for patient and disease characteristics. According to DAS28 scores, disease activity, the cohort was divided into four groups: remission (Rem), low disease activity (LDA), moderate disease activity (MDA) and high disease activity (HDA). T2T, achieving a DAS28 score lower than 2.6 (Rem) or below 3.2 (LDA), is the main management strategy recommended by ACR and EULAR.

Results: From Jun 2014 to Jan 2018 a total of 24,731 RA patients from 486 centres in China participated in the study. The mean age was 49.28±16.08 (18 to 99) years and the median disease duration was 18.30 months. All patients performed self-assessment of DAS28, HAQ and morning stiffness time totally for 30 358 times. Proportion of patients in Rem, LDA, MDA and HDA was 18%, 13%, 45% and 24% respectively at baseline. Of which, 3492 patients performed repeated assessment for 11 251 times. Proportion of patients in Rem, LDA, MDA and HDA changed into 44%, 18%, 31% and 7% at the last assessment. The proportion of T2T at the last assessment was significantly higher than that of baseline significantly ($p<0.001$). According to the assessments, the rate of T2T from baseline to 3 months, 6 months, 9 months, 12 months and over 12 months were 31%, 47%, 56%, 58%, 61% and 62% (see figure 1). With the increase of the times of self-assessment, the T2T rate was significantly improved ($p<0.001$).

Abstract FRI0049 – Figure 1. The times of repeated self-assessment and the proportion of DAS28 stratification

Conclusions: Under repeated self-assessment of DAS28 using SSDM, RA patients can achieve better T2T result. Though empowering patients, SSDM can assist rheumatologist to rationally adjust treatment for RA patients.

Disclosure of Interest: None declared

DOI: 10.1136/annrheumdis-2018-eular.6412

FRI0050 TOCILIZUMAB ACHIEVES BETTER REPAIR OF FOCAL BONE EROSIONS THAN TUMOUR NECROSIS FACTOR INHIBITION IN RA PATIENTS – DATA FROM THE PROSPECTIVE REBONE STUDY ON EROSION REPAIR

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Background: Focal bone erosions are considered as markers for irreversible structural damage in patients with rheumatoid arthritis (RA). Several studies have suggested that limited repair of focal bone erosion can occur but no study has so far compared the effect of different biological disease modifying anti-rheumatic drugs (bDMARDs) on erosion repair.

Objectives: To compare focal bone erosion repair in RA patients treated with interleukin-6 receptor inhibitor (tocilizumab, TOC) with patients receiving tumour necrosis factor inhibitors (TNFi)

Methods: Prospective non-randomised observational study in 66 erosive RA patients with active disease (DAS28-ESR>3.2) and inadequate response to methotrexate receiving treatment with TOC monotherapy (n=33) or TNFi in combination with methotrexate (n=33) for 52 weeks. Patients received high-resolution peripheral quantitative computed tomography (HR-pQCT) of the MCP and wrist joints of the dominant hand at baseline and after 52 weeks. Volume (in mm³) of the largest ("sentinel") erosion in the MCP joints and in the wrist was assessed by two readers blinded for treatments and for the sequence of the images. Demographic (sex, age, body mass index, smoking, Charlson comorbidity index) and disease specific parameters (disease duration, ACPA and RF status) were assessed at baseline and activity scores (DAS28, SDAI, CDAI, HAQ) at baseline and every three months thereafter.

Results: Groups were balanced for age, sex, BMI and comorbidities as well as disease duration, disease activity, functional state, autoantibody status and bone damage at baseline. TOC (DAS28-ESR: baseline: 6.2±0.5; 52wk: 2.3±1.0) and TNFi (DAS28-ESR: baseline: 6.3±0.6; 52wk: 2.8±1.2) significantly reduced

disease activity to a similar extent, achieving DAS28 remission in 22/33 and 19/33 patients, respectively, after 52 weeks. Volumes of the sentinel erosions significantly decreased in the MCP joints of TOC patients (-1.0 ± 1.1 mm³), while remaining stable in TNFi treated patients (-0.05 ± 0.9 mm³) (TOC vs. TNFi: $p<0.001$). Similar effects were observed in the wrist (TOC: -2.9 ± 5.6 mm³; -0.08 ± 4.1 mm³) with significant differences between the two groups ($p=0.0017$). Erosion repair was particularly frequent in RA patients reaching fast remission within the first 3 months of treatment.

Erosion repair in the metacarpophalangeal joints of tocilizumab treated RA patients after 52 weeks

Y axis shows the volume of the sentinel erosion at baseline (black circles) and 52-weeks follow-up (red squares), x-axis the patient numbers (N=33)

Abstract FRI0050 – Figure 1. Erosion repair in the metacarpophalangeal joints of tocilizumab treated RA patients after 52 weeks

Y axis shows the volume of the sentinel erosion at baseline (black circles) and 52 weeks follow-up (red squares), x-axis the patient numbers (n=33)

Conclusions: The REBONE study shows that TOC has higher efficacy than TNFi to repair existing bone erosions in patients with RA. In contrast, the effects of TOC and TNFi on the inflammatory symptoms of RA are comparable. These data suggest that IL-6 is the central factor for the disturbed homeostasis between bone resorption and bone formation in the joints of RA patients.

Acknowledgements: The RE-BONE study was supported by Chugai Pharmaceutical Co., Ltd.

Disclosure of Interest: None declared

DOI: 10.1136/annrheumdis-2018-eular.3188

FRI0051 THE RISK OF ASEPTIC ARTHROPLASTY LOOSENING IN PATIENTS WITH RHEUMATOID ARTHRITIS

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Background: Total joint arthroplasty (TJA) of the hip (THA) and knee (TKA) are well-established operations for end stage degenerative or inflammatory joint disease, and has excellent outcomes. In rheumatoid arthritis (RA), it is performed in about 25% of the patients.¹ According to registry data septic complications after TJA are more frequent in RA than in osteoarthritis (OA), which is likely linked to the immunomodulatory therapy that RA patients receive.² However, aseptic prosthesis loosening (APL) is the most common complication and it remains unclear whether RA *per se* is also a risk factor for non-infectious complications, e.g. by the presence of higher levels of systemic inflammation.

Objectives: To compare the rates of APL between OA and RA patients, and to investigate the influence of disease activity levels on the risk for APL in RA patients.

Methods: We identified all patients who underwent THA and TKA between 2002 and 2015 at our academic centre, and linked them with an existing prospective RA database to identify documented RA patients. Age and sex-matched OA patients were used as controls. Our primary endpoint were radiographic signs of APL as previously established.^{3,4} Radiographs were evaluated by two independent observers blinded to the clinical diagnosis.

To explore the effects of systemic inflammation, we compared the time integrated level of disease activity by the Simplified Disease Activity Index (SDAI) during the year before an x-ray indicated loosening (for those with loosening) with the respective levels over one year before the last available x-ray (for those without loosening).

We used nonparametric tests and the chi-square test to compare rates of loosening between RA and OA patients and to compare AUC SDAI between patients with and without APL. Additionally, we calculated a Cox proportional hazard

regression to estimate the risk of loosening with increasing SDAI, stratified for TKA and THA.

Results: Data of 49 RA patients and 88 OA patients were available for analysis. The rate of APL was 36.7% in the RA and 13.6% in the OA group ($p=0.002$). This was explained by a much higher rate of APL in the TKA group (RA: 34.4%; OA: 6.5%; $p=0.001$), while the rates in the THA group were only numerically different (RA: 41.2%; OA: 30.8%; $p=0.528$).

In the RA group one year time integrated SDAI was significantly higher prior to loosening than in controls without loosening ($p=0.043$). In the Cox model, SDAI was also significantly related to time to APL with a Hazard ratio of 1.125 (95% CI 1.021–1.241) ($p=0.018$). Figure 1 depicts cox regression adjusted for AUC SDAI 3, 13 and 26 separately for TKA and THA.

Conclusions: RA is not only a risk factor for infectious complications after TJA, but also for APL after THA or TKA. This effect might—at least partly—be explained by systemic and local inflammation in RA patients as depicted by higher levels of disease activity in RA patients with APL. In the context of treatment-to-target of RA, the presence of an arthroplasty should be considered as an indication for even more stringent control of disease activity.

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Disclosure of Interest: None declared

DOI: 10.1136/annrheumdis-2018-eular.3747

FRIDAY, 15 JUNE 2018

Rheumatoid arthritis – comorbidity and clinical aspects

FRI0052 HIGHER URIC ACID IS ASSOCIATED WITH A LOWER DISEASE ACTIVITY IN RHEUMATOID ARTHRITIS PATIENTS

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Background: An association between serum uric acid (UA) and disease activity in rheumatoid arthritis (RA) patients has not been well studied.

Objectives: We describe RA patients with high and normal UA and study its association with RA activity.

Methods: Adult RA patients from The Kuwait Registry for Rheumatic Diseases (KRRD) who satisfied the ACR classification criteria for RA from four major hospitals were studied from February 2013 through April 2017. Patients with recorded

UA were identified. Visits with documented UA levels were included. UA of ≥ 357 $\mu\text{mol/L}$ (6 mg/dL) was considered high. Statistical correlations were made.

Results: A total of 564 RA patients with 2710 hospital visits and available UA were identified, 353 (62.6%) females. Mean age 50.8 ± 11.5 years and disease duration 10.5 ± 2.9 years. Mean DAS28 was 2.9 ± 1.2 and mean HAQ-DI 0.77 ± 0.67 . Rheumatoid factor (RF) was positive in 431/564 (76.4%) and anti-cyclic citrullinated peptide antibodies (ACPA) in 374/564 (66.3%).

Mean UA was 271 ± 78 $\mu\text{mol/L}$ with 12.7% readings being high. There were more males among patients with high UA than with normal UA (56% vs 36%, $p<0.01$) with no difference in age.

UA was negatively correlated with DAS28 ($p<0.001$), CDAI ($p<0.001$), SDAI ($p=0.038$), ESR ($p=0.034$), VAS pain ($p=0.049$), morning stiffness ($p=0.033$), patient's global assessment ($p=0.006$), physician's global assessment ($p=0.033$), number of tender joints ($p<0.001$) and number of swollen joints ($p<0.001$). There was no significant correlation with RF, ACPA or HAQ. The use of steroid, synthetic and biologic antirheumatic drugs, either individually or as a class, was similar among patients with high and normal UA.

Conclusions: RA patients with a higher UA had a lower disease activity despite using similar antirheumatic drugs. Reasons behind such association need to be further studied.

Disclosure of Interest: None declared

DOI: 10.1136/annrheumdis-2018-eular.5638

FRI0053 THE CHANGING FACE OF RHEUMATOID ARTHRITIS AT THE END OF THE 20TH CENTURY – A COMPARATIVE POSTMORTEM CLINICOPATHOLOGIC STUDY OF 237 RHEUMATOID ARTHRITIS PATIENTS WITH AA AMYLOIDOSIS AND SYSTEMIC VASCULITIS

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Objectives: Most clinicians accept that the course of rheumatoid arthritis (RA) has changed in the last decades. The aim of this study was to verify this clinical impression characterised by systemic vasculitis (SV) and AA amyloidosis (AAa).

Methods: At the National Institute of Rheumatology 12 138 patients died between 1969 and 2000; among them 237 with RA, who were autopsied.

RA was complicated in 53 (22.36%) by SV, and in 49 (20.68%) of 237 patients by AAa. RA was confirmed clinically according to the criteria of the American College of Rheumatology.¹ The presence of SV and of AAa was determined histologically. The "severity" of vasculitis and the extent of amyloid A deposition/patient was evaluated by semi-quantitative visual estimation on a 0 to 3 plus scale.² The average prevalence of SV and AAa was calculated in percentage of the number of RA patients, who died during four periods of time (8–8–8–8 years) covering 32 years (between 1969 and 2000).

Results: During these four periods of time (from 1969 to 2000) the average age of RA patients with SV continuously increased from 57.00 to 68.00 years, and with AAa from 56.71 to 64.08 years. The prevalence of SV and AAa and the proportion of severe cases in % of RA patients are demonstrated on figure 1.

Conclusions: According to our data RA became more aggressive with higher prevalence of SV and AAa at the end of the last century.