Pyd levels ($p=0.024$). There was a significant positive correlation between serum Pyd levels and joint erosion score ($r=0.285$, $p=0.049$). The serum Pyd levels had no demonstrable association with disease activity or functional capacity. Neither steroid nor biologic therapy influenced the levels of serum Pyd.

Conclusions: RA patients had significantly higher levels of serum Pyd compared to healthy controls. The serum Pyd levels had significant correlation with radiographic joint erosions which reflected disease damage.

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Acknowledgements: The authors would like to thank the Research Committee of UKMMC for funding this research.

Disclosure of Interest: None declared

DOI: 10.1136/annrheumdis-2018-eular.2378

AB0302 THE ROLE OF THE BIOMARKER 14-3-3 ETA IN RHEUMATOID ARTHRITIS: A REVIEW

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Background: Biomarkers are of much interest in rheumatoid arthritis (RA). Valid, reliable and convenient biomarkers, to detect early disease, predict severity and monitor treatment response are essential to achieving optimal outcomes. Several biomarkers have been suggested but are largely not validated. Validated measures of rheumatoid factor (RF), citrullination antibodies (ACPA), C-reactive protein (CRP) and erythrocyte sedimentation rate (ESR) do not provide a complete picture. 14-3-3 η , a protein from a family of highly conserved regulatory molecules, has promising data as a novel RA biomarker and is the focus of this review.

Objectives: This review aimed to identify the literature characterising 14-3-3 η and its utility in RA.

Methods: Search terms 14-3-3 η , biomarker and rheumatoid arthritis were used in Pubmed, Web of Science and Embase databases and reference lists of relevant papers were scanned. Inclusion criteria were confirmed RA, 14-3-3 η and English language.

Results: Seven key papers were identified on 14-3-3 η proteins¹⁻⁶ and one on 14-3-3 η antibodies (14-3-3 η -Ab)⁷. **Detecting RA:** 14-3-3 η was elevated in patients with RA compared to healthy controls^{2,4} and patients with other diseases ($p<0.001$)⁴. Being positive for 14-3-3 η (>0.19 ng/mL) showed sensitivity and specificity of 63.3% and 92.6%⁴ to detect RA, increasing to 91.7% and 99.6%, respectively when an ROC-determined optimal cut-off of 0.879 ng/mL was used². When combined with current markers RF $\pm$ ACPA the detection capacity for early RA increased to 78% and for established RA to 96%, compared to 72% and 88%⁴, respectively for RF $\pm$ ACPA alone. Including the 14-3-3 η -Ab further increased detection⁷. The 14-3-3 η -Ab appeared at higher levels in early, treatment naïve RA, while no difference was seen in established RA compared to controls⁷. The 14-3-3 η -Ab was not associated with inflammatory markers ESR or CRP⁷. Although higher levels of the 14-3-3 η protein were detected in early RA ($p<0.05$), rate of detection was higher in established RA². **Predicting disease severity:** Baseline 14-3-3 η status was associated with increased disease severity^{1,2,3,4,5}, higher median DAS (6.3 vs 5.7, $p=0.026$) and HAQ scores (1.9 vs 1.0, $p=0.001$)⁴. Significant associations with baseline DAS28-ESR, CDAI and SDAI ($p<0.045$ – $p<0.001$) were also reported³. Physical symptoms are closely related to 14-3-3 η levels²; patients achieving DAS28-ESR-defined remission had significantly lower levels than non-remitters³. Radiographic progression was significantly associated with higher 14-3-3 η ^{1,5}, OR=6.2 (95%CI 1.3 to 30.2) in early RA and 2.5 (95%CI 1.0 to 1.4) in established RA⁵. Conflicting results on associations with existing markers ESR, CRP, RF, and ACPA have been reported^{1,2,3,4,5,6}. **Treatment response:** 14-3-3 η levels are dynamic with changing disease activity^{1,3}. Also, pre-treatment 14-3-3 η levels were an independent predictor of response to some therapies³.

Conclusions: 14-3-3 η protein and Ab are promising biomarkers in RA diagnosis, disease severity and response to treatment. Future research characterising the protein in RA and its relationship with validated biomarkers and composite measures, and expanding on the 14-3-3 η -Ab would be well directed.

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Disclosure of Interest: None declared

DOI: 10.1136/annrheumdis-2018-eular.6614

AB0303 ULTRASOUND ASPECT OF POSTERIOR TIBIAL TENDON IN RHEUMATOID ARTHRITIS

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Background: Posterior tibial tendon involvement is common in rheumatoid arthritis. Ultrasound has an important place in the examination of this tendon.

Objectives: Evaluate the prevalence of ultrasound signs of posterior tibial tendon involvement in rheumatoid arthritis.

Methods: This is a cross-sectional study that included fourteen consecutive patients (100% female, mean age 55.3 years) with rheumatoid arthritis (median duration of progression of 13.5 years, mean specialised care of 2.1 years). A grey and Doppler ultrasound study was performed on affected feet, looking for effusion, thickening or corporal thinning, hypoechoic aspect, fissures, and Doppler activity in the posterior tibial tendon.

Results: 28 feet were studied with ultrasound evaluation of the posterior tibial tendon. Figure 1 illustrates the prevalence of the pathological aspects of the posterior tibial found on ultrasound examination.

Abstract AB0303 – Figure 1. Ultrasound aspects of the posterior tibial tendon in patients RA

Conclusions: This study illustrates the different pathological aspects of the posterior tibial tendon. It highlights the high prevalence of this tendinopathy in the rheumatoid foot. Ultrasound allows accurate assessment of this tendon in RA patients.

A large-scale study compared with a control group is necessary to better interpret and complete these preliminary results.

Disclosure of Interest: None declared

DOI: 10.1136/annrheumdis-2018-eular.5925

AB0304 THE DELAY IN THE MANAGEMENT OF RHEUMATOID ARTHRITIS BY A RHEUMATOLOGIST IS ASSOCIATED WITH AN ALTERATION OF THE FUNCTION OF THE FOOT

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Background: Impairment of foot function is known in rheumatoid arthritis.

Objectives: Evaluate the functional status of the foot in patients with RA and look for factors associated with impaired foot function.

Methods: This is a cross-sectional study that consecutively included 14 patients (100% female, mean age 55.3 years) with RA (median duration of evolution of 13.5 years, mean specialised care of 2.1 years). The functional status of RA was assessed by the HAQ (Health Assessment Questionnaire). RA activity was evaluated by DAS28 and DAS44. The FFI score (Foot Function Index) was used to determine the functional status of the foot. A correlation analysis was made between the FFI score and DAS28, DAS44 and HAQ as well as with the duration of progression of the RA and the delay of specialised management.

Results: The median score of the HAQ (Health Assessment Questionnaire) was 1.6. The median score for the Foot Function Index (FFI) was 53.6. The medians of DAS 28 and DAS 44 were 5.3 and 3.8. The median of the different FFI score items was:

Pain Sub-scale: How severe is your foot pain ?

Q1: Foot pain at its worst ? 7 (6; 9,25), Q2: Foot pain in morning ? 5,5 (2; 7), Q3: Pain walking barefoot ? 4 (1,75; 8,15), Q4: Pain standing barefoot ? 5 (3,25; 8,25), Q5: Pain walking with shoes ? 4 (1,75; 5,75), Q6: Pain standing with shoes ? 4,5 (3; 5,5), Q7: Pain walking with orthotics ? 3 (3; 3), Q8: Pain standing with orthotics ? 3 (3; 3), Q9: Foot pain at end of day ? 5 (2,75; 7)

Disability sub-scale: How much difficulty did you have ?

Q10: Difficulty walking in house ? 2 (0; 3,25), Q11: Difficulty walking outside ? 5,5 (3; 8), Q12: Difficulty walking 4 blocks ? 5 (4; 9), Q13: Difficulty climbing stairs ? 6,5 (4; 8,25), Q14: Difficulty descending stairs ? 6 (3,5; 8,25), Q15: Difficulty standing tip toe ? 8,5 (5,25; 10), Q16: Difficulty getting up from chair ? 5 (1,5; 8), Q17: Difficulty climbing curbs ? 4,5 (2; 7,25), Q18: Difficulty walking fast ? 8,5 (4,75; 10)

Activity Limitation sub-scale: How much of the time do you ?

Q19: Stay inside all day because of feet ? 7 (2; 8,25), Q20: Stay in bed all day because of feet ? 5 (2; 3,25), Q21: Limit activities because of feet ? 5,5 (1; 8), Q22: Use assistive device (cane, walker, crutches, etc) indoors ? 0 (0; 3,25), Q23: Use assistiw device (cane, walker, crutches, etc) outdoors ? 0 (0; 0,75).

No correlation was found between the FFI and the HAQ. DAS 28 and DAS44 did not correlate with the FFI either.

Alteration of foot function as indicated by a high FFI score was associated with a delay in specialist management by a rheumatologist ($r=0.535$, $p=0.04$).

Conclusions: This study provides insight into the impact of RA on foot function. The HAQ, DAS28 and DAS44 would not reflect the functional deterioration of the foot in RA. In addition, an alteration of foot function would be associated with a delay in specialist management by a Rheumatologist.

A large-scale study is underway to validate and complete these preliminary results.

Disclosure of Interest: None declared

DOI: 10.1136/annrheumdis-2018-eular.6774

AB0305

REMAINING FOOT SYNOVITIS MAY PREDICT RELAPSE IN RHEUMATOID ARTHRITIS PATIENTS IN DAS28 REMISSION (DAS28-CRP<2.3)

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Background: DAS28 (Disease Activity Score based on 28 joints) is widely used to determine remission in rheumatoid arthritis (RA). The problems with DAS28 due to omission of the lower extremity joints have long been discussed. There are reports demonstrating that some patients meeting DAS28 remission criteria still have synovitis in their feet.¹ It is suggested that patients with remaining foot synovitis can experience up to a 2-fold increase in relapse rates.² Evidence supporting this hypothesis is still scarce.

Objectives: We hypothesised that RA patients in remission according to the DAS28 remission criterion with remaining foot synovitis are less likely to stay in remission. We aimed to test this hypothesis among Japanese patients with RA.

Methods: In 2015, 15,071 RA patients were registered in a large nationwide database in Japan (NinJa). Among those patients, those who were in remission based on DAS28-CRP were included. We used DAS28-CRP<2.3 as the remission criteria. The study population was then divided into groups with or without tender/swollen joints in the feet. These patients were followed for one year and the remission rate was then calculated for each group. Comparison was performed with Chi-square test.

Results: We included 706 RA patients in remission based on DAS28-CRP with foot synovitis in 2015 and 5182 without foot synovitis. Among patients with foot

synovitis in 2015, 225 (31.9%) were not in remission in 2016 while among those without foot synovitis, 985 (19.0%) were not in remission. ($X^2=62.953$, $df=1$, $p=2.117 \times 10^{-15}$)

Conclusions: In our study, RA patients in remission according to the DAS28 remission criterion with remaining foot synovitis had more relapses than those without it. Remission defined by DAS28-CRP does not take remaining foot synovitis into account. But a thorough foot examination may still be useful in RA patients with DAS28-CRP remission as they may be more at risk for relapse.

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Disclosure of Interest: None declared

DOI: 10.1136/annrheumdis-2018-eular.3274

AB0306

PREDICTORS OF MEDICATION ADHERENCE IN SERBIAN PATIENTS WITH RHEUMATOID ARTHRITIS

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Background: Adherence to pharmacologic therapy is a significant problem in patients with rheumatoid arthritis (RA). Nonadherence in patients with RA using disease modifying antirheumatic drugs (DMARD) may result in unnecessarily high levels of disease activity and function loss.

Objectives: The aim of this study was to evaluate the predictive ability of demographic (age, sex, marital status, employment status, education) and clinical factors (duration of disease, patients assessment of pain, concomitant use of biological therapy and presence of comorbidity) for medication adherence.

Methods: In the period between March 1 and May 30, 2017, 195 consecutive RA patients who were treated in one of three randomly chosen Serbian clinics were enrolled in cross-sectional study. The inclusion criteria were: age ≥ 18 years, current diagnosis of RA per the 1987. ACR Diagnostic Criteria, completing the questionnaire self-reported medication adherence and written informed consent. Demographic and clinical characteristics of adherent and non-adherent participants were compared using independent samples t-tests for continuous variables and Chi square analyses for categorical variables. The associations between investigated demographic and clinical characteristics of the patients and non-adherence to DMARDs were assessed applying logistic regression analysis.

Results: Study population was predominantly female (88%), and the average current age was 57.4 ± 11.2 years. The median duration of RA was 9 years. Only one quarter (25%) of participants were employed, those unemployed 26% or retired (48%) comprised the majority of the sample. In terms of education approximately 60% participants finished secondary school. The participants in this study were primarily married (77%). The majority of the patients were prescribed methotrexate (77%), other common DMARDs prescribed for these patients included hydroxychloroquine (13%) and prednisone (18%). Approximately 20% of patients were receiving a biological drug. Half of the patients estimated that they had severe pain on visual analogue scale (VAS >5). The majority of the RA patients had some comorbidity (80%). The most of these RA patients (89.7%) were considered adherent to medication prescriptions and the remainder (11.3%) were non-adherent. There were no significant difference in clinical or demographic factors between groups except for employment and concomitant use of biological therapy. One third (33.3%) of the non-adherent participants were using biologic drug, while only 19% of the adherent patients were using biologics. There were significantly more employees (29%) among the non-adherent patients. According to the results of univariate regression analysis the following factors are significantly associated with non-adherence to DMARDs: employment (OR=2.277; $p=0.049$), and concomitant use of biological therapy (OR=2.312; $p=0.002$). Finally, in the multivariate regression model concomitant use of biological therapy (OR=2.067; $p=0.017$) remained statistically significant and was identified as independent predictor of non-adherence to DMARDs.

Conclusions: The results of our study have shown that about 10% of RA patients met the criteria for non-adherence to DMARDs. Concomitant use biologics and employment are independent predictors of non-adherent.

Disclosure of Interest: None declared

DOI: 10.1136/annrheumdis-2018-eular.4273