After RA diagnosis, 22.5% (55), 43.4% (106) and 3.3% (8) of patients were diagnosed with AHT, DL and DM. Delay in time to diagnosis was significantly associated with AHT, DL and DM diagnosis after RA diagnosis.

Conclusions: A higher inflammatory load, such as that accumulated in RA patients who have delayed the start of treatment, is associated with a higher probability of developing CVRF, which are associated with the appearance of vascular structural damage in the long term. These results are consistent with the effect of inflammatory cytokines on peripheral tissues (increased lipolysis in adipose tissue, increased insulin resistance, increased arterial stiffness).

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Disclosure of Interest: None declared

DOI: 10.1136/annrheumdis-2018-eular.6506

AB0381 CLINICAL AND RADIOGRAPHIC CHARACTERISTICS OF AIRWAY DISEASE IN PATIENTS WITH RHEUMATOID ARTHRITIS

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Background: Airway disease (AD) has drawn attention both clinically and etiologically in rheumatoid arthritis (RA), but is still poorly understood.

Objectives: We aimed to elucidate the clinical and radiographic characteristics of AD in patients with RA.

Methods: We retrospectively reviewed high-resolution computed tomography (HRCT) images and clinical data of 131 consecutive RA patients in whom HRCT were scanned for clinical purposes and screening. Overlap patients with other collagen tissue diseases and patients complicated with active infection or lung cancer were excluded. Patients who had a history of drug-induced lung disease, thoracic radiation, or exposure to dust were also excluded. HRCT images were reviewed independently by a pulmonologist and a radiologist in blind fashions, and cases of disagreement were discussed to reach a final consensus. AD was radiographically sub-categorised into 3 sub-groups: central AD, small AD, and middle lobe and lingular bronchiectasis. The associations between AD and interstitial lung disease (ILD) and each pair of the subtypes of AD were analysed by Fisher's exact test. The risk factors for AD and subtypes of AD were identified by multivariate logistic regression analyses.

Results: The mean age of the patients was 65 years old, the mean disease duration of the patients was 123 months, 69% of the patients were women, and 42% of the patients had past/current histories of smoking. The mean Disease Activity Score 28 (DAS28)-erythrocyte sedimentation rate (ESR) value was 2.87. AD and ILD were observed in 53 (40%) and 36 (27%) patients, respectively, and both in 19 (15%) patients. AD and ILD were not significantly associated ($p=0.11$). By multivariate logistic regression analyses, rheumatoid factor (RF) was identified as risk factors for whole AD (odds ratio [OR] 2.7; 95% confidence interval [CI], 1.0 to 6.9; $p=0.04$). Central AD, small AD, and middle lobe and lingular bronchiectasis were observed in 45 (34%), 31 (24%), and 17 (13%) patients, respectively. Each pair of these 3 subtypes were significantly associated with each other ($p<0.001$ in all comparisons). By multivariate logistic regression analyses without considering the overlaps with multiple subtypes of AD in the same patients, age and RF were identified as risk factors for central AD: the OR for age was 1.04 (95% CI, 1.00 to 1.08; $p=0.04$); the OR for RF was 3.0 (95% CI, 1.1 to 8.5; $p=0.034$). In contrast, DAS28-ESR values was identified as a risk factor for small AD: the OR for DAS28-ESR values was 1.5 (95% CI, 1.0 to 2.4; $p=0.0498$). Lastly, no significant risk factor was identified for middle lobe and lingular bronchiectasis by the multivariate logistic regression analysis, although disease duration tended to be longer in the patients with middle lobe and lingular bronchiectasis than in those without ($p=0.12$). In contrast, smoking histories was not significantly associated with whole AD or any subtypes of AD.

Conclusions: Radiologically defined AD was frequent comorbidity in RA patients, and multiple subtypes of AD were observed and coexisted. Furthermore, AD may be related to the pathology of RA, and different AD subtypes may have

distinct risk factors. Prospective studies with early RA patients were warranted to further clarify these findings and clinical impact of AD.

Disclosure of Interest: None declared

DOI: 10.1136/annrheumdis-2018-eular.3833

AB0382 RAPAMYCIN SELECTIVELY INCREASES CIRCULATING TREG CELLS AND MAINTAIN REMISSION OF PATIENTS WITH RHEUMATOID ARTHRITIS

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Background: It is thought that Rheumatoid arthritis (RA) arises from a breakdown in immunological self-tolerance. We have given a direct evidence for this conception that absolute number of peripheral CD4⁺ Regulatory T-cells (Tregs) decreased in RA patients^[1]. Furthermore, rapamycin can significantly induce immune tolerance through up-regulate Tregs and down-regulate Th17 cells^[2].

Objectives: To investigate the effect of rapamycin on the absolute numbers of Th17 and Treg cells and on maintenance of disease remission in RA patients instead of DMARDs.

Methods: Thirty-two patients, who achieved remission (DAS28 ≤ 2.6) by the treatment with two kinds of DMARDs for more than half a year, received rapamycin at a dose of 0.5 mg every other day for 12 weeks. Before and after treatment with rapamycin, the disease activity and immunological assessments of them were performed. In this study, BD Trucount tubes with the lyophilized pellet of a known number of internal counting beads were used for determining absolute counts of total CD4⁺ T cells in peripheral blood and then calculating the absolute number of Th17 cells and CD4⁺ Tregs.

Results: At week 12, 65.6% of the patients maintained remission (DAS28 ≤ 2.6). The DAS28 was increased from a median of 2.03 (at week 0) to 2.15 (at week 12) ($p>0.05$). The absolute number of Treg cells was increased significantly from a median of 22.16 (at week 0) to 32.19 (at week 12) ($P=0.039$). The absolute number of Th17 cells was decreased from a median of 5.98 (at week 0) to 5.56 (at week 12) ($p>0.05$). The ratio of Th17/Treg cells was also decreased from a median of 0.245 (at week 0) to 0.19 (at week 12) ($p>0.05$). At the same time, the mean dosage of prednisone decreased from 6.29 mg/d to 5.35 mg/d and that of DMARDs were also reduced from 93.75% to 56.25%.

Conclusions: Rapamycin was effective in the maintenance of remission (DAS28 ≤ 2.6) by increase of Treg cells and correcting the imbalance of Th17/Treg cells. Meantime, the mean dosage of conventional drugs such as glucocorticoid and DMARDs gradually decreased. In the future, rapamycin may replace current immunosuppressant for treatment of RA.

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Disclosure of Interest: None declared

DOI: 10.1136/annrheumdis-2018-eular.2564

AB0383 CHANGES OF METABOLIC BIOMARKER LEVELS UPON ANTI-TNF THERAPY IN RHEUMATOID ARTHRITIS PATIENTS

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Background: Rheumatoid arthritis (RA) has been associated with cardiovascular disease and metabolic syndrome. Numerous pro-inflammatory cytokines (e.g. TNF- α , IL-1, IL-6) are released, which cytokines cause increased reactive oxygen species (ROS) production and thereby contribute to the increased lipid peroxidation and reduction of many antioxidants. These processes not only lead to the deterioration of joints and other tissues but may also contribute to comorbidities, such as atherosclerosis.

Objectives: The aim of this study was to assess the effects of anti-TNF therapy on different metabolic markers, such as PON1 (paraoxonase 1), arylesterase, chemoerin and adiponectin. We also investigated whether these biomarkers correlated with various demographic, clinical and laboratory markers.

Methods: We treated 37 RA patients with either etanercept (ETN) or certolizumab pegol (CZP) in a 12 month follow-up study. Assessments were performed at baseline, and 3, 6 and 12 months after treatment initiation. Serum chemerin and adiponectin concentrations were measured by commercially available ELISA kits (R and D System, MN and USA). PON1 and arylesterase activities were measured by spectrophotometry. In addition, age, disease duration, disease activity (DAS28), CRP, anti-CCP, IgM rheumatoid factor and plasma lipid levels were also assessed. Arterial flow-mediated vasodilation (FMD), carotid intima-media thickness (cIMT) and arterial pulse-wave velocity (PWV) were assessed by ultrasound.

Results: Anti-TNF treatment resulted in a significant decrease in the levels of chemerin ($p<0.001$) and adiponectin ($p<0.007$) after 12 months. There were no significant changes in the levels of other metabolic biomarkers. We found the following correlations between the baseline values: the PON1 levels correlated with the age of patients ($R=0.466$, $p=0.004$). The adiponectin correlated with the disease activity ($R=0.385$, $p=0.030$), HDL-C ($R=0.417$, $p=0.012$) and the triglyceride levels ($R=0.481$, $p=0.003$). The total cholesterol correlated with the PWV ($R=0.449$, $p=0.021$) and the levels of the LDL-C ($R=0.911$, $p<0.001$). The baseline triglyceride correlated with the IgM rheumatoid factor ($R=0.343$, $p=0.021$); and the levels of LDL-C correlated with the PWV values ($R=0.444$, $p=0.023$).

Conclusions: Metabolic factors, such as certain adipokines, PON1 and arylesterase may play a role in oxidative stress and atherosclerosis associated with RA. Anti-TNF treatment may affect adipokine levels.

Disclosure of Interest: None declared

DOI: 10.1136/annrheumdis-2018-eular.2122

AB0384 RHEUMATIC ARTHRITIS PATIENTS WITH VERY HIGH CARDIOVASCULAR RISK: POOR RESULTS IN CHANGES IN LIFESTYLE DURING FOLLOW-UP

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Background: Rheumatoid arthritis (RA) is associated with accelerated atherosclerosis, which results in high cardiovascular morbidity and mortality. The European Atherosclerosis Society recommends a strict control of cardiovascular (CV) risk factors, focusing in a healthy lifestyle, for the prevention of future CV events.

Objectives: Our aim was to assess the characteristics of healthy lifestyle in patients with RA and very high risk of CV events.

Methods: Prospective study that included a group of 113 patients, of whom 65 presented carotid plaques on carotid ultrasound study and, due to this, were categorised as having very CV high risk at the baseline visit. At this time, patients were informed about the risks associated to their disease and the high risk of having CV events. They were even warned of the need of healthy lifestyle habits. Data on lifestyle, smoking, obesity and diabetes mellitus were collected at baseline and last visit (with an interval of more than 5 years)

Abstract AB0384 – Table 1. Clinic characteristics of 65 patients with RA and very high CV risk.

CLINIC CHARACTERISTICS	LAST VISIT (n = 65)
Age (years): Mean (SD)	67 (8.7)
Sex: Women (%)	44 (68%)
Duration of RA (years): Mean (SD)	17 (7.7)
Baseline Visit- Final Visit (years): Mean (SD)	5.5 (0.95)
Dyslipidemia: Yes (%)	47 (72%)
High blood pressure: Yes (%)	40 (62%)
Diabetes Mellitus: Yes (%)	12 (18%)
Smoking: Yes (%)	17 (26%)
Obesity: Yes (%)	26 (40%)
Total Cholesterol (mg/dl): Mean (SD)	186 (42.4)
Waist circumference: Yes (%) ($\sigma^2 > 102$ cm, $\varphi^2 > 88$ cm)	42 (65%)
LDL- Cholesterol (mg/dl): Mean (SD)	104 (34.6)
Atherogenic index: Mean (SD)	3.37 (0.88)
Systolic blood pressure (mmHg): Mean (SD)	136 (14.2)
Diastolic blood pressure (mmHg): Mean (SD)	80 (8.2)

Results: The results of the 65 patients at the last visit are shown in table 1. The average age was of 67 years, with a disease duration of 17 years and high prevalence of dyslipidemia (72%), HTA (62%) and obesity (40%). Data obtained at the basal and last visit (with an average difference of 5.5 years) were compared in table 2. At last follow-up none of the smokers at baseline had discontinued smoking. There were no significant differences in the body mass index (BMI) average. Nevertheless, there was increase in the number of patients

with a BMI <30 (36% vs 31%). Only a few patients claimed to go on any type of diet (20%), although the majority (88%) had classic CV risk factors (DM, HTA, obesity or dyslipidemia) at baseline that required adequate diet regime. Yet, more than half of the patients (62%) made regular exercise (>3 times/week) and did not have a sedentary lifestyle (50%), despite having a mean age of 67 years and long disease duration at baseline. Poor control of diabetes mellitus (DM), was found in more than half of the patients.

Abstract AB0384 – Table 2. Variables assessed at baseline visit and last visit of 65 patients with RA and very high CV risk.

Variables	BASALINE VISIT (n = 65)	LAST VISIT (n = 65)
Smoking: Yes (%)	17 (26%)	17 (26%)
Discontinued smoking: Yes (%)	-	0
Obesity: Yes (%)	24 (37)	26 (40%)
BMI: Mean (SD)	28.2 (5)	28.6 (5.5)
BMI > 30 : Yes (%)	22 (36%)	19 (31%)
Diet: Yes (%)	-	12 (20%)
Exercise: Yes (%)	-	38 (62%)
Sedentarism: Yes (%)	-	30 (50%)
Diabetes Mellitus (DM): Yes (%)	6 (9%)	12 (18%)
DM. Treatment: Yes (%)	4 (67%)	6 (50%)
DM. Higher Glycosylated Hemoglobin: Yes (%)	-	7 (58%)

Conclusions: Despite having been informed on the high risk of CV events, patients with RA included in the category of very high CV risk performed poor long-term control of factors that include a healthy lifestyle.

Disclosure of Interest: None declared

DOI: 10.1136/annrheumdis-2018-eular.4207

AB0385 COMPARATIVE ASSESSMENT OF BMD IN PRE-, POSTMENOPAUSAL WOMEN AND MAN WITH RHEUMATOID ARTHRITIS (RA)

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Background: RA doubles the risk of hip and vertebral fractures, regardless of the use of GCs, and disease activity is consistently associated with low BMD. But now, it is not clearly identified predictors of the individual risk of bone loss depends on sex and menopausal status patients with RA

Objectives: To compare BMD in man, pre- and postmenopausal women with RA

Methods: The study was performed on 145 patients: 117 women (mean age 45.4 $\pm$ 13.0 years, mean disease duration 9.7 $\pm$ 7.7 years, 41% (n=48) postmenopausal) and 28 man (mean age 46.4 $\pm$ 16.9 years, mean disease duration 4.2 $\pm$ 4.1 years) with RA. 91.6% have moderate/high disease activities by DAS 28. 68.4% women and 64.3% men received prednisolone ≤ 10 mg/day more than 3 month, 87% of patients received MTX. BMD was measured in 3 part of the skeleton: hip, lumbar spine, distal part of forearm. Female patients were divided in two groups by menopause: premenopausal (PreM) in mean age 36.9 $\pm$ 9.3 years and postmenopausal (PM) in the mean age 57.6 $\pm$ 5.9 years.

Results: BMD was decreased in 44.5% of women and 42.9% of man. BMD of hip, lumbar spine, distal part of forearm were respectively decreased in 26.1%, 26.1%, 18.8% PreM women and 66.7%, 70.8%, 79.2% PM women. 39.3% of man had decrease BMD in the hip and 42.8% – in the lumbar spine. In women the age was strong associated with BMD decrease, in man no association with age was found. In PreM women was not found association between BMD, disease duration, DAS28 and X-ray changes in hands and feet, only cortical index was correlated with BMD in all part of the skeleton. In PM women the disease duration was negatively correlated with BMD in total hip and forearm, in men – with BMD in lumbar spine and hip neck ($p<0.01$). It was found association between BMD and X-ray stage by Steinbrocker in PM women and man. DAS28 was strong associated with low hip and forearm BMD in PM women and low spine BMD in men. According to dispersion analysis PM women with III-IV X-ray stages has significantly lower BMD in the hip (total: $Z=2.16$, $p=0.04$; neck: $Z=2.61$, $p=0.01$) and medium part of forearm ($Z=2.92$, $p=0.001$). Man had significantly lower BMD in all part of the skeleton since II X-ray stage ($p<0.001$) and negative correlation between BMD and presence of erosion.

Conclusions: A sexual differences in BMD loss was observed in different parts of the skeleton. In man the most affected part of the skeleton was spine and BMD changes were more likely to PreM women, had high association with disease activity by DAS28 and presence of erosion, and no association with age. In PreM women only cortical index had high predictive value for decrease BMD in all parts of the skeleton. Age, disease deration, duration of menopause, DAS28 and x-ray changes in hand and feet was strong associated with decreased BMD in the hip and forearm in PM women.