AB0133

LATE-ONSET AND BONE LOSS IN RHEUMATOID ARTHRITIS: WHAT FACTORS SHOULD WE CONSIDER?

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Background: Rheumatoid arthritis (RA) is an inflammatory rheumatism that causes alterations in bone components through the increased production of pro-inflammatory cytokines. Besides traditional risk factors of osteoporosis (OP), elderly RA patients are at higher risk of progressive decline in bone mineral density resulting from the disease.

Objectives: This study aimed to determine factors associated with bone loss in late-onset RA patients.

Methods: A cross-sectional study including patients with RA (according to ACR/EULAR classification criteria) in whom disease onset was after age 65 years. Sociodemographic data, daily calcium intake, and menopausal state were recorded. The characteristics of the disease were transcribed, including inflammatory markers (erythrocyte sedimentation rate (ESR) and C-reactive protein (CRP)), the disease activity assessed by Disease Activity Score 28 (DAS28), seropositivity for anti-cyclic citrullinated peptide antibody (ACPA) and rheumatoid factor (RF), and treatment modalities (cumulative dose of corticosteroids and Methotrexate). Bone mineral density (BMD) was assessed by Dual-energy X-ray absorptiometry. The risk of hip fracture (HF) and major osteoporotic fracture (MOF) after ten years were assessed using the fracture risk assessment tool (FRAX). Patients were divided into two groups (G1 with bone mineral loss (BML) and G2 without BML). Statistical analysis was performed using Kruskal-Wallis Test and chi-square. The level of significance was fixed for $p < 0.05$.

Results: The study included 58 late-onset RA patients with a female predominance (sex ratio M/F=0.3). The mean age was 71.6 ± 5.9 years [65-85], and the mean disease duration was 3.1 ± 2.9 years [0-15]. The mean calcium intake was 416.4 ± 168.6 mg per day [168-1043]. The mean BMD was 1.5 g/cm^2 [0.1-28.3] at the vertebral site and $0.7 \pm 0.2 \text{ g/cm}^2$ [-0.1, 1.2] at the femoral site. Bone loss was found in 55.2% of cases and was significantly associated with age ($p=0.022$) and longer disease duration ($p=0.015$). Similarly, there was a positive correlation between CRP and BML ($p=0.023$). However, bone loss was not correlated to sex ($p=0.865$), RF and ACPA positivity ($p=0.9$, $p=0.1$ respectively), or to coxitis ($p=1$). Similarly, disease activity, body mass index, and calcium intake were comparable between the two groups ($p=0.311$, $p=0.179$, $p=0.099$, respectively). G1 had a higher incidence of fractures without reaching a statistically significant correlation (63.2% in G1 and 51.3% in G2, $p=0.393$). Also, G1 had a higher risk of MOF ($p=0.003$) but not with a higher risk of HF ($p=0.127$). Regarding treatment modalities, the BML was significantly correlated to non-steroidal anti-inflammatory drug (NSAIDs) intake (85.7% in G1 and 37.8% in G2, $p=0.001$), but was not correlated to the cumulative dose of corticosteroids ($p=0.384$) and Methotrexate ($p=0.054$).

Conclusion: Our study showed that age, disease duration, NSAIDs, and inflammation were risk factors for a bone mineral loss in late-onset RA. Screening for these factors would be useful as part of an ideal form of fracture risk management.

Disclosure of Interests: None declared

DOI: 10.1136/annrheumdis-2021-eular.2878

AB0134

RELATIONSHIP BETWEEN INFLAMMATORY RATIOS AND RADIOGRAPHIC JOINT DAMAGE IN RHEUMATOID ARTHRITIS

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Background: The tight control strategy is recommended in rheumatoid arthritis to tailor treatment for patients. This strategy requires regular monitoring of both disease activity and structural damage. However, radiographic assessment cannot be performed frequently and the modified Sharp score is rarely evaluated in current practice. Besides, no biomarker was able to mirror structural damage (1).

Objectives: Our study aimed to assess the relationship between the modified Sharp score and the inflammatory ratios (platelet to lymphocyte ratio (PLR), neutrophil to lymphocyte ratio (NLR), lymphocyte to monocyte ratio (LMR), fibrinogen to albumin ratio (FAR) and CRP to albumin ratio (CAR)).

Methods: We performed a cross-sectional study including 53 patients with rheumatoid arthritis (RA). A cell blood count, fibrinogen and an albumin blood test were measured for each patient. Inflammatory ratios were also measured (PLR, NLR, LMR, FAR, and CAR). Modified Sharp score and its components (erosion score and joint space narrowing score) were evaluated using the radiograph of hand and foot.

Patients with infectious or hematological diseases were excluded from the study. Statistical analysis was performed using SPSS (Statistical Package for Social Sciences).

Results: Of the 53 patients, 39 were female (Sex Ratio: 2.8). The mean age was 53.9 ± 12.7 years. The mean disease duration was 10.1 ± 8.2 years. The average age of the onset of the disease was 43.8 ± 13.5 years.

The mean DAS 28-ESR score was 4.64 ± 1.23 . Forty three patients had a score higher than 3.2 (patients with moderate or high disease activity).

The mean values of PLR, NLR, LMR, FAR and CAR were 161.62 ± 86.59 , 2.84 ± 2.39 , 4.99 ± 3.23 , 0.12 ± 0.06 and 1.15 ± 1.38 .

The mean scores of joint erosion and joint space narrowing were respectively 12.76 ± 15.05 and 33.57 ± 25.80 . The mean modified Sharp score was 46.33 ± 37.74 .

There was a positive correlation between modified Sharp score and following ratios: PLR ($r: 0.501$; $p < 10^{-3}$), NLR ($r: 0.302$; $p: 0.031$), FAR ($r: 0.300$; $p: 0.030$), CAR ($r: 0.286$; $p: 0.042$).

Moreover, a positive correlation between joint space narrowing score and these ratios was identified: PLR ($r: 0.558$; $p < 10^{-3}$), NLR ($r: 0.428$; $p: 0.002$), FAR ($r: 0.371$; $p: 0.007$), CAR ($r: 0.387$; $p: 0.005$).

Joint erosion score correlated with PLR ($r: 0.299$; $p: 0.033$).

No correlation was found between LMR and radiographic score.

Conclusion: Our study showed that the modified Sharp score correlated with PLR, NLR, FAR and CAR in patients with RA. This finding suggests that these ratios could be used as inexpensive and reliable markers to reflect radiographic joint damage. Longitudinal studies are necessary to confirm our results.

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Disclosure of Interests: None declared

DOI: 10.1136/annrheumdis-2021-eular.2879

AB0135

A VERY EARLY CLINICAL RESPONSE TO TOFACITINIB IS ASSOCIATED WITH LOW RHEUMATOID ARTHRITIS ACTIVITY AFTER 3 AND 6 MONTHS

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Background: JAK inhibitors block intracellular signaling pathways responsible for the synthesis of cytokines and mediators involved in the development of chronic pain and central sensitization (CS). This determines a very rapid clinical response to JAK inhibitors. However, it is not clear how the significant pain reduction in the first weeks of therapy is associated with the achievement of low rheumatoid arthritis (RA) activity.

Objectives: to assess the relationship between the early clinical response to tofacitinib and the decrease in RA activity after 3 and 6 months.

Methods: Study group included 88 patients with RA, their age was 53±11.5, 79.3% of women, 89.8% of RF "+", DAS28 5.2±1.2, receiving DMARDs (methotrexate 59.5% and leflunomide 19.8%), who were administered with tofacitinib 5mg 2 times a day due to inefficacy or intolerance of biological DMARDs. There were assessed the pain severity using Brief pain inventory (BPI) questionnaire, the presence of neuropathic pain component (NPC) using PainDETECT questionnaire and signs of CS using Central Sensitisation Inventory (CSI) questionnaire at early time after tofacitinib administration, RA activity using DAS28 after 3 and 6 months.

Results: The mean pain severity at baseline was 5.3±2.0 according to the visual analogue scale (VAS 0-10), 51.1% of patients had signs of central sensitization (CSI ≥ 40), 15.9% had NPC (PainDETECT ≥18). 7 days after tofacitinib intake there was statistically reliable reduction of pain severity – up to 4.1±1.8 (p<0.05) and CS – CSI from 40.4±13.5 to 36.5±12.5 (p=0.01). After 28 days, the effect was higher: the pain level (VAS) was 2.8±1.6 (p=0.000), PainDETECT decreased from 11.8±5.6 to 6.8±3.1 (p=0.000), CSI – to 31.6±13.9 (p=0.000). DAS28 after 3 and 6 months was 3.7±1.3 and 3.6±1.2. The number of patients with pain decrease of ≥50% after 28 days of therapy was 59.9%. Low RA activity after 3 months. (DAS28 ≤3.2) was achieved in 64.4% of patients. There was a clear correlation between the number of patients with significant pain reduction at 28 days and the number of patients with low RA activity after 3 and 6 months ($r_s=0.548$, $p=0.000$; $r_s=0.790$, $p=0.000$). Six patients withdrew from the study due to inefficacy or social reasons. There were no serious adverse reactions.

Conclusion: The application of JAK inhibitor tofacitinib allows to reach a fast analgesic effect and reduce CS signs. An early clinical response to tofacitinib (pain relief) predicts a decrease in RA activity after 3 and 6 months of the therapy. Limitation: Open-label observatory study.

Disclosure of Interests: None declared

DOI: 10.1136/annrheumdis-2021-eular.2902

AB0136

ASSESSING THE RELATIONSHIP AMONG OBESITY, GENETIC POLYMORPHISM, AND CLINICAL PARAMETERS IN PATIENTS WITH RHEUMATOID ARTHRITIS

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Background: Several study suggested body mass index(BMI) may influence development of rheumatoid arthritis(RA). There are conflicting reports concerning the impact of high BMI on development of RA, but several reports of obese on drug resistance and functional impairment. The relationship of genetic polymorphism on obesity is unclear in RA.

Objectives: To examine the relationship among BMI, genetic polymorphism of obesity, disease activity of RA, laboratory parameters, and therapeutic agent of RA.

Methods: We have carried out a retrospective observational study by systematically analyzing medical records of total 289 patients diagnosed with RA in Shinko Hospital between March 2016 and December 2019. We also conducted genotyping single nucleotide polymorphisms (SNPs) including FTO (rs1558902 and rs9939609), UCP1 (rs1800592), ADR2(rs1042713) and ADR3(rs4994) after informed consent. Obesity was defined as BMI over than 25 and patients were divided between obese ("Ob") and non-obese ("non-Ob"). These SNPs, DAS-28CRP, laboratory parameters, methotrexate dose, use of biological DMARDs were compared between Ob and non-Ob patients.

Results: Of these 289 patients, 82.7% was female, mean age was 61.9 years and BMI was 22.4. Univariate logistic regression showed differences (p<0.1) between Ob and non Ob groups in UCP1 gene mutation(63.6% vs 78%, P=0.018), DAS(2.24 vs 1.99, P=0.033), triglyceride abnormality(23.8% vs 9.3%, P=0.021), HDL(56 vs 71, P=0.00009), HbA1c abnormality(26.5% vs 12.1%, P=0.019), γGTP(32 vs 21, P=0.00037), ALP (253 vs 230, P=0.0058), ALT (26.5 vs 20, P=0.029), and MTX dose(6 vs 8, P=0.066). Multivariate logistic regression showed that Ob group was significantly associated with HDL(OR=0.976, 95%CI 0.958 to 0.995), UCP1 gene mutation(OR=0.446, 95%CI 0.202 to 0.984), γGTP(OR=2.321, 95%CI 1.269 to 4.245), and MTX dose(OR=0.866, 0.784 to 0.957).

Conclusion: Obesity in patients with RA had significant positive correlation with γGTP, and negative correlation with HDL, UCP gene mutation and MTX dose.

Disclosure of Interests: None declared

DOI: 10.1136/annrheumdis-2021-eular.2962

AB0137

THE ASSOCIATION BETWEEN AUTOANTIBODY LEVELS AND THE OUTCOMES OF ANTI-TUMOUR NECROSIS FACTOR ALPHA TREATMENT IN RHEUMATOID ARTHRITIS - A RETROSPECTIVE COHORT STUDY WITH TWO YEARS FOLLOW-UP

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Background: In rheumatoid arthritis (RA), autoantibodies namely anticitrullinated protein antibodies (Anti-CCP) have prognostic value, independently predicting radiologic progression. However, the evidence is still controversial about how the autoantibody levels change over time and their role in treatments outcomes and in monitoring disease activity in RA.

Objectives: This study aimed to characterize the changes of autoantibodies levels (rheumatoid factor (RF) and Anti-CCP) over time and to explore the association between these autoantibodies and the outcomes of the first anti-tumour necrosis factor alfa (anti-TNF-α) therapy as first biologic agent in RA.

Methods: An observational retrospective cohort study was conducted with two years of follow-up. Patients with diagnosis of RA according to American College of Rheumatology (ACR) criteria and registered on Rheumatic Diseases Portuguese Register (Reuma.pt) who started their first anti-TNFα agent (as first biologic) between 2003 and 2018 were included. Patients with positive RA (>30 UI/mL) and/or positive Anti-CCP (>10 UI/mL) at their first visit were included. Demographic, clinical and laboratory data were obtained by consulting Reuma.pt. Disease Activity Score for 28 joints [DAS28(3v); DAS28(4v); DAS28(3v; C-Reactive Protein (CRP)), DAS28(4v; CRP), delta DAS28(4v)], Health Assessment Questionnaire (HAQ), delta HAQ, Anti-CCP and RF levels were assessed at baseline, 12 and 24 months. Continuous variables are presented with mean, standard deviation, median, quartile 1 and quartile 3. Categorical variables are presented with absolute and relative frequencies. To examine the differences between Anti-CCP and RF levels at baseline, 12 months and 24 months the Wilcoxon test for paired samples was performed. In order to correlate the Anti-CCP and RF levels with DAS28 variables, delta DAS28(4v), HAQ and delta HAQ at baseline, 12 months and 24 months, a correlation coefficient, Spearman's coefficient, was used.

Results: A total of 116 patients (mean age of 50.2±10.4 years old; 85.3% female) with RA were included with a median disease duration of 10.5 [5-18.5] years and a follow-up time of 8 [5-14] years. About 49% of patients were FR and Anti-CCP positivity, 38% only FR positivity and 13% only Anti-CCP positivity. At baseline, 64 (55.2%) patients had an erosive disease and 50 (43.1%) had extra-articular manifestations. Compared to the baseline (160[74.8-496]), FR levels decreased significantly at 12 months (121[49.1-321.8]) and 24 months (107[54.3-332]) with a p=0.017 and p=0.029, respectively. There were no differences in Anti-CCP levels over time. No correlation was found between FR/Anti-CCP levels and different DAS28 variables, DAS28(4v) delta, HAQ, and HAQ delta at 12 months and 24 months.

Conclusion: We found that in patients with RA treated with a first anti-TNF-α agent as first biologic, FR levels decreased at 12 months and 24 months follow-up. However, our study failed to demonstrate a correlation between autoantibodies levels and disease activity (DAS28 variables and delta DAS28(4v)), HAQ and delta HAQ. In fact, previous research demonstrated that there is an association between autoantibodies levels and disease activity in RA, nonetheless not being static and increasing with signs of inflammation at baseline. So, further research with large samples is needed to explore this correlation considering the adjustment for confounding inflammatory variables, such as number of swollen or tender joints and morning stiffness.

Disclosure of Interests: None declared

DOI: 10.1136/annrheumdis-2021-eular.3218

AB0138

A MOLECULAR SIGNATURE RESPONSE CLASSIFIER STRATIFIES SEROPOSITIVE RHEUMATOID ARTHRITIS PATIENTS BASED ON THEIR LIKELIHOOD OF INADEQUATE RESPONSE TO TNF INHIBITOR THERAPIES

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Background: There is an urgent need for precision medicine in targeted therapy selection for the treatment of rheumatoid arthritis (RA). TNF inhibitor (TNFi) therapies are the most prescribed targeted therapy for RA patients, yet the majority of patients fail to achieve a clinically meaningful response using this medication class. A blood-based molecular signature test evaluates RNA and clinical metrics to stratify RA patients based on their likelihood of having an inadequate response to TNFi therapies. Patients unlikely to respond to TNFi therapies can be directed to a different treatment option such as a JAK inhibitor, thus reducing the time needed to identify an effective therapy, improving confidence in and adherence to treatment, and increasing the patients' chance of reaching treat-to-target goals.