media thickness (cIMT), electrocardiography (ECG) and echocardiography with assessment of ejection fraction (EF) and diastolic dysfunction (E/A ratio).
Results: The significant differences between male vs female RA patients included: higher mean values of cIMT [0,93 (0,19) vs 0,80 (0,22) mm, p=0,04], atherogenic index [4,2 (1,4) vs 3,5 (1,0), p=0,03] and SCORE [5,7 (3,7) vs 2,8 (2,7), p<0001]; as well as lower concentration of HDL-cholesterol [(50,2 (12) vs $59^{14,6}$ mg/dl, p=0,04] and NT-proBNP [66,6 (61,2) vs 106,8 (61,5) pg/ml, p=0006]. The mean values of age, disease duration, DAS28, C-reactive protein, body mass index, BP, QTc, E/A and EF were not significantly different in male and female patients with RA of low activity.
In the control group no significant differences were observed between male and female subjects, when considering: age, cIMT, BP, QTc, EF, E/A.
All the male RA patients had features of subclinical or advanced atherosclerosis (cIMT $\geq$0.6 mm), there were no male patients with normal cIMT (<0,6 mm). In controls normal cIMT was found in 5 (33,3%) and subclinical atherosclerosis in 10 (66,7%), there was no control subject with advanced atherosclerosis (p=0,01). The mean age of patients and controls did not differ significantly.
Conclusions: The results of the study suggest an unfavourable CV risk profile in male RA patients with low disease activity. The higher CV risk was observed in male RA patients in comparison with both controls of comparable age, as well as with female RA patients of comparable age, disease duration and activity. It seems that the male gender contributes considerably to CV risk in the period of low RA activity.
Disclosure of Interest: None declared
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AB0209 OPTIMISATION OF ULTRASONOGRAPHIC EXAMINATION FOR THE DIAGNOSIS OF EROSIVE RHEUMATOID ARTHRITIS VERSUS EROSIVE OSTEOARTHRITIS WITH RADIOGRAPHY CONSIDERED AS GOLD STANDARD

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Background: Rheumatoid arthritis (RA) is the most prevalent chronic inflammatory joint disease[1,2] responsible for structural damage. Radiography (RX) is considered as the gold standard for visualising and quantifying bone lesions in RA.[3] Musculoskeletal ultrasound (US) is booming in clinical practice for the diagnosis of RA. US can detect more erosions than RX at the joint level, especially at an early stage of the disease.[4]
Objectives: To determine thresholds and better scenarios for the diagnosis of erosive RA by US in RA and osteoarthritic (OA) patients.
Methods: $^{\text{Patients fulfilling ACR 1987}}$ and/or $\text{ACR}/^{\text{EULAR 2010}}$ criteria for RA or hand OA criteria were prospectively included. A modified Sharp erosion score was assessed by two blinded readers and one adjudicator for discordant cases (number of eroded joints$\leq$three). Erosions in US were scored on six bilateral joints (MCP2–3, 5; MTP2–3, 5) with a four-grade scale.
Results: A total of 168 patients were included: 122 RA (32 early RA <2 years; 90 late RA $\geq$2 years); 46 OA patients. On RX: 42 RA patients (6 early; 36 late) and 5 OA patients were eroded according to $\text{ACR}/^{\text{EULAR 2013}}$ criteria (sensitivity: 34.4%, specificity: 89.1%). On US, 95 RA patients (21 early; 78 late) and 12 OA patients were eroded. Considering at least two joint facets eroded (threshold 1) or at least one joint facet eroded at grade 2 (threshold 2), sensitivities were good (68%–72.1%) and specificities excellent (89.1%–100%). With only six targeted joint facets examined, 73 and 74 patients were classified as erosive RA with threshold 1 and 2 with good sensitivities (59.8%–60.0%) and excellent specificities (95.6%–100%) respectively. For all scenarios, agreement between RX and US for the diagnosis of erosive RA was excellent (88.1% to 92.8%).
Conclusions: US erosion assessment of six targeted joint facets permitted to detect 1.7 times more erosive RA patients than RX in late and early RA.

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AB0210 CLINICAL AND MUSCULOSKELETAL ULTRASOUND ASSESSMENT OF THERAPEUTIC RESPONSE TO TOFACITINIB IN PATIENTS WITH RHEUMATOID ARTHRITIS: REAL-WORLD CLINICAL EXPERIENCE FROM A SINGLE CENTRE IN HONG KONG

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Background: Increasingly, musculoskeletal ultrasound (MSUS) has been demonstrated as an effective method for monitoring disease activity and joint damage in patients with rheumatoid arthritis (RA).
Objectives: The objective of this single-centre, 12 week study was to evaluate the effects of tofacitinib therapy in Chinese patients with RA using clinical, laboratory and sonographic assessments, with the view to identifying factors that may predict response to tofacitinib. Furthermore, the study sought to determine whether MSUS would be comparable to conventional techniques for monitoring disease activity in RA.
Methods: Patients with RA (n=18) were treated with tofacitinib 5 mg bd for 12 weeks. Clinical, laboratory and ultrasound examinations were conducted at baseline (T0), and weeks 4 (T1), 8 (T2) and 12 (T3). Erythrocyte sedimentation rate, C-reactive protein, physician and patient visual analogue scale for disease activity, number of tender and swollen joints, Clinical Disease Activity Index (CDAI), Simple Disease Activity Index (SDAI) and Disease Activity Score in 28 joints (DAS28) were assessed and compared. MSUS was performed bilaterally in all metacarpophalangeal, interphalangeal, wrist and knee joints. A semi-quantitative score (0–3) was used to indicate the presence of a localised inflammatory process and/or structural damage. The cumulative total was used as an indicator of global change in each joint (single joint score). The sum of the single joint scores was used as an indicator of overall polyarticular involvement in each patient (total joint score).
Results: Of the 18 patients recruited into the study, all 18 were examined at T0, T1 and T2, and 17 patients were evaluated at T3. All clinical and laboratory measures, as well as MSUS scores, were significantly reduced during follow-up. There was a significant correlation between MSUS scores and conventional (clinical and laboratory) measures of disease activity. Correlation coefficients between the techniques and factors potentially predicting response to tofacitinib will be reported.
Conclusions: A positive response to tofacitinib treatment was shown by both MSUS examination and clinical evaluation, with good correlation between the methods. In a busy, every-day, clinical-practice setting in Hong Kong, MSUS was found to be a useful tool for monitoring and following-up the effects of biologic therapy in RA, for the assessment of both inflammatory and destructive changes.
Disclosure of Interest: None declared
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AB0211 THE RELATIONSHIP BETWEEN THE ELEVATED SERUM IMMUNOGLOBULIN G4 LEVEL AND DISEASE ACTIVITY IN PATIENTS WITH RHEUMATOID ARTHRITIS

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Background: High levels of serum immunoglobulin G4 (IgG4) would comprise a useful diagnostic tool in IgG4-related disease, but little information is available about IgG4 in conditions other than IgG4-related disease, including rheumatic diseases. Previous studies indicate that the elevated serum IgG4 in rheumatoid arthritis (RA) is common and disproportional to total IgG.
Objectives: The aim of study is to evaluate the level of serum IgG4 and IgG4/total IgG ratio in patients with RA.
Methods: Ninety-six patients with RA and one hundred and thirty-five non-RA controls were enrolled between $^{\text{March 2014}}$ and July 2017. All samples were collected before the treatments. The levels of Serum total IgG and IgG4 were determined by nephelometric assay. The cut-off value of serum IgG4 was 135 mg/dL. Data on clinical variables and disease activity markers, such as numbers of tender and swollen joints, levels of acute phase reactants and disease activity score 28 (DAS28) were recorded in RA patients. We compared the levels of serum IgG4 and the ratio of IgG4/total IgG in rheumatoid arthritis with healthy controls and other rheumatic diseases. This study also investigated the difference the relationship between levels of serum IgG4 and disease activity in RA.

Results: Among 96 RA patients, the mean of serum IgG4 was 48.0±45.4 mg/dL and 6.3% had elevated serum IgG4. The mean serum IgG4/IgG ratio of RA patients was 3.5%±2.8% (range 0.2%~16.9%). There was no patient with elevated serum IgG4 in ankylosing spondylitis, systemic lupus erythematosus, Sjogren's syndrome, and inflammatory myositis. When the patients were divided according to clinical activity, the percentages of the positive serum IgG4 were 25% in active disease group and 4% in low activity group. However, the serum IgG4 levels of the RA patients with active disease activity were not significantly higher than those of the RA patients with low disease activity (58.3±44.3 mg/dL vs. 39.9±30.1 mg/dL). No significant relationship was observed between the ratio of IgG4/total IgG and disease activity. The IgG4 concentrations and total IgG/IgG4 ratios were similar between RA and the other autoimmune diseases ($p>0.05$).
Conclusions: Our results showed that elevated serum IgG4 in RA is relatively common. However the presence of the elevated serum IgG4 was not associated with disease activity of RA. Further investigations are needed to explore the clinical significance in a larger study population.

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AB0212 DIAGNOSTIC DELAY FOR RHEUMATOID ARTHRITIS: A SYSTEMATIC REVIEW

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Background: Rheumatoid arthritis (RA) is a common inflammatory condition, affecting 1% of the population and causing pain, stiffness and swelling, leading to significant disability and loss of function[.[1] Delays in the diagnosis and treatment of RA can lead to worsened joint damage and disability, in addition to a reduced rate of disease-modifying antirheumatic drugs(DMARD)-free remission. Current (2016) EULAR guidelines specify that combination DMARD treatment be initiated within 3 months of the onset of persistent RA symptoms[.[2] Unfortunately, this target is not always achieved due to delays between symptom onset to treatment initiation.
Objectives: The aim of this systematic review, was to determine the extent of delay that occurs at different points in the patient's journey from RA symptom onset to treatment initiation, providing benchmarks of delay.
Methods: Embase and Medline were searched for articles examining diagnostic and treatment delay of RA. To be included, articles had to report a time-period of delay in an adult RA population. Papers were screened by three authors (CAH, JAP, IS). The primary outcome was the reported time-period of delay at any point from RA symptom onset to treatment. Due to skewed delay data, medians (with Interquartile range (IQR)) were selected and reported using narrative synthesis. Different time-periods of delay were categorised to facilitate comparison.
Results: Of 4925 returned articles, 1501 duplicates were removed. The remaining articles were then screened by title, abstract and full text, leaving 26 from which we extracted data. Delay periods were categorised as 1) symptom onset to initiation of DMARDs (n=9), 2) symptom onset to diagnosis (n=14), 3) symptom onset to 1st healthcare professional (HCP) appointment (n=15), 4) 1 ST HCP appointment to rheumatology referral (n=4) and 5) 1 ST HCP appointment to diagnosis (n=4). Time-periods of delay were typically skewed to the right. The total delay from symptom onset to receiving DMARDs has dropped since the 1980's (429 weeks before 1987) and by 2014 data indicates an average delay of 23 (IQR 14, 43) weeks. Within this total delay period, delay from symptom onset to diagnosis is at a minimum 16(^{7,55} weeks and delay from symptom onset to first contact with a HCP predominantly ranges from 2 (1,8) to 10(^{4,24} weeks in data from 2010 onwards. Delay between 1st HCP appointment and Rheumatology referral can be as quick as 2 (1,5) weeks and is within 12(^{2,48} weeks across all data points. Delay acquired between 1st HCP appointment and receiving a diagnosis has decreased overtime, most recently, delay was reported as 21 weeks.
Conclusions: Time from RA symptom onset to receiving treatment has reduced considerably in recent decades. However, despite current guidelines and research indicating an optimal treatment window for RA of twelve weeks from symptom onset, this remains unmet, with this delay approximately twice the recommended period. Continued effort is required in reducing delay across all areas of the RA patients' journey to the early treatment needed to improve outcome.

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AB0213 CORRELATION BETWEEN COMPONENTS OF THE DAS28 SCORE AND HEALTH ASSESSMENT QUESTIONNAIRE IN EARLY RHEUMATOID ARTHRITIS

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Background: The health assessment questionaire (HAQ) in rheumatoid arthritis (RA) has been widely validated as a patient reported outcome measure (PROM). In the United Kingdom regulatory bodies such as the national institute of healthcare and clinical excellence (NICE) have been using improvement in HAQ as a surrogate for efficacy of drugs in RA and has informed their calculation of quality adjusted life year, and calculating health costs using incremental costs effectiveness ratios. Most clinical trials in RA report their primary outcome as improvement in clinical parameteers such as swollen and tender joints, inflammatory markers and patient and physician global assessment of disease. What is not clear how the two sets of parametes interact. Some reports[1] indicate that there is a strong correlation in early disease, but this has not been validated.
Objectives: We set out to determine the relationship bewteen HAQ scores and clinical paremeters of the Disaese activity score (DAS28) in addition to physician global.
Methods: Patients were recruited from a single centre from the RAMS study in the North west of England. This is a study of patients with early newly diagnosed RA commencing methotrexate A subset of patients filled in the HAQ questionanire and this as used as an outcome variable using linear regression and the swollen joints, tender joints, patient global assessment of disease as well as physician assessment of disease in addition to inflammatory markers were used as explanatory variables. These were then adjusted for age.
Results: 81 patients were included in the analysis. median age was 63.1 years (IQR 52.9,72.5). 50 (61.7%) were female. the median HAQ score at baseline was 1 (IQR 0.5,1.5) the median DAS28 score 5.3 (IQR 4.5,6.3). Tender joints at baseline correlated well with HAQ score Beta=0.058 95% CI, 0.04,0.08 ($p<0.01$). Swollen joints did not correlate with the HAQ beta=0.000 (95%CI −0.3,0.3). Physician global correlated well with disease beta=0.014 (95%CI 0.005,0.022). Patient global assessment also correlated well with HAQ (beta 0.014 95% CI 0.008,0.020). CRP did not correlate with HAQ (beta 0.00261 95% CI −0.002,0.007)
Conclusions: In this small study, patient and physician related outcome measures correlate with HAQ scores at baseline more than measures of joint swelling and inflammatory markers. This indicates that using HAQ as an outcome measure underestimates the effect of treatment. When assessing the efficacy of drugs using HAQ this should be taken into account. Validity of the approach needs to be reviewed.

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AB0214 THE TRAJECTORY OF DISEASE ACTIVITY IN RHEUMATOID ARTHRITIS IN THE FIRST TWO YEARS OF TREATMENT IN AN ASIAN RA COHORT

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Background: Response to disease-modifying antirheumatic drugs (DMARDs) is heterogenous. Clinical information and baseline characteristics do not allow reliable prediction of which trajectory patients will follow after DMARD initiation.
Objectives: We analysed the change in disease activity over the first two years of treatment in rheumatoid arthritis (RA) to identify different treatment response patterns among RA patients initiating DMARDs. We wanted to establish a predictive model for identifying patients with different treatment response patterns.