Conclusion: In early arthritis patients, during 5 years targeted to treat drug free DAS-remission, disease flares with loss of DAS-remission were common. Although the majority of patients who flared were still in LDA, most reported more pain, morning stiffness, increased disease activity and a diminished global health. On average, deterioration in HAQ only exceeded the minimum clinically important difference (delta HAQ >0.22) in case of a ≥0.6 increase in DAS, independent of the previous DAS. Depending on the definition of flare, up to 45% of patients lost DAS LDA, and in this group the functional deterioration significantly more often exceeded the MCID as compared to the patients that flared but were still in LDA. More research is needed to find out which patients are most at risk for clinically relevant flares, and to evaluate the impact of flares in patients with remission on long term outcomes.

Table 1. Odds Ratios and 95% confidence intervals for > 20 mm increase in PROs on 100mm visual analogue scales

<table>
<thead>
<tr>
<th>Flare A</th>
<th>Flare B (minor)</th>
<th>Flare C (major)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prevalence OR</td>
<td>Prevalence OR</td>
<td>Prevalence OR</td>
</tr>
<tr>
<td>≥20 mm² (95% CI)</td>
<td>≥20 mm² (95% CI)</td>
<td>≥20 mm² (95% CI)</td>
</tr>
<tr>
<td>Global health</td>
<td>62%</td>
<td>2.1 (1.5; 2.8)</td>
</tr>
<tr>
<td>Disease activity</td>
<td>62%</td>
<td>2.5 (1.7; 3.8)</td>
</tr>
<tr>
<td>Pain</td>
<td>87%</td>
<td>2.0 (1.3; 3.1)</td>
</tr>
<tr>
<td>Morning stiffness</td>
<td>84%</td>
<td>1.7 (1.1; 2.6)</td>
</tr>
</tbody>
</table>

*The prevalence of ≥20 mm deterioration in VAS PROs during a visit with a flare.

Acknowledgements: We would like to thank all patients for their contribution as well as the rheumatologists who participated in the IMPROVED-study group. We would also like to thank all other rheumatologists and trainee rheumatologists who enrolled patients in these studies, and all research nurses for their contributions.

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POSO480

ASSOCIATION OF NEUTROPHIL LYMPHOCYTE AND PLATELET LYMPHOCYTE RATIOS WITH JOINT INFLAMMATION IN RHEUMATOID ARTHRITIS

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Background: Some patients with rheumatoid arthritis (RA) have high disease activity scores (DAS) and low synovial inflammation, and others have high synovial inflammation and low DAS (subclinical synovitis)[1]. It would be clinically useful to identify blood biomarkers of synovial inflammation. Neutrophil-lymphocyte (NLR) and platelet-lymphocyte ratios (PLR) have been reported to distinguish RA patients with moderate/high DAS28 scores from low DAS28 [2]. However, it is not known if these inexpensive, accessible tests are associated with inflammation in synovial tissue at the histological level.

Objectives: The objective of this study was to evaluate the relationship of pre-operative NLR and PLR with synovial inflammation of the operative joint in RA patients undergoing arthroplasty.

Methods: 230 patients meeting ACR/EULAR 1987 and/or 2010 criteria were recruited prior to elective total hip, knee, shoulder, and elbow replacement. Demographics, RA characteristics, medications, disease activity, and routine tests including complete blood tests (CBC) were collected pre-operatively. Hematocrit and eosin (H&E) stains were prepared from the synovium of the operative joint and systematically scored by a pathologist as described previously [3]. Synovial lymphocytic inflammation was graded as none, mild, moderate, or band-like. Linear regression was performed to distinguish differences in the NLR, PLR, and CRP in patients with synovial lymphocytic inflammation (SLI).

Table 1. Results from linear regressions evaluating the association of NLR, PLR, and CRP with synovial lymphocytic inflammation.

<table>
<thead>
<tr>
<th>Linear regression Results</th>
<th>NLR</th>
<th>PLR</th>
<th>CRP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Synovial Lymphocytic Inflammation Coef (95% CI)</td>
<td>Coef (95% CI)</td>
<td>Coef (95% CI)</td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>Reference</td>
<td>Reference</td>
<td>Reference</td>
</tr>
<tr>
<td>Mid</td>
<td>0.31 (-0.51, 1.13)</td>
<td>26.54 (-8.83, 63.90)</td>
<td>-1.00 (-2.37, 0.36)</td>
</tr>
<tr>
<td>Moderate</td>
<td>0.73 (-1.18, 1.64)</td>
<td>28.66 (-10.22, 76.53)</td>
<td>0.46 (-1.09, 2.01)</td>
</tr>
<tr>
<td>Marked</td>
<td>0.21 (-0.80, 1.22)</td>
<td>24.62 (-22.80, 72.05)</td>
<td>0.81 (-0.87, 2.49)</td>
</tr>
<tr>
<td>Band-like</td>
<td>1.92 (0.81, 3.02)</td>
<td>80.42 (31.46, 129.38)</td>
<td>2.32 (0.49, 4.16)</td>
</tr>
</tbody>
</table>

Odds Ratio OR = Odds ratio, Coefficient Coef = Coefficient, NLR= neutrophil lymphocyte, PLR= platelet lymphocyte ratio, CRP=C-reactive protein

Conclusion: NLR, PLR and CRP are associated with high synovial lymphocytic inflammation of the operative joint. This suggests that these inexpensive, routinely performed blood tests may be a useful blood biomarker of synovial inflammation.

REFERENCES:

Disclosure of Interests: Diyu Pearce-Fisher: None declared, Dana Orange Consultant of: Astra Zeneca/MedImmune and Pfizer, Bella Mehta Consultant of: Novartis, Deanna Jannat-Khah: None declared, Susan Goodman Consultant of: UCB, Grant/research support from: Novartis, Horizon Pharmaceuticals

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POSO481

DOES OLDER REALLY MEAN WISER?

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Background: One of the main challenges in Rheumatoid arthritis (RA) is to maintain remission or low disease activity by adhering to the prescribed treatments. However, it is believed that adherence to long term treatments is inadequate in chronic diseases. Does this apply to older people too?

Objectives: To assess treatment adherence among an elderly RA population and to study determining factors of non-adherence.

Methods: A cross-sectional study over a period of 4 months was conducted in a rheumatology clinic (September 2020-December 2020). Consenting elderly over the age of 65 presenting with RA were included. Exclusion criteria included associated connective tissue diseases and troubles communicating. During clinical visits, sociodemographic information, clinical, radiological and therapeutic data were collected. Treatment adherence was assessed by the 6-item compliance questionnaire of rheumatology (CQF-6). Patients were also asked about the degree of satisfaction vis-à-vis the therapeutic effect detected. Univariate and multivariate analysis were conducted using the statistical tool SPSS 20.

Results: Forty patients consented to join the study. 82.5% of them were women. The median age of was 66.5 years old with a minimum of 65 and a maximum of 83. Comorbidities were noted in 55% of the patients. 75% of the patients had health insurance. The mean pain score was 5 out of 10 on a visual analog scale (VAS). The mean DAS 28 was 4.65±1.77 with 72.5%...
of the patients having an active disease. Deformities were reported in 60% of the cases and bone destruction on radiographs in 87.2% of the cases. Methotrexate was the most prescribed treatment in 95% of the cases and biologics in 12.5% of the cases. The median number of pills taken (on the day of MTX) was 12.5 (min=6; max=23). Up to 35.5% of the patients were not satisfied with treatment results. 90% of the patients took their medication because they had fewer problems afterwards. 72.5% of them did not dare to miss their RA treatment. 95% of them had their pills stored in the same place to not forget them, 97.5% took their medication because they had confidence in their rheumatologist and 92.5% of them hung on to what the doctor told them. The overall results of the CQR-5 revealed that 72.5% of the patients were adherent to their RA medication and 27.5% of them were non-adherent. The study of factors associated to non-adherence showed that being younger (p<0.01), not having a health insurance (p=0.014), having comorbidities (0.03), and not being satisfied with treatments’ results (p=0.014) were associated to non-adherence. Multivariate analysis showed that risk factors associated to non-adherence were elevated pain scores (odds ratio=4.11, p=0.042), not having health insurance (odd ratio=7.54, p=0.006) and having to take many pills at once (odds ratio=4.48, p=0.034). Being older was a protector factor of non-adherence (odds ratio=0.81, p=0.034).

Conclusion: Adherence among RA elderly patients is optimal and they have good trust in their medication and confidence in their rheumatologist. Older seems wiser when it comes to treating taking behaviors in RA.

REFERENCES:
[1] Hughes LD, Done J, Young A, A 5 item version of the Compliance Ques-
tionnaire for Rheumatology (CQRS) successfully identifies low adherence to DMARDs. BMC Musculoskelet Disord 2013; 14: 286.

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POS0482 WOOD SMOKE EXPOSURE IS ASSOCIATED WITH HIGHER ANTI-CCP ANTIBODY TITERS IN HISPANIC PATIENTS WITH RHEUMATOID ARTHRITIS

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Background: Wood smoke exposure is a risk factor for the development of chronic obstructive pulmonary disease (COPD), lung cancer and cardiovascular disease and it has also been linked to higher anti-CCP antibodies in patients with rheumatoid arthritis (RA) and COPD (1).

Objectives: The objective of the present study is to report the correlation between anti-CCP, IgG, IgM and IgA rheumatoid factor (RF) to wood smoke exposure in patients with RA. Additionally, evaluate the impact of disease activity, biomass exposure, and disease duration on anti-CCP antibody levels.

Methods: A cross-sectional, observational study was designed based on a cohort of Hispanic RA patients. All fulfilled the 2010 ACR/EULAR classification criteria for RA. Biomass smoke exposure was expressed using the biomass exposure index (BEI) calculated from the mean of exposed hours per day multiplied by the number of years exposed. Subjects were divided into two groups: those exposed to wood smoke with BEI ≥1 and subjects not exposed to wood smoke. They were matched by age, gender, and comorbidities. Anti-CCP antibodies and RF were measured by ELISA with cutoff points of <5 U/ mL and <20 U/mL respectively.

Results: A total of 318 subjects were included, 159 (50%) of them had a history of exposure to wood smoke. Anti-CCP antibody positivity was present in 102 (64.2%) with a median titer of 97.1 U/mL (1.7-198) in the RA exposed group, and in 89 (56%) with a median titer of 8.5 U/mL (1.1-145) in the RA non-exposed group. A significant difference was found in anti-CCP antibody titters between groups (p=0.003), (Table 1). Spearman’s rho showed a small but statistically significant correlation between BEI and anti-CCP antibody titters (r=0.170, p=0.002). Biomass exposure was independently related to higher anti-CCP antibody titters (B=35.4, p<0.001).

Conclusion: RA patients who were exposed to wood smoke had higher titers of anti-CCP antibodies than non-exposed RA patients. Furthermore, biomass exposure was shown to be independently related to higher titers of anti-CCP antibodies.

Table 1. Comparison of demographic, seropositivity and clinical charac-
teristic between patients with RA exposed and matched non-exposed RA patients.

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>RA exposed (n=159)</th>
<th>RA not exposed (n=159)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age years, ± SD</td>
<td>56.7 ± 8.7</td>
<td>55.4 ± 8.1</td>
<td>NS</td>
</tr>
<tr>
<td>Female, n (%)</td>
<td>148 (93.1)</td>
<td>148 (93.1)</td>
<td>NS</td>
</tr>
<tr>
<td>BEI years, median (p25-p75)</td>
<td>35 (15-90)</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Disease duration years, median (p25-p75)</td>
<td>9 (3.5-15.1)</td>
<td>6.8 (2.8-14.6)</td>
<td></td>
</tr>
<tr>
<td>DAS28-CRP median (p25-p75)</td>
<td>3.37 (2.11-4.4)</td>
<td>3.17 (2.09-4.2)</td>
<td></td>
</tr>
<tr>
<td>Erythrocyte sedimentation, n (%)</td>
<td>50 (31.4)</td>
<td>43 (27)</td>
<td></td>
</tr>
<tr>
<td>Hypertension, n (%)</td>
<td>55 (34.6)</td>
<td>48 (30.2)</td>
<td></td>
</tr>
<tr>
<td>Diabetes Mellitus, n (%)</td>
<td>24 (15.1)</td>
<td>23 (14.5)</td>
<td></td>
</tr>
<tr>
<td>Active smoking, n (%)</td>
<td>8 (5)</td>
<td>8 (5)</td>
<td></td>
</tr>
</tbody>
</table>

Sero positivity

- Anti-CCP antibody positivity, n (%) | 136 (85.5) | 126 (79.2) | 0.141 |
- Anti-CCP antibody titers, median (p25-p75) | 97.1 (1.7-198) | 85.1 (1.1-114.5) | 0.003 |
- IgG RF positivity, n (%) | 31 (19.5) | 24 (15.1) | 0.299 |
- IgG RF titers, median (p25-p75) | 5 (2.13) | 4.9 (2.13) | 0.523 |
- IgM RF positivity, n (%) | 136 (85.1) | 126 (79.2) | 0.141 |
- IgM RF titers, median (p25-p75) | 198 (41-200) | 177 (28-200) | 0.067 |
- IgA RF positivity, n (%) | 98 (61.6) | 92 (57.9) | 0.493 |
- IgA RF titers, median (p25-p75) | 52.6 (9.3-190) | 33.6 (159) | 0.060 |

REFERENCES:

Disclosure of Interests: None declared

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POS0483 SUBCLINICAL ATHEROSCLEROSIS IN THE FIRST FIVE YEARS OF RHEUMATOID ARTHRITIS DIAGNOSIS

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Background: Patients with rheumatoid arthritis (RA) have a higher risk of developing a cardiovascular (CV) event than the general population, due to an accelerated process of atherosclerosis (1), which has been documented to begin in early stages of the disease and is directly associated with systemic inflammation (2).

Objectives: The aim of this study was to compare the prevalence of subclinical atherosclerosis detected by carotid ultrasound (US) in patients with RA in the first five years of diagnosis and healthy controls.

Methods: This was a cross-sectional, observational, and comparative study. A total of 53 patients aged 40-75 years old, with RA diagnosis, in the previous five years, according to the 2010 ACR/EULAR classification criteria, and 53 controls matched by age (±5 years), gender and comorbidities were included in this study. Subjects with a previous CV event, such as myocardial infarction, cerebrovascular event and peripheral arterial disease, another connective tissue disease and pregnant women were excluded from this study. A high-resolution B-mode carotid US was performed in all study subjects. Subclinical atherosclerosis was evaluated as the presence of carotid plaque (CP) or an increased carotid intima media thickness (cIMT). CP was defined as a cIMT ≥1.2mm or a focal narrowing ≥0.5mm of the surrounding lumen, and an increased cIMT was defined as a value ≥0.8mm. Distribution was evaluated with the Kolmogorov-Smirnov test. Comparisons were done with t-test and Fisher’s exact test for qualitative variables, and Student’s t test and Mann-Whitney’s U test for quantitative variables. A p-value <0.05 was consid-
ered statistically significant.

Results: Comparisons of demographic characteristics showed no differences between the RA group and the control group (Table 1). When comparing carotid US findings there was a difference in the presence of CP, being more prevalent in RA patients (26.4% vs 11.3%, p=0.047), in the presence of an increased cIMT, being more prevalent in RA patients (34.0% vs 3.8%, p=0.002), and in the cIMT as a quantitative variable, being higher in RA patients (0.70mm vs 0.59mm, p<0.001 in the right carotid artery, and 0.75mm vs