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 complete 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 (odds 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 treatment taking behaviors in RA.

REFERENCES:

- [1] Hughes LD, Done J, Young A. A 5 item version of the Compliance Questionnaire for Rheumatology (CQR5) successfully identifies low adherence to DMARDs. *BMC Musculoskelet Disord* 2013; 14: 286.

Disclosure of Interests: None declared

DOI: 10.1136/annrheumdis-2021-eular.2738

POS0482

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

A. B. Rodriguez-Romero¹, D. Á. Galarza-Delgado¹, J. R. Azpiri-López², I.

J. Colunga-Pedraza¹, N. Guajardo-Jauregui¹, S. Lugo-Perez², A. Cárdenas¹.

¹Hospital Universitario "Dr. José Eleuterio González"; Universidad Autónoma de Nuevo León, Rheumatology Service, Monterrey, Mexico; ²Hospital Universitario "Dr. José Eleuterio González"; Universidad Autónoma de Nuevo León, Cardiology Service, Monterrey, Mexico

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 titers between groups ($p=0.003$). (Table 1). Spearman's rho showed a small but statistically significant correlation between BEI and anti-CCP antibody titers ($\rho=0.170$, $p=0.002$). Biomass exposure was independently related to higher anti-CCP antibody titers ($B=35.4$, $p<0.001$).

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 characteristic between patients with RA exposed and matched non-exposed RA patients.

Characteristics	RA exposed (n=159)	RA not exposed (n=159)	p
Age years, $\pm$ SD	56.7 $\pm$ 8.7	55.4 $\pm$ 8.1	NS
Female, n (%)	148 (93.1)	148 (93.1)	NS
BEI years, median (p25-p75)	35 (15-90)	0	
Disease duration years, median (p25-p75)	9 (3.5-15.1)	6.8 (2.8-14.6)	NS
DAS 28-CRP, median (p25-p75)	3.37 (2.11-4.4)	3.17 (2.09-4.2)	NS
Dyslipidemia, n (%)	50 (31.4)	43 (27)	NS
Hypertension, n (%)	55 (34.6)	48 (30.2)	NS
Diabetes Mellitus, n (%)	24 (15.1)	23 (14.5)	NS
Active smoking, n (%)	8 (5)	8 (5)	NS
Seropositivity			
Anti-CCP antibody positivity, n (%)	102 (64.2)	89 (56)	0.137
Anti-CCP antibody titers, median (p25-p75)	97.1 (1.7-198)	8.5 (1.1-145)	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)	0.529
IgM RF positivity, n (%)	136 (85.5)	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)	52.9 (9.3-193)	33(5-159)	0.060

NS, non-significant; RA, rheumatoid arthritis; BMI, body mass index; BEI, biomass exposure index; DAS28-CRP, disease activity score using 28 joints-C-reactive protein; anti-CCP, anti-cyclic citrullinated peptide; RF, rheumatoid factor

REFERENCES:

- [1] Fullerton DG, Bruce N, Gordon SB. Indoor air pollution from biomass fuel smoke is a major health concern in the developing world. *Trans R Soc Trop Med Hyg*. 2008;102(9):843-51.

Disclosure of Interests: None declared

DOI: 10.1136/annrheumdis-2021-eular.2778

POS0483

SUBCLINICAL ATHEROSCLEROSIS IN THE FIRST FIVE YEARS OF RHEUMATOID ARTHRITIS DIAGNOSIS

N. Guajardo-Jauregui¹, I. J. Colunga-Pedraza¹, J. R. Azpiri-López², D.

Á. Galarza-Delgado¹, A. B. Rodriguez-Romero¹, S. Lugo-Perez², A. Cárdenas¹,

A. C. Garza Acosta³. ¹Hospital Universitario "Dr. José Eleuterio González"; Universidad Autónoma de Nuevo León, Rheumatology, Monterrey, Mexico;

²Hospital Universitario "Dr. José Eleuterio González"; Universidad Autónoma de Nuevo León, Cardiology, Monterrey, Mexico; ³Hospital Universitario "Dr.

José Eleuterio González"; Universidad Autónoma de Nuevo León, Radiology, Monterrey, Mexico

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 ≥ 1.2 mm or a focal narrowing ≥ 0.5 mm of the surrounding lumen, and an increased cIMT was defined as a value ≥ 0.8 mm. Distribution was evaluated with the Kolmogorov-Smirnov test. Comparisons were done with χ^2 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 considered 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%, $p<0.001$), 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

Table 1. Demographic and clinical characteristics.

	RA (n=53)	Controls (n=53)	p
Age years, mean ± SD	54.48 ± 9.09	54.86 ± 6.83	NS
Women, n (%)	49 (92.5)	49 (92.5)	NS
T2DM, n (%)	8 (15.1)	7 (13.2)	NS
HTN, n (%)	17 (32.1)	17 (32.1)	NS
Dyslipidemia, n (%)	19 (35.8)	19 (35.8)	NS
Obesity, n (%)	21 (39.6)	20 (37.7)	NS
Active smoking, n (%)	3 (5.7)	4 (7.5)	NS
BMI kg/m ² , median (p25-p75)	28.78 (25.92-33.21)	27.59 (24.55-33.34)	NS
Disease duration, mean ± SD	2.48 ± 1.31	-	-
DAS28-CRP, median (p25-p75)	3.21 (1.89-4.12)	-	-
MTX, n (%)	39 (73.6)	-	-
Glucocorticoids, n (%)	29 (54.7)	-	-

NS, not significant; T2DM, type 2 diabetes mellitus; HTN, hypertension; BMI, body mass index; DAS28, disease activity score using 28 joints; CPR, C-reactive protein; MTX, methotrexate.

Figure 1. Carotid ultrasound findings.

0.60mm, $p=0.001$ in the left carotid artery), and in the presence of subclinical atherosclerosis overall, being more prevalent in RA patients (52.8% vs 18.9%, $p<0.001$) (Figure 1).

Conclusion: Patients with RA in the first five years of diagnosis have a higher prevalence of subclinical atherosclerosis than the general population. CV evaluation including a carotid US should be done at the time of diagnosis of RA patients, and subsequently it must be individualized according to the CV risk of each patient, with a maximum of five years to identify those patients who would benefit from an opportune treatment.

REFERENCES:

- [1] Geraldino-Pardilla L, Russo C, Sokolove J, et al. Association of anti-citrullinated protein or peptide antibodies with left ventricular structure and function in rheumatoid arthritis. *Rheumatology (Oxford)* 2017;56(4):534-40. doi: 10.1093/rheumatology/kew436
- [2] Ahmad S, Garg S, Dhar M, et al. Predictors of atherosclerosis in rheumatoid arthritis. *Vasa* 2012;41(5):353-9. doi: 10.1024/0301-1526/a000221

Disclosure of Interests: None declared

DOI: 10.1136/annrheumdis-2021-eular.2780

POS0484

THE ASSOCIATION BETWEEN SOCIAL STRESSORS AND DISEASE REMISSION AMONG MEN AND WOMEN WITH EARLY RHEUMATOID ARTHRITIS

L. Hedenstierna^{1,2,3}, A. K. Hedström⁴, L. Klareskog^{1,2}, L. Alfredsson^{3,5}, J. Askling^{6,7}, S. Ernestam², S. Saevardsdottir⁸, L. Ljung^{2,6,9}. ¹Karolinska Institutet, Department of medicine, Solna, Stockholm, Sweden; ²Stockholm Health Services, Academic Specialist Center, Stockholm, Sweden; ³Karolinska Institutet, Institute of Environmental Medicine, Stockholm, Sweden; ⁴Karolinska Institutet, Department of Clinical Neuroscience, Stockholm, Sweden; ⁵Karolinska Institutet, Center for Occupational and Environmental Medicine, Stockholm, Sweden; ⁶Karolinska Institutet, Department of Medicine, Solna, Division of Clinical Epidemiology, Stockholm, Sweden; ⁷Karolinska University hospital, Unit of Rheumatology, Stockholm, Sweden; ⁸School of Health Sciences, University of Iceland,

Faculty of Medicine, Reykjavik, Iceland; ⁹Umeå Univeristy, Department for Public Health and Clinical Medicine/Rheumatology, Umeå, Sweden

Background: The role of psychosocial conditions on the disease course of rheumatoid arthritis (RA) is getting increased attention. In our previous study, low social support and low decision latitude at work were associated with known modifiable risk factors for RA disease development, such as smoking and low educational level (1). Further, smoking and low educational level have previously been shown to be associated with worse RA disease outcome (2-4). Whether psychosocial characteristics are related to RA disease outcome needs further investigation.

Objectives: To investigate the relationship between two psychosocial characteristics: low social support and low decision latitude at work, and achievement of remission in patients with RA.

Methods: At inclusion in the Swedish EIRA study, incident RA cases (N=3724) and controls (N=5937), matched for age, sex and residential area, responded to a questionnaire including questions on social support and decision latitude at work. The answers were recoded into separate scores and the distribution of the scores among controls were used to define the exposures. Low social support and low decision latitude at work, respectively, among patients, were set as the level corresponding to the lowest quartile among controls, and were compared with scores corresponding to the remaining three quartiles.

The outcome, disease activity score 28-joint count (DAS28) remission, defined as DAS28<2.6, was captured through linkage with the Swedish Rheumatology Quality Register (SRQ) with data available from diagnosis for 2693 out of 3700 cases for social support and for 847 out of 1248 cases for decision latitude at work.

Logistic regression was used to evaluate the association between low social support or low decision latitude at work, respectively, and the chance of remission at the time-points 3 months, 12 months and 60 months after inclusion. All results were adjusted for age, sex and residential area and the fully adjusted models were also adjusted for smoking, obesity, physical activity and educational level.

Results: Low social support (n=655) was associated with a reduced chance for remission at all three time points in the model adjusted for age, sex and residential area; OR 3 months 0.77 (95% CI 0.61-0.97), OR 12 months 0.78 (95% CI 0.64-0.95) OR 60 months 0.77 (95% CI 0.59-0.99). This association was diminished after further adjustment. After stratifying for sex, this association was enhanced in women but inverse among men (Figure 1).

No association between low decision latitude at work (n=166) and chance for remission was observed neither in the analyses stratified for matching variables, nor in the full model. This result was only marginally changed after stratifying for sex (Figure 1).

Figure 1. Social stressors and chance of remission in men and women with early rheumatoid arthritis. Fully adjusted analyses.

Figure 1. Odds ratios for association between social stressors and DAS 28 remission

Conclusion: Low social support was associated with lower chance of remission in early RA, but the association was not independent of other risk factors for worse outcome (smoking, physical activity, obesity and low educational level). The interrelationship between social stressors and previously known risk factors for worse outcome highlights the importance of supportive actions at many levels to increase the possibility for the individual to make healthy decisions.

REFERENCES:

- [1] Hedenstierna. et al. *Scand J Rheumatol.* 2021;1-5.
- [2] Saevardsdottir, et al. *Ann Rheum Dis.* 2011;70(3):469-75.
- [3] Saevardsdottir, et al. *Arthritis Rheum.* 2011;63(1):26-36.
- [4] Jiang, et al. *Arthritis Res Ther.* 2015;17:317.