thicker among RA patients with rheumatoid factor (RF) positive ($p=0.015$, CI:0.53–0.66). LAD coronary artery wall thickness was increased in early RA compare to controls (0.61 ± 0.04 mm (CI:0.52–0.70); and 0.48 ± 0.08 mm (CI:0.44–0.51) respectively, $p=0.001$.

Conclusions: Early RA patients have increased coronary arteries atherosclerotic burden compared to controls matched for age, and sex. Rheumatoid factor positivity, high Disease Activity Score and Patient Global Assessment of disease activity were associated with coronary wall thickness.

Disclosure of Interest: None declared

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AB0403 FACTORS CONTRIBUTE TO THE LEVEL URIC ACID IN RHEUMATOID ARTHRITIS

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Background: Uric acid (UA) is a strong correlate of renal dysfunction in rheumatoid arthritis (RA), even in the absence of crystal deposition, by causing endothelial dysfunction, intrarenal vascular disease and renal impairment. In hyper or normo-uricaemia RA, UA was the strongest independent predictor of GFR, even after adjustments for most of the potential confounding factors. Additionally, in RA patients UA had been found to be an independent predictor of hypertension and cardiovascular disease (CVD).

Objectives: this study aimed to investigate what could be the determinants of the UA level in RA patients.

Methods: RA patients with no clinically evident gout, CVD, thyroid disease, liver or renal disease were studied. Serum UA was obtained for all the patients. Renal function parameters, RA disease characteristics, inflammatory markers, and traditional CVD risk factors relation to uric acid level was examined using simple linear regression analysis. To test for the independence association between uric acid and the variables of interest, multiple model was built for the same dependent and independent variables. Statistical significance was accepted at $p\text{-value}<0.05$.

Results: The study recruited 86 consecutive patients meeting the 1987 RA revised ACR criteria, attending routine outpatient clinics at the Department of Rheumatology. Basic demographics and clinical characteristics of were obtained. Of the total 86 patients, 10 (11%) were men and 77 (89%) were women. The mean age of the participants was 47 ± 14 years, with mean RA duration of 68 ± 87 months. 64 out of 86 participants (74%) had rheumatoid factor positive.

The mean UA value was 255 ± 86 $\mu\text{mol/L}$ (NR: 180–340). The mean GFR, calculated using modified MDRD (Modification of Diet in Renal Disease) formula was 133 ± 52 ml/min/1.73m^2 .

Using univariate analysis revealed a positive linear relationship between uric acid level and each of the age of the participants ($p<0.016$, CI: 0.31, 2.92), age at RA symptoms onset ($p<0.04$, CI: 0.025, 0.039), age at RA diagnosis ($p<0.03$, CI: 0.101, 2.565), systolic blood pressure ($p=0.04$, CI: 0.054, 2.167), diastolic blood pressure (DBP) ($p=0.02$, CI: 0.322, 3.777), monocytes absolute count ($p=0.014$, CI: 2.510, 4.801), monocytes percentage ($p=0.005$, CI: 34.599, 193.595), cholesterol level ($p=0.008$, CI: –39.934, –6.286), Triglyceride level ($p=0.04$, CI: 0.064, 56.546), urea level ($p<0.001$, CI: 9.356, 28.743), creatinine ($p\leq0.001$, CI: 2.345, 3.960), urinary microalbumin ($p=0.024$, CI: 0.0296, 0.399), urinary microalbumin/creatinine ratio ($p=0.006$, CI: 0.791, 4.616), and ferritin level ($p=0.025$, CI: 0.044, 0.633).

As well, univariate analysis revealed a negative linear relationship between UA level and GFR ($p<0.001$, CI: –1.127, –0.486)

Building a multiple model, including the entire variable with significant association with the UA in the univariate analysis showed that the UA level in RA is determined by GFR, microalbumin creatinine ratio, cholesterol level, monocytes count and DAS score. The adjusted R^2 of the model was 54

Conclusions: Whether serum uric acid is merely a marker that reflects the integration of co-morbidities and subclinical renal impairment or a true risk-causative factor for CVD outcome remains as an important question, therefore it is important to know the determinant of UA level and control it.

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AB0404 APELIN CONCENTRATIONS ARE ASSOCIATED WITH A REDUCED LEFT ATRIAL VOLUME INDEX AND IMPROVED SYSTOLIC FUNCTION IN PATIENTS WITH RHEUMATOID ARTHRITIS

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Background: We recently reported that apelin concentrations are associated with reduced atherosclerosis and plaque vulnerability as well as improved aortic function in rheumatoid arthritis (RA)^{1,2}. These relations were influenced by RA characteristics^{1,2}. Besides protecting against atherosclerosis, apelin is also a vasoactive peptide that improves cardiac contractility. In this regard, patients with RA experience a 2-fold increased risk of developing heart failure³. RA patients often demonstrate diastolic dysfunction and heart failure with a preserved ejection fraction (HFpEF). Traditional cardiovascular risk factors do not fully explain the increased heart failure incidence in this population. Metabolic risk factor driven inflammation is highly implicated in HFpEF.

Objectives: This study aimed to determine whether apelin can impact left ventricular function in RA and whether disease characteristics can modify this potential effect.

Methods: Relationships of apelin concentrations with echocardiographically determined markers of systolic and diastolic function including stroke volume, endocardial fractional shortening, midwall fractional shortening, ejection fraction, relative wall thickness, left ventricular mass, mitral inflow (E/A), filling pressure (E/e') and left atrial volume index (LAVI) were determined in multivariable regression models among 169 patients without established cardiovascular disease.

Results: In demographic characteristic adjusted analysis, rheumatoid factor (RF) positivity, joint deformity counts, and CRP were associated with increased apelin concentrations ($p=0.01$, 0.02 and 0.05, respectively). Apelin was associated with a reduced LAVI [β (SE)=-4.6 (2.2); $p=0.04$] but not with E/A, lateral e' or E/e' ($p>0.05$ for all). RA characteristics including disease duration, CRP, erythrocyte sedimentation rate (ESR), RF positivity, and joint deformity counts did not impact apelin concentration-diastolic function marker relationships (interaction p values >0.05). Apelin levels were associated with increased endocardial fractional shortening [β (SE)=5.99 (2.97); $p=0.04$] and midwall fractional shortening [β (SE)=6.92 (3.0); $p=0.03$]. The ESR and anti-citrullinated peptide antibody (ACPA) status impacted the apelin level-endocardial fractional shortening relationships (interaction $p=0.05$ and 0.01, respectively). In stratified analysis, apelin concentrations were associated with improved endocardial fractional shortening in those with [β (SE)=14.1 (3.9); $p=0.001$] but not without an ESR >12 mm/hr (median value), and in those with [β (SE)=8.2 (3.7); $p=0.03$] but not without ACPA positivity.

Conclusions: In RA, apelin concentrations are associated with a reduced LAVI irrespective of RA activity and severity characteristics. Apelin concentrations are also associated with improved endocardial fractional shortening in patients with RA, particularly in those with high-grade inflammation and ACPA positivity. Whether apelin can improve left ventricular systolic and diastolic function in RA merits further exploration in longitudinal studies.

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AB0405 CLINICAL FEATURES AND PROBLEMS OF ELDERLY ONSET RHEUMATOID ARTHRITIS IN ULTRA-AGEING SOCIETY –SINGLE CENTRE RETROSPECTIVE COHORT STUDY-

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Background: Japan is the ultra-ageing society ahead of any other country in the world, which ageing rate (the ratio of the population aged 65 and older to the total population) was reported to be 27.3% on October 1, 2016. The rate of aged patients, who followed up at the division of rheumatology in Saitama medical centre, had exceeded 40%.

Objectives: The aim of our study is to reveal recent clinical features and problems of elderly onset rheumatoid arthritis (EORA) patients for better management.

Methods: Patients had a diagnosis by 1987 classification criteria or 2010 ACR/EULAR criteria. We firstly listed up RA patients who were followed up our hospital from April 1 to September 30, and above aged 65 years old as of September 30. Then we retrospectively collected clinical information of EORA patients who onset

above 60 years old, diagnosed and made starts of treatment in our hospital, and observed more than 6 months, from medical records.

Results: One hundred eighty eight EORA patients were enrolled in this study. Female were 116 (62.0%). Mean observation period from first visit until September 30, was 68 months. Rheumatoid factor positive rate was 67.0%. Anti-CCP antibody-positive was 68.2% (107/157), and most of them (65.5%, 70/107) had high antibody titer over 100 U/mL. At the time of diagnosis, average CRP was 3.1 mg/dL. Respiratory complications were seen in 26.1% (49 cases), including 28 interstitial lung disease, 10 COPD/emphysema, 7 non-tuberculous mycobacteriosis/obsolete tuberculosis, and 6 bronchiectasis. Other complications were diabetes 16.5% (past 25 cases, new 6), hypertension 38.3% (past 66, new 6), and hyperlipidemia 23.9% (past 33, new 12). Histories of cerebrovascular or cardiovascular events were seen in 10.6% (20 cases), and history of malignancy was seen in 6.9% (13 cases). During observation period, newly developed malignancy was seen in 14 cases (14.1/1000 person-years) including 4 MTX related lymphoproliferative disorders (MTX-LPD), 3 gastrointestinal cancer, 3 gynaecological cancer, 2 lung cancer, and so on. Infectious adverse event were occurred in 35 patients (35.3/1000 person-years). From the point of treatment, corticosteroids were prescribed in 32%, csDMARDs 88%, and biological DMARDs (BIO) 47%. Of 89 EORA patient treated with BIO, average DAS28-ESR was 5.77, and HAQ-DI 1.48 at the baseline. Twenty-nine cases were started to treat with BIO as monotherapy, 13 cases as switching to BIO from csDMARDs, and 47 as addition BIO to csDMARDs. During observation period, reasons of cessation of the first BIO were remission in 21, adverse events in 19 (7 infections, 6 injection-site/infusion reaction, 3 malignancies, and so on), insufficient response in 16, and patient's hope in 2.

Conclusions: RF/anti-CCP antibody positive rate was lower than general RA population, but slightly higher than previous reports on EORA.¹⁾ BIO could be discontinued in 24% of 89 patients who received BIO because of remission. On the other hand, the frequency of infection and malignancy was still higher in EORA patients. So it is necessary to adjust anti-rheumatic therapy for poor prognostic cases, and we should be careful to follow up EORA patients.

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AB0406

SIGNIFICANT ASSOCIATION BETWEEN RENAL FUNCTION AND AREA OF AMYLOID DEPOSITION IN KIDNEY BIOPSY SPECIMENS IN BOTH AA AMYLOIDOSIS ASSOCIATED WITH RHEUMATOID ARTHRITIS AND AL AMYLOIDOSIS

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Background: The kidney is a major target organ for systemic amyloidosis, which results in proteinuria and an elevated serum creatinine level. The clinical manifestations and precursor proteins of amyloid A (AA) and light-chain (AL) amyloidosis are different, and the renal damage due to amyloid deposition also seems to differ.

Objectives: The purpose of this study was to clarify how the difference in clinical features between AA and AL amyloidosis are explained by the difference in the amount and distribution of amyloid deposition in the renal tissues.

Methods: A total of 119 patients participated: 58 patients with an established diagnosis of AA amyloidosis (AA group) and 61 with AL amyloidosis (AL group). We retrospectively investigated the correlation between clinical data, pathological manifestations, and the area occupied by amyloid in renal biopsy specimens. In most of the renal specimens the percentage area occupied by amyloid was less than 10%. For statistical analyses, the percentage area of amyloid deposition was transformed to a common logarithmic value (Log10%amyloid).

Results: The results of sex-, age-, and Log10%amyloid-adjusted analyses showed that systolic blood pressure (SBP) was higher in the AA group. In terms of

renal function parameters, serum creatinine, creatinine clearance (Ccr) and estimated glomerular filtration rate (eGFR) indicated significant renal impairment in the AA group, whereas urinary protein indicated significant renal impairment in the AL group. Pathological examinations revealed amyloid was predominantly deposited at glomerular basement membrane (GBM) and easily transferred to the mesangial area in the AA group, and it was predominantly deposited at in the AL group. The degree of amyloid deposition in the glomerular capillary was significantly more severe in AL group. The frequency of amyloid deposits in extraglomerular mesangium was not significantly different between the two groups, but in AA group, the degree amyloid deposition was significantly more severe, and the deposition pattern in the glomerulus was nodular. Nodular deposition in extraglomerular mesangium leads to renal impairment in AA group. There are significant differences between AA and AL amyloidosis with regard to the renal function, especially in terms of Ccr, eGFR and urinary protein, even after Log10%amyloid was adjusted; showing that these inter-group differences in renal function would not be depend on the amount of renal amyloid deposits.

Conclusions: These differences could be explained by the difference in distribution and morphological pattern of amyloid deposition in the renal tissue.

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AB0407

THE IMPACT OF DEPRESSION ON SOCIAL CONTACTS OF PATIENTS WITH RHEUMATOID ARTHRITIS

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Background: Rheumatoid arthritis (RA) affects the psychological and emotional state of the patient, leading to a significant reduction in the quality of life and social contacts.

Objectives: Assess the occurrence and degree of depression in RA patients and their impact on quality of life and social contacts.

Methods: The study involved 110 patients, 78.4% women and 22.6% men, with RA of median age 58.7. The average disease duration was 13.6 years. 68% of patients were treated with methotrexate monotherapy (MTX), 32% by combination of MTX and other DMARD. The disease activity in patients was determined by the ideax DAS28, the functional status -HAQ-DI questionnaire. The intensity of the pain was determined using a visual analogue scale for VAS pain (0–100 mm). The degree of radiological changes was determined based on the classification by Steinbrocker. Patients completed a questionnaire related to the quality of social relationships. The degree of depression was determined using Bäck scale for depression.

Results: The incidence of depression had 65.4% of the patients. A mild degree of depression was observed in 26.4%, moderate 24%, expressed 13% while 2% of the patients had a more severe degree. There was a significant statistic correlation between the degree of depression with age, the duration of the disease, the high degree of DAS28, HAQ-DI, VAS pain and the degree of radiological changes. By analysing the quality of life and social contact, patients in 62% were supported by a close family and a spouse, 28% of their close relatives, 7% of the wider family, while 3% of the patients lived alone.

Conclusions: Depression is the most common and most important psychological state that occurs in patients with RA. It is important to recognise and start treatment on time, which should be based on a multidisciplinary approach. In addition to family support, overall social support also takes a significant place.

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