism disease during COVID19 pandemic

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Background: The COVID19 pandemic has completely changed patient care with chronic pathologies following the incessant reorganization of care which each time adapted to the epidemic context. This prompted patients with chronic inflammatory rheumatism (CIR) to self-manage and take sometimes inappropriate attitudes regarding their treatment. We have wanted through this work, to know the impact of this pandemic on the behavior of subjects suffering from CIR with regard to their treatments, but also appreciate their position regarding COVID19 vaccination.

Materials and methods: This is a cross-sectional observational study carried out on patients with CIR followed in an Algerian rheumatology department or registered on a secure online platform all over the national territory. We collected socio-demographic data from patients and their attitudes towards the management of their treatment during COVID19 pandemic particularly once contaminated and their position front of COVID19 vaccination.

Results: We collected data from 102 patients, the average age is 37±3.2 years with a predominance of women at 57%, 43/102 suffered from spondyloarthritis ankylosing (SPA), 37/102 had rheumatoid arthritis (RA) and 12/102 had psoriatic arthritis (PA). Regarding symptomatic treatment taken by patients, 54/102 were taking regularly nonsteroidal anti-inflammatory drugs (NSAIDs) and 51/102 were on corticosteroids. On the other hand for the basic treatments, 48/102 were under methotrexate and 40/102 were on biological. Among the 102 patients, one third of them has already been contaminated with SARS-CoV-2 with 10% severe forms requiring hospitalization; the one quarter of subjects had stopped their therapies during this pandemic. One third of drug stops concerned NSAIDs and one fifth of drugs corticosteroids, three quarter of patients justified this stopping by fear to be contaminated under these treatments. Concerning the COVID19 vaccination, only 20% of patients were vaccinated, where the majority was apprehensive about the safety and the effectiveness of the vaccine. More than half of those surveyed claimed that their rheumatologist did not educate them about the COVID19 vaccination.

Conclusion: It is quite clear that the COVID19 pandemic has had a bad impact on the management of rheumatic disease patients and their treatments, which thus exposes them to harmful complications, hence the importance of establishing therapeutic education programs in the sense of teaching patients how to self-adapt in this context of a global epidemic but also to raise awareness of COVID19 vaccination.

Category: Basic and translational research

MRC2021-A-1024

Evaluation of rheumatology practice in Algeria during the different waves of the COVID19 pandemic

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Background: The occurrence of the COVID19 pandemic has disrupted the daily activity of rheumatologists especially during epidemic peaks, resulting in an upheaval in the management of chronic pathologies such as chronic inflammatory rheumatism (CIR). This has led to a discontinuity of care and sometimes harmful complications for patients, which has prompted some health organizations and some rheumatologists to adapt their daily practice according to the epidemic context. Through this study, we wanted to assess the impact of the different waves of the COVID19 pandemic on the organization of care in private and public rheumatology practice, but also health stuff position on vaccination against COVID19.

Materials and methods: This is an online descriptive study with an anonymous questionnaire spread through a national network bringing together the most Algerians rheumatologists from both the private and public sectors. We thus collected the data of practitioners interviewed by estimating their attitude during their daily medical practice during the COVID19 pandemic and in the various epidemic peaks.

Result: We collected the response of 98 rheumatologists from different regions of the country, half of which is in the public sector, 58% have adapted their activity during epidemic peaks (46% decreased this activity and 12% had it interrupted during the different waves) against 39% who did not adapt at the various peaks (23% maintained the activity without adjustment from the beginning of the pandemic while 16% limited the activity to certain tasks). We noted that 11% of those questioned did not carry out any infiltration or osteoarticular ultrasound during this pandemic for fear of contamination. Regarding therapeutic management, 22% stopped prescribing NSAIDs to their patients while 58% did not stop any treatment; 70% of rheumatologist maintained corticosteroids in their patients and 54% kept the hydroxychloroquine. To start treatment with rituximab, 44% of doctors felt it necessary to delay its prescription during peaks epidemics. About the COVID19 vaccination, 67% were in favor of the vaccination of all their patients against 33% who were against. Half of the practitioners have recommended the suspension of the intake of methotrexate during the administration of different doses of the vaccine, while 33% postponed either the course of rituximab for their patients either postponed the vaccination against COVID19.

Conclusion: The management of rheumatological treatment is severely disrupted by the pandemic COVID-19, thus hampering the effectiveness rheumatic patients' cure. It invites rheumatologists to review the various recommendations of the companies in order to better manage patients suffering from CIR, but also better handle the different antirheumatic therapies during the various epidemic peaks and during COVID 19 vaccination.

HIGHLIGHTS FROM MIDDLE EAST RHEUMATOLOGY CONFERENCE

Category: Health professionals in rheumatology practice and clinical care

MRC2021-A-1023

Estimation of patient knowledge and medication preference on rheumatic and musculoskeletal diseases in the United Arab Emirates: Single center study at Cleveland Clinic Abu Dhabi

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Background: Knowledge is a vital element in treating patients with rheumatic and musculoskeletal diseases (RMD) which allows the ability to cope with the physical, psychological and social problems associated with the disease burden. In addition, it is essential to the promotion of preference, adherence, compliance, and safety in relation to complex treatment regimes. The aim of the study is to assess the patient awareness on RMD's and estimate the preference in regards to immunosuppressive therapies in the United Arab Emirates (UAE) population who are attending Cleveland Clinic Abu Dhabi.

Materials and methods: The study included 2 arms, patients with an established diagnosis of RMD and the patients who were referred to the rheumatology clinic to be screened for an underlying RMD. A self-made questionnaire in 2 languages (English and Arabic) which comprised of 10 questions divided into 2 sets: i) Knowledge on RMDs (gender, level of education, duration of disease, effect on pregnancy, are autoimmune disease curable, and duration patients with the autoimmune disease receive immunosuppressive therapies); ii) Medication preference (oral versus [vs.]. subcutaneous vs. intravenous, daily vs. weekly vs. monthly). Descriptive statistics were used to calculate all participants' responses. Student t-test for quantitative data and the chi-squared test for qualitative data. $p<0.05$ was considered significant.

Results: A total of 455 patients, of which 303 patients had established diagnosis of a RMD (dRMD) and 152 patients screened for underlying rheumatic disease (sRMD), were studied. About 76.7% were females (dRMD: 80.9%; sRMD: 68.4%; $p=0.003$). Mean age was 43.3±0.7 (dRMD: 41.0±0.8; sRMD: 47.7±1.2; $p=0.004$). Majority of patients had either College/University/Bachelor's degree (dRMD: 47.9%; sRMD:54.6%), secondary school (dRMD:18.8%; sRMD:15.1%), and Illiterate (dRMD:6.3%; sRMD:12.5%). The most common rheumatic disease was rheumatoid arthritis (37.3%) followed by SLE (32.7%). There were 63.3% answered that RMDs is a curable disease (dRMD: 64.7%; sRMD:69.7%; $p=0.28$), 56% answered that RMD affect pregnancy or getting pregnant (dRMD: 53.8%; sRMD:60.5%; $p=0.17$), 7.7% answered the disease is communicable (dRMD: 6.9%; sRMD:9.2%; $p=0.39$). 49.9% answered that the disease is lifelong, 20.4%(less than one year), 14.5 (1-2 years) and 15.2% (3-5 years). Patients preferred oral medication (74.9%) over subcutaneous injection (11.6%) or intravenous (13.4%) with the highest preference for the monthly medication (42.9%) followed by daily (32.5%) and weekly (24.6%). The majority of patients involved in the study were educated however they have full awareness about RMDs. There were no differences in understanding RMDs between patients with established rheumatic diseases or patients who were screened. Different education levels had significant differences in responses about whether rheumatic autoimmune diseases can be cured and the duration of treatment in patients with established rheumatic autoimmune diseases.

Conclusion: These findings highlight the need for raising awareness of rheumatic diseases in our community to promote better understanding and adherence to the treatment regimens in the United Arab Emirates

Category: Basic and translational research

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Various medical comorbidities are common at the initial presentations of systemic lupus erythematosus patients

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Background: Systemic lupus erythematosus (SLE) is a chronic inflammatory disease that has various manifestations among different populations. This study aimed to estimate the various medical comorbidities associated with SLE at the time of presentations among Omanis.

Materials and methods: This is a retrospective analysis using patients' registry medical information system (AlShifa system). All patients diagnosed with SLE were reviewed by accessing their medical records and laboratory results at the Royal Hospital-Muscat, Oman, from 2006 to 2014. The following comorbidities were analyzed: diabetes mellitus (DM), hypertension (HTN) hyperlipidemia, lung disease, cardiovascular disease (CVD), cerebrovascular accident (CVA), chronic kidney disease (CKD), end-stage kidney disease (ESKD), infection, thyroid diseases, osteoporosis, malignancy, and the number of miscarriages.

Results: In Oman, there were 966 patients diagnosed with SLE during the period from 2006 to 2014. The mean (SD) of age at presentation was 35.5 (11.5) years. The majority of patients were female (88.7%) with a mean age of 27.6 (1.4) years. At presentation, 24.5% had HTN, 19.1% hyperlipidemia, 12.2% miscarriages, 12% with thyroid diseases, 10% CVD, 5.81% with DM, 5% CVA, 4.1% CKD, 2.8% with ESKD needing dialysis, 2.5% with osteoporosis, 1.49 with infections and 0.53% with malignancy.

Conclusion: The SLE patients have a greater burden of various medical comorbidities and are more likely to develop CVD, stroke, CKD, ESKD and even needing renal replacement therapy at the time of diagnosis. Strengthen the health system at the primary level and educating of public and health workforce is the main challenge to further reduce these presentations and their consequences.

Category: Clinical research

MRC2021-A-1021

Subclinical thyroid dysfunction is more common in established rheuamtoid arthritis patients than early rheumatoid arthritis patients

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HIGHLIGHTS FROM MIDDLE EAST RHEUMATOLOGY CONFERENCE

Background: Thyroid dysfunction is common in rheumatoid arthritis (RA). Subclinical hypothyroidism is the first most common, followed by clinical hypothyroidism. Thyroid dysfunction in RA had been found to increase the risk of cardiovascular disease. Subclinical hypothyroidism is defined as increased serum thyroid-stimulating hormone (TSH) concentration with normal serum free thyroxine (T4) level. The aim of this study was to compare the thyroid function in early RA patients; early RA (ERA) (of less than the one-year duration of RA symptoms) versus established RA patients (of more than or equal to the one-year duration of RA symptoms)

Materials and methods: We recruited 35 ERA patients and 52 established RA patients attending specialized rheumatology clinic at Al Kuwait-Dubai Hospital, Emirates Health Services (EHS), United Arab Emirates. All the patients had no clinical evidence of thyroid dysfunction. Patients with diabetes, pregnancy, renal, and liver impairment were excluded. Fasting free thyroxine (FT4), free triiodothyronine (FT3), and thyroid-stimulating hormone (TSH) were assessed in all the participants. A t-test was used to compare the RA disease characteristics and the thyroid function between early and established RA. A p-value of <0.05 was considered significant.

Results: The RA patients had been recruited through a specialized rheumatology clinic, 35 were with new-onset RA (ERA; ERA of less than a year of RA symptoms onset) and 52 were with established RA (of more than a year of RA symptoms onset). The mean RA duration was 7.4±2.0 months for the ERA and 96±92 months for the established RA group. There were no significant differences in age (45.76±2.45 years for ERA vs. 46.32±2.30 years for the Established RA respectively, p=0.49), or in gender distribution (31 females and 4 males in ERA vs. 46 females and 6 males in established RA, p=0.9) between the 2 groups. The ERA compared to the established RA group had more active RA as manifested by more swollen 28- joints (5.7 vs 1.7, respectively, p=0.001), more tender 28-joints (17 vs 11, respectively, p=0.01), higher Disease Activity Index-28-Erythrocytes Sedimentation Rate (DAS-28-ESR) score (5.8 vs 4.5, respectively, p<0.0001), higher Disease Activity Index-28-C-Reactive Protein (DAS 28-CRP) score (5.1 vs. 3.9, respectively, p=0.001), and longer morning stiffness duration (in minutes) (p=0.04). As well, ERA had a lower High-Density Lipoprotein (HDL) level (1.4 vs 1.2, respectively, p=0.04). On the other hand, established-RA patients had RA disease onset at an earlier age than the ERA group (36.5 vs 44 years, respectively, p=0.02). While the mean TSH, T3, and T4 were within the normal range in both groups, there were significant differences in the mean values between ERA and established RA. Tthyroid-stimulating hormone was 2.12±1.52 in ERA vs. 5.8±8.3 in established RA (NR:0.27-4.2 mlu/l), p=0.04. Mean FT3 was 4.54±0.53 in ERA vs. 3.61±1.13 in the established RA (NR: 4-6.8 pmol/l), p=0.04. Average FT4 was 17.7±4.77 in ERA vs. 15.3±2.51 in the established RA (NR: 12-22 pmol/l), p=0.01.

Conclusion: The RA patients with more than a year of RA symptoms are at a higher risk of silent autoimmune thyroid disease than their age gender matched RA patients with new-onset RA; of less than a year of RA symptoms onset. Regular assessment of thyroid function might be an important part of the routine biochemical and immunological profile screening of RA.

Category: Health professionals in rheumatology practice and clinical care

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Rheumatology research setting in the United Arab Emirates

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HIGHLIGHTS FROM MIDDLE EAST RHEUMATOLOGY CONFERENCE

Background: Health research is very valuable to societies. It can provide important information about disease trends, prevalence and incidences, risk factors, different manifestations, and outcomes of treatment. It is important that each health system and each nation review and reorganize its medical research capacity. This narrative review abstract to analyze the rheumatology research setting in the UAE

Materials and methods: This abstract analyzes the rheumatology research environment in the Emirates Health Services and Ministry of Health and Prevention of the United Arab Emirates (UAE), its opportunities, and its challenges.

Results: The challenges of rheumatology research in the United Arab Emirates occur because of the potential following reasons; 1-demographic complexity of the UAE. The UAE's population is made up of several different demographic groups from different cultural, geographical, and socioeconomic backgrounds, as it relies on the expatriate for the growing economy. 2-complexity of the health system; UAE's health service is delivered by various health authorities (Ministry of Health and Prevention and Emirates Health Services, Department of Health Authority (DHA)-Dubai, Department of Health (DOH)-Abu-Dhabi), with each authority build up their own regulations resulting in absence of unifying nationwide health policies and research regulations and guidelines. 3-lack of organizational and administration support for the research and researchers at different levels including macro-level (such as, governments), meso level (such as, regional health authorities, hospitals), and micro-level (such as, clinical programs) levels. 4-absence of qualified rheumatology research centers that focus on researches and researchers. 5-lack of research allocated financial resources 5-absence of proper research environment including basic research training and time allocated for research, and finally 6-Lack of public awareness about research importance.

Conclusions: Research in general and in rheumatology, in particular, is a complicated process that requires long-term commitment and support. Therefore, there is an urgent need to establish an adequate framework and listed requirements that can support the researchers and the research sites in getting the needed funds and resources to self-sustain research activities for the best of public health care strategies.

Category: Clinical cases

MRC2021-A-1019

A case of rheumatoid arthritis and hidradenitis suppurative

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Background: Rheumatoid arthritis (RA) is a chronic polyarthritis autoimmune disease that has many extra-articular manifestations; including skin manifestations. Hidradenitis suppurativa is a suppurative condition of the apocrine sweat glands associated with induration, scarring, destruction of skin appendages, and sinus formation. Hidradenitis suppurativa had not been reported with RA. in the clinical case description we report a clinical case of hidradenitis suppurativa that occurs in the setting of RA.

Materials and methods: Mr. X is a 46 years old man, who was diagnosed in his childhood to have juvenile RA. Mr. X is one of 5 siblings who had been diagnosed with juvenile RA. Mr. X was under the care of another hospital.

At the first presentation to one of the Emirates Health Services (Ministry of Health and Prevention-United Arab Emirates) rheumatology clinic, he reported recurrent boils in the buttock and groin regions for 7 months. The boils are painful and break open releasing fluid or pus. As well it required several admissions to the surgical unit for the boils' excisions. After excision scars are left on the skin. Examination revealed short stature and growth retardation secondary to long-term steroid overuse. Hands examinations showed deformed hands. The right hand showed fixed flexion of all the metacarpophalangeal joints (MCPJS). Left hand showed Z-thumb deformity and swan neck deformity; extension of the proximal interphalangeal joints and flexion of the distal interphalangeal joints of the left 2nd, 3rd, 4th, and 5th fingers. There were 2 boils at the buttock and a number of scars of the previously excised boils investigations showed high erythrocytes sedimentation rate (ESR) of 143 mm/hr. and C-reactive protein (CRP) of 71 mg/dl, a sterile culture of the pus obtained from the boils, and negative rheumatoid factor (RF). Mr. X had been diagnosed to have hidradenitis suppurative which had been confirmed by the dermatology consultation.

Results: Dermatology consultation confirmed the diagnosis of hidradenitis suppurativa.

Conclusion: Hidradenitis suppurative occurs with RA. Realizing this combination is important to select the proper medications that can treat both medical conditions.

Category: Basic and translational research

MRC2021-A-1018

Killer cell lectin-like receptor subfamily B member 1 (KLRB1), lymphocyte function-associated antigen 3 (CD58), and Niban1 (FAM129A) are unique markers for developed (central and effector) memory T cells in rheumatoid arthritis

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Background: Memory T cells (TM) cells are T cells with more prolonged survival and faster recall responses upon secondary challenge. Effector memory-T subset was shown to be explicitly expanded in the peripheral blood of patients with RA in correlation with disease activity.[1] Their disturbance was reported in early RA with intrinsic abnormalities in differentiating into cytokine-producing effector cells.[2] The molecular basis of such abnormalities is not yet known. Using publically available transcriptomic database to explore transcriptomic profiling of naïve, central memory, effector memory cells, and stem cell the least-developed memory subset memory T cells of human CD4+ T cells from patients with rheumatoid arthritis to identify biomarkers that can indicate their activation.

Materials and methods: A recently publicly available transcriptomic dataset (GSE80785) was identified using GEO Omnibus database (https://www.ncbi.nlm.nih.gov/geo/) that fulfills the criteria of cells examined. GEO2R tool (https://www.ncbi.nlm.nih.gov/geo/geo2r/?acc=GSE80785) was used to identify common DEGs between the different groups.

Results: Three genes (KLRB1, CD58, and FAM129A) were found to be unique markers for developed (central and effector) memory T cells in rheumatoid arthritis compared to naïve and stem cell least-developed memory subset

memory T cells with the highest expression in effector ones. Their expression was increasing with the memory status of the CD4 cells indicating their role in memory and making them potential biomarkers for activated autoreactive T cells in RA

Conclusion: KLRB1, CD58, and FAM129A are unique markers for developed (central and effector) memory T cells in rheumatoid arthritis.

Category: Basic and translational research

MRC2021-A-1016

Rapid progression of post COVID–19 multisystem inflammatory syndrome in an Adult (Mis–A): A condition to be recognized

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Background: There is still much to understand about COVID–19, especially in regards to the long term effects and the clinical syndromes that follow the acute primary infection. A serious multisystem inflammatory syndrome was described initially in children 1 and then in adults as well.Multisystem inflammatory syndrome in adults (MIS–A) is a severe illness requiring admission in patients ≥21 years old, with severe extra pulmonary involvement, raised inflammatory markers and evidence of previous COVID–19 infection within 12 weeks.

Materils and methods: A 22-year-old male was admitted after few days of neck pain, swollen lymph nodes, headache and temperature, followed by vomiting, diarrhea, and abdominal pain. Three weeks before the onset of symptoms he was diagnosed with mild COVID–19 infection. The medical and family history were unremarkable. On admission he was hemodynamically stable and apyrexial. Some cervical lymph nodes were palpated, otherwise no other abnormality was detected. A CXR was normal. During admission CT chest chest–abdo–pelvis and CT pulmonary angiogram were normal. Within 24 hours the patient developed severe cardiogenic shock and was transferred to ICU where inotropes were started. An echocardiogram showed global hypokinesia, EF 30–35%, no chamber dilatation, and stunned myocardium. Given the history of COVID–19 infection with negative Polymerase chain reaction and positive serology, deranged LFTs, pancytopenia, raised troponin and inflammatory markers, a diagnosis of MIS–A was made and confirmed when all the other etiology tests returned negative. Methylprednisolone, IVIG, Tocilizumab, and prophylactic enoxaparin were administered.

Result: The patient improved within 24 hours. The inotropes were discontinued within 72 hours. The cardiac ejection fraction improved to 55% on day 6. The patient was discharged asymptomatic after 12 days on Prednisolone 60 mg.

Conclusions: MIS-A is likely to become a common presentation and it is important to bring it to the attention of our colleagues working in primary and secondary care. The MIS-A can be severe even in patients with previous oligo symptomatic COVID–19 infection. The quick deterioration observed in our case suggests that prompt recognition and treatment are critical to achieve complete resolution. In patients presenting with acute febrile illness MIS–A

should be routinely included in the differential diagnosis. The MIS-A is ultimately a diagnosis of exclusion and therefore a thorough diagnostic workup is required. The combination of supportive management and multidrug anti-inflammatory treatment was effective in our case but robust evidence is needed.

Category: Clinical cases

MRC2021-A-1015

A case of Pl-7 positive amyopathic dermatomyositis associated with autoimmune liver disease

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Background: Amyopathic dermatomyositis (ADM) is a variant of dermatomyositis (DM) characterized by the presence of pathognomonic skin features of dermatomyositis but without clinical muscle weakness. The ADM is believed to account for about 20% of cases of DM.

Materials and methods: We present the case of a 40-year-old lady who presented in May 2020 with a 6 week history of periorbital oedema and a heliotrope rash. She had a past medical history of rectosigmoiditis diagnosed on colonoscopy in 2018 and managed with mesalazine 2g once a day. Blood tests revealed a transaminitis (ALT 372 u/l, AST 201 u/l). Full blood count was normal as were inflammatory markers (ESR 4 mm/hr, CRP 2 mg/dl) and renal function (creatinine 63.9 umol/l). The CK was normal (72 u/l). A non-invasive liver screen including hepatitis B and C, caeruloplasmin, alpha-fetoprotein and anti-mitochondrial antibodies was negative. A liver ultrasound was reported as normal. An ANA was positive and an ENA screen revealed positive RNP-68, S/RNP and anti-smooth muscle antibodies. Atypical pANCA antibodies were also positive. A myositis antibody screen revealed a positive PL-7 antibody. A skin biopsy of the affected area around the eye demonstrated prominent dermal periadnexal and perivascular chronic inflammation composed mainly of lymphocytes and plasma cells consistent with a connective tissue disease. A liver biopsy confirmed autoimmune liver disease (AILD). Tumour markers (CEA, CA 125, and CA 19-9) were normal and a CT scan of the chest, abdomen and pelvis to rule out occult malignancy was normal. Full lung function tests including transfer factor were normal. A diagnosis of PL-7 positive ADM with associated AILD was made.

Results: The patient's ADM and AILD were successfully treated with a reducing course of budesonide (6 mg 3 times daily for 4 months reduced to 3 mg twice daily for 4 months then 3 mg daily for 3 months) and mycophenolate mofetil 720 mg twice daily. Currently, 16 months after her initial presentation, the patient's ADM and AILD are in remission and she remains on mycophenolate mofetil 720 mg twice daily.

Conclusions: Anti-PL-7 is one of a number of anti-aminoacyl tRNA synthetase (ARS) antibodies that are associated with DM, polymyositis (PM) and ADM. Other anti-ARS antibodies include Jo-1, PL-12, EJ, OJ, KS, ZO and

YRS/HA. Antibodies to PL-7 have been reported to be associated with milder muscle involvement than antibodies to Jo-1. Antibodies to PL-7 have been associated with severe interstitial lung disease (ILD). An association been AILD and inflammatory myositis has been reported in the literature but only in a handful of case reports.

Category: Clinical cases

MRC2021-A-1014

A tale of 3 rashes

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Background: Skin rashes are commonly an external visible marker of internal disease and are therefore often useful in the diagnosis of a variety of systemic diseases managed by rheumatologists. I present a case of a lady who developed 3 discrete episodes of different skin rashes over the course of 2 months that represented 3 different underlying pathologies but were nevertheless intrinsically linked.

Materials and methods: A 42-year-old lady presented in October 2019 with a non-blanching, purpuric rash across her shins bilaterally. In September 2019, she returned from Thailand with mosquito bites on her arms and legs. Shortly after returning from Thailand, she presented to another hospital with fevers, myalgias and severe arthralgias. Her CRP was raised at 128 mg/l and she was given intravenous cefuroxime for 3 days followed by oral co-amoxiclav for presumed infected mosquito bites. Shortly after starting the intravenous cefuroxime, she developed a second rash on her torso, arms and legs. She was seen a week after discharge from hospital with ongoing severe arthralgias although her CRP had settled and was prescribed celecoxib 200 mg twice daily. Shortly after this, she developed a third rash on her shins bilaterally.

Results: She presented in clinic in October 2019 with bilateral pedal oedema and a non-blanching, purpuric rash across her shins bilaterally consistent with Henoch Schonlein Purpura (HSP). A urinalysis was negative for blood and protein. She complained of widespread large and small joint polyarthralgias but this was no synovitis on examination. An anti-streptolysin O titer (ASOT) was negative but IgM and IgG antibodies to Chikungunya were positive. Her CRP was raised at 22 mg/l. A diagnosis of Chikungunya fever was made transmitted by mosquito bites followed by a maculopapular drug eruption secondary to cefuroxime and subsequent HSP secondary to recent infection. Her symptoms were treated with a reducing course of prednisolone 40 mg once a day and her rashes and arthralgias settled over the course of 2 months. Her urinalysis remained negative for blood and protein throughout.

Conclusion: Chikungunya virus is an arthropod-borne virus that is transmitted by mosquito bites. It can cause fevers, severe polyarthralgias (70-100% of cases) and polyarthritis (44-63% of cases). Chronic arthritis has been reported in 25% to 75% of cases. Chikungunya fever is endemic in parts of Western Africa but is also common in many regions of Asia. Maculopapular drug eruptions are the most common type of drug hypersensitivity reaction and are characterized by a generalized eruption of erythematous macules or papules after initiating drug therapy. Maculopapular drug eruptions are common side effects of cephalosporins. The HSP is a small vessel leucocytoclastic vasculitis characterized by palpable purpura. The purpuric rash is typically symmetrical and located primarily in

pressure dependent areas such as the lower extremities. Many cases of HSP are preceded by an upper respiratory tract infection such as Streptococcus but many other infectious agents have been implicated as possible triggers.

Category: Health professionals in rheumatology practice and clinical care

MRC2021-A-1013

Coronavirus disease of 2019 (COVID-19) infection in patients with rheumatic conditions: Our experience

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Background: According to the literature, patients with rheumatic disease receiving immunosuppressants are at a higher risk of acquiring infections. However, this may not apply to COVID-19 infection according to the global rheumatology alliance provider registry. There is no evidence that underlying rheumatic disease or its treatment pose an extra risk factor for severity of COVID-19. In fact, hydroxychloroquine was used, and interleukin-6 inhibitors are currently used to treat COVID-19.

Objectives: To understand the behavior of COVID-19 in rheumatic patients by exploring the demographics, epidemiology, and outcome in rheumatic patient who contracted covid-19 before the vaccination era.

Materials and methods: This is a retrospective observational study reporting the epidemiology of patients with different rheumatic diseases who contracted COVID-19 infection in 2 Mediclinic Hospitals in Dubai. Data of patients who attended the rheumatology clinic were collected via patients' electronic medical records. This included age, gender, nationality, body mass index, co-morbidities, rheumatic diagnosis, presenting symptoms, complications, and medications.

Results: A total of 28 (68%) patients were identified, with the majority being females. Median age was 45 years (22-70), and 2 (6%) patients above 64 years. Seven (25%) patients were obese, 5 (16%) were hypertensive, 3 (10%) were asthmatic, 5 (17%) were smokers and one (3%) patient was diabetic. Majority of patients (80%) had mild to moderate disease with myalgia, fever, and headache being the predominant symptoms. Two patients needed hospitalisation, one with a diagnosis of systemic lupus erythematosus and another with antiphospholipid antibody syndrome. The most common rheumatic diagnoses were rheumatoid arthritis (43%), systemic lupus erythematosus (14%), ankylosing spondylitis (11%), and enteropathic arthritis (7%). Medications included Hydroxychloroquine alone or in combination (29%), Adalimumab (25%), Tofacitinib (25%), and Methotrexate (21%). No patient received prior B cell depletion therapy.

Conclusion: We observed full recovery in all patients with the majority having mild/moderate symptoms. The median time to full recovery was 14 days (7-90 days). Although our data is from a small sample, it reflected similar experiences of other centers where patients with rheumatic diseases were not at any additional risk of severe COVID-19 disease compared to the general population

HIGHLIGHTS FROM MIDDLE EAST RHEUMATOLOGY CONFERENCE

Category: Clinical Cases

MRC2021-A-1012

Multicentric osteolysis, nodulosis, and arthropathy in 2 unrelated children with matrix metalloproteinase 2 variants: Genetic-skeletal correlations

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Background: Multicentric osteolysis, Nodulosis, and Arthropathy (MONA) syndrome is a rare genetic skeletal dysplasia. Its diagnosis can be deceptively similar to childhood-onset genetic skeletal dysplasias and juvenile idiopathic arthritis. We aimed to report the syndrome's clinical and radiologic features with emphasis on skeletal mani- festations and establish relevant phenotype-genotype correlations.

Materials and methods: We evaluated 2 boys, 4-and-7-years-old with MONA syndrome. Both patients had consanguineous parents. We verified the diagnosis by correlating the outcomes of clinical, radiologic and molecular analysis. We specifically evaluated the craniofacial morphology and clinical and radiographic skeletal abnormalities. We contextualized the resultant phenotype- genotype correlations to publications on MONA and its differential diagnosis.

Results: Skeletal manifestations were the presenting symptoms and mostly restricted to hands and feet in terms of fixed extension deformity of the met- acarpophalangeal and flexion deformity of the interphalangeal joints with extension deformity of big toes. There were arthritic symptoms in the older patient especially of the wrists and minute pathologic fractures. The skeletal radiographs showed osteopenia/dysplastic changes of hands and feet. Both patients had variants in the matrix metalloproteinase-2 gene which conformed to phenotype of previously reported literature in one patient while the other had a novel variant which conformed to MONA phenotype. Craniofacial abnormalities were present. However, minimal extra-skeletal manifestations.

Conclusion: Overall, there is an emerging distinctive skeletal pattern of involvement in terms of both clinical and radiographic features. This includes age of onset and location of presenting skeletal manifestations, chronological order of joint affection, longitudinal disease progression, specifics of skeletal radiographic pathology and craniofacial features. Nevertheless, physicians are cautioned against differential diagnosis of similar genetic skeletal dysplasias and juvenile idiopathic arthritis.

Category: Clinical research

MRC2021-A-1005

Ultrasound assessment of gout lesions in an algerian population with asymptomatic hyperuricemia

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HIGHLIGHTS FROM MIDDLE EAST RHEUMATOLOGY CONFERENCE

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Background: Hyperuricemia is a common biological abnormality, often clinically asymptomatic. However, it can announce a gout and be linked to many diseases such as metabolic syndrome, high blood pressure or kidney disease. In fact, the majority of learned societies do not recommend any urate lowering therapy (ULT) as long as the hyperuricemia remains asymptomatic. But it turns out that part of the population with asymptomatic hyperuricemia (AH) develops a gout after a few years particularly with genetic predisposition, but also on certain risk factors that need to be confirmed. By this way, musculoskeletal ultrasound (MUS) can detect "asymptomatic gout" by visualizing signs of urate deposits (UD) in subjects with AH. Our main objective is already to estimate the prevalence of specific signs of gout in Algerian population with AH and assess the factors exposing to UD.

Materials and methods: This is a descriptive cross-sectional study from January 2017 to February 2019, with the recruitment of subjects with AH and serum urate level >60 mg/L, who do not take any ULT and have not associated any chronic inflammatory rheumatism, where we performed a MUS of the knees, metatarsophalangeal joints MTP1, MTP2 and metacarpophalangeal joint MCP2 and MCP3 with the Achilles, patellar and quadricipital tendons.

Results: We retained 258 subjects with AH, 132 women and 126 men (sex ratio=0.95), the mean age was 59 years, the mean body mass index (BMI) was 28.4 kg/m^2, 42 patients were under diuretics, 37 patients reported being on low-dose of aspirin 100 mg daily. The mean rate of serum urate levels was 78±10 mg / L, the prevalence of UD found at the MUS was 22% (n=58), among them 36 % (21/58) had a sign of the double contour on the MTP1 and 29% (17/58) on the knee, 7% (4/58) had tophi on the MTP1 and 3% (2/58) had urate aggregates. The factors reported to be linked to UD in the sample were: the male gender (p=0.0016); the high uric acid level (p=0.0355); BMI (p=0.0427); taking diuretics for women (p=0.0002).

Conclusion: Through this work, it is clear that elementary ultrasound lesions related to gout disease are common in a population with AH and concerned one fifth of subjects in our study with a higher risk in men and subjects with obesity and high uric acid level, but also in women taking diuretics. These results need to be enhanced with a randomized controlled study in order to better determine the predisposing factors for gout in any subject with AH.

Category: Clinical research

MRC2021-A-1003

The prevalence of the traditional cardiovascular risk factors in the United Arab Emirates

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Background: Rheumatoid arthritis (RA) is a systemic autoimmune disease characterized by excess morbidity and mortality that is large because of cardiovascular disease (CVD). The prevalence of CVD risk factors in RA patients

of the United Arab Emirates is not known. This study describes the prevalence of the cardiovascular disease risk factor among RA patients.

Materials and methods: The study design was cross-sectional where 229 rheumatoid arthritis patients' electronic files had been reviewed. The files recruited from 3 main hospitals of the Ministry of Health and Prevention (MOHAP) of the United Arab Emirates (UAE). The MOHAP is the only federal health institute in the UAE, that is responsible for the nationwide health cover in the UAE. All of the RA cases met 2010 EULAR/ACR classification criteria for RA. The lab tests are all carried within the MOHAP labs.

Results: There were 200 females (87%) and 29 males (13%). Eighty-five percentage of the patients had established RA and 15% were early RA cases. The mean age of the patients was 51 years (Min 22-Max 86). While the mean age at RA symptoms onset was 42±16 years, the mean age at diagnosis was 47±14 years. Fifty-Eight percentage of the patients had morning stiffness with a mean duration of 90 minutes. Thirty-two percentage of the patient had a history of hypertension, 7% history of CVD, 22% had diabetes mellitus, and 16% were confirmed to have dyslipidemia and are on anti-lipid medications. Nine percentage of the patient had a history of smoking ever, and 7% gave a history of current smoking. The mean systolic blood pressure was 128±17 mmHg (74-180), mean diastolic blood pressure was 74±11 mmHg (43-99), extraarticular manifestations (excluding CVD and rheumatoid nodules) presented in 9% of the patients. Rheumatoid nodules existed in 9% of the patients. The mean body mass index (BMI) was 31±7 kg/m^2 (3-54), 60% of the patients were rheumatoid factor positive, mean ESR was 39±31 mm/hr (2-312), CRP 15±22 mg/dl (1-200), uric acid 266±86 µmol/L (79-675), cholesterol 4.7±1.1 mmol/L (1.8-7.7), triglyceride (TG) 1.3±0.8 mmol/L (0.25- 6.3), high density lipoprotein (HDL) 1.4±0.44 unit (0.08-2.83), mmol/L, and low-density lipoprotein(LDL) 2.8±1 mmol/L (0.85-7.12).

Conclusion: The cluster of CVD risk factors is highly prevalent among the UAE RA population. Early detection and management of the CVD risk factors are of great importance to retard the CVD risk. High ESR and CRP value among RA patients who have full medical service cover by the federal institute indicate the unmet need in RA management.

Category: Clinical research

MRC2021-A-1002

The pattern of allopurinol prescription among chronic kidney disease patients in a tertiary care centre: A single-centre experience

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Introduction: Hyperuricemia is prevalent in patients with chronic kidney disease (CKD). Although it is associated with CKD incidence and progression, treating asymptomatic hyperuricemia with uric acid-lowering agents is still debatable.

Objective: determine the rate of non-classical prescription of allopurinol in CKD patients.
Settings and design: This was a retrospective study of adult patients prescribed allopurinol with CKD (stages 2–5) in Doctor Soliman Fakeeh Hospital (DSFH) Jeddah, Kingdom of Saudi Arabia, from 1/1/2016 to 1/1/2017.

Materials and methods: Eligible patients were identified from the hospital's pharmacy system and cross-referenced with the electronic health records. Demographic data, laboratory results and indication as recorded by the prescribing physician were extracted. Prescriptions with no indication were categorized based on the uric acid levels. Hyperuricemia was documented as mild (6-10 mg/dL in females and 7-13 mg/dL in males) and severe (>13mg/dL in men and >10mg/dL in women).

Results: From the 594 identified patients, 464 (78.1%) were males. A third of prescriptions (209/594) had no indication, 43.5% of which (91/209) had no documented uric acid levels, and 16.3% (34/209) had normal levels. Including patients with undocumented indication, 64.2% (381/594) were prescribed allopurinol for hyperuricemia, 86.4% of which (329/381) had mild hyperuricemia, and only 13.6% (52/381) had severe hyperuricemia. Other indications included malignancy-related disorders (6.2%, 37/594), gouty arthritis (5.2%, 31/594), and stones of unknown aetiology (3.4%, 20/594).

Conclusion: The percentage of allopurinol prescription to patients with CKD without a clear indication in our centre was markedly high. This might increase the risk for side effects with no evidence-based benefits

Category: Health professionals in rheumatology practice and clinical care

MRC2021-A-1001

Allopurinol prescription patterns among patients in a Saudi tertiary care centre

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Objective: Physicians frequently prescribe allopurinol for uric acid deposition disorders. However, reports have emerged of the inappropriate use and over prescription of allopurinol. We conducted this study to determine the rate of inappropriate prescription of allopurinol in a Saudi institution.

Materials and methods: This cross-sectional descriptive study was conducted on all adult patients who had been prescribed allopurinol in Doctor Soliman Fakeeh Hospital, Jeddah, Saudi Arabia. Demographic data and laboratory results were retrieved from patients' electronic health records (EHR). We considered valid indications of allopurinol as significant hyperuricemia (>13 mg/dL in men and >10 mg/dL in women), confirmed gout, hyperuricosuria of more than 1100 mg/day, uric acid stones or recurrent calcium oxalate kidney stones, malignancy, and haemolysis. The possible valid indications were unconfirmed gout and unconfirmed type of kidney stones, whereas no documented indication or insignificant hyperuricemia was considered as an invalid indication.

Results: We included 1978 patients in this study. The cohort was composed of 76.4% men and 23.6% women. The mean±standard deviation of age of this patient cohort was 53 and 4 months ± 15 years. The mean±standard

deviation of duration since the first prescription was 1.53±2.2 years. Physicians prescribed allopurinol without a valid indication in 1539 patients (77.8%). More than a third of the patients (39%) did not have a documented indication and 38.8% were prescribed allopurinol for insignificant.

Conclusion: This study revealed a markedly high number of allopurinol prescriptions without a clear indication in our centre. This approach may potentially expose patients to serious side effects of allopurinol without added benefits.

Category: Clinical research

MRC2021-A-1000

The effect of osteoporosis on rheumatoid arthritis disease activity

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Background: Osteoporosis (OP) is one of the most common comorbidities associated with rheumatoid arthritis (RA). We aim to study the impact of OP on RA management and disease activity in our cohort of patients.

Materials and methods: A retrospective cohort study of 580 patients with RA alone or RA with OP was performed. The DAS28 score was used to assess disease activity. The data was collected from (RASD), a hospital electronic database. Chi-square and fisher exact test were performed to compare disease activity between disease groups.

Results: A total of 408 patients were included in this study. Three hundred fifty-three patients (86.5%) had only RA, and 55 (13.5%) had RA with OP. Both groups had a similar age, gender, ethnicity, BMI distribution, frequency of comorbidity, and vitamin D levels. Patients with RA with OP had RA longer than patients with RA alone (79.5±52.5 months vs. 106.6±62.6 months, independent t-test, p=0.01). The 2 groups had similar disease activity at their first three clinical visits. Both groups had similar disability at their first visit but RA and OP patients had greater disability at their 2nd and 3rd visits (independent t-test, p=0.0001 for each visit). Both groups were treated with biologic and non-biologic drugs with a similar frequency, types of drugs. The RA with OP patients received steroid more frequently than RA patients (61.7% vs. 41.7%, Chi-square test, p=0.03).

Conclusion: This study shows that RA with OP patients and RA patients had similar disease activity and received similar RA treatments, although RA with OP patients were more frequently treated with steroids. The RA with OP patients had greater disability than RA patients. We recommend physicians focus on controlling the disease activity of RA, perform early screening for OP, and consider early treatment of RA associated symptoms and findings of OP.