patients with tenosynovitis developing arthritis to those without-tenosynovitis not-developing arthritis. The 2 patients with tenosynovitis not developing arthritis, had lower levels of the antibodies as compared to those with tenosynovitis developing arthritis. No significant differences in other patient baseline characteristics were seen between those with, and those without tenosynovitis (86 vs 85% female, median (range) 54 years²⁹⁻⁷¹ vs 50 years,²²⁻⁸² mean visual analogue scale pain 34 vs 31, mean c-reactive protein 2.7 vs 3.2; tender joint count 1.2 vs 0.7).

Conclusions: Ultrasound detected tenosynovitis in the context of ACPA positivity is a good clinical predictor of rapid arthritis onset in individuals at risk of developing RA.

Disclosure of Interest: None declared

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Rheumatoid arthritis – comorbidity and clinical aspects

THU0135 USING FRAX® AND PERIPHERAL BONE MINERAL DENSITY FOR IDENTIFYING POTENTIAL CANDIDATES FOR OSTEOPOROSIS THERAPY AMONG RHEUMATOID ARTHRITIS PATIENTS

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Background: Rheumatoid arthritis (RA) and glucocorticoids (GC) therapy are proven risk factors (RF) for osteoporosis (OP) and osteoporotic fractures (OPF). Along with these factors, patients with RA have other diseases and conditions that can affect the increase of the risk of OPF.

Objectives: To determine the frequency of RA in the epidemiological random sample of persons aged ≥50 years and to identify among them patients who need the prevention of OPF.

Methods: The epidemiological sample included 18 018 people (13 941 women and 4 077 men, mean age 62±10 years). A survey was conducted using a unified questionnaire that included possible risk factors for osteoporosis (age, body mass index, individual or family history of fragility fracture, smoking, alcohol misuse, confirmed diagnosis of RA, long-term use of GC, premature menopause, physical inactivity, disorder strongly associated with osteoporosis) and daily calcium intake with food. The 10 year probability of fracture was calculated using the FRAX. Bone mineral density (BMD) was measured in the distal forearm using Osteometer Meditech DTX-200 as a screening method.

Results: The prevalence of RA in the epidemiological sample was 1.7% (1.9% for women and 1.2% for men, $p=0.0047$). The mean FRAX values for the major OPF in RA patients were significantly higher than those without RA: $18.4\pm10\%$ and $13.2\pm7.9\%$, respectively ($p<0.0001$) for women and 8.9 ± 6.4 and 6.2 ± 3.7 , respectively ($p<0.0001$) for men. Forty-two percent of RA patients had a high risk of OPF: 48% of women and 8% of men. The percentage of women with RA who had FRAX above the threshold of therapeutic intervention was significantly higher than among those without RA (31%), $p=0.00001$. At the same time, in men, the frequency of high fracture risk was the same in patients with RA and without RA (8% and 7%, respectively, $p>0.05$). Among the most common RF OP and OPF in RA patients were previous fractures (33%), causes of secondary OP (30%) and taking GC (18%), for men an additional factor - smoking (33%). Women with RA had significantly more concomitant diseases and other secondary causes of OP and OPF (33%) than those without RA (23%), $p=0.0004$. More of them used GC compared to control (17% and 8%, respectively, $p<0.0001$). Among men significant differences were obtained only for the using of GC: 20% in RA patients and 5% in control group ($p<0.0001$). Other RF were found with the same frequency. The average calcium intake with food was 683 ± 231 mg per day among women and 635 ± 276 mg per day in men without statistical differences between RA patients and control. 20% of men and 16% of women had less than half of daily calcium intake norm ($p=0.53$). OP in the distal forearm was diagnosed in 47% RA women and 20% RA men compared to control: in 22% women ($p<0.0001$) and 19% men ($p>0.05$). Among RA patients, 13% of women and 20% of men had low FRAX and OP in the distal forearm.

Conclusions: Every third woman with RA had at least one more comorbid disease or condition associated with an increased risk of OPF and about every second - low BMD. 48% of women and 8% of men with RA had a high risk of OPF and needed prevention of OP. Additionally, among RA patients, 13% of women and 20% of men with low BMD in the distal forearm require axial densitometry.

Disclosure of Interest: None declared

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THU0136

MAJOR CARDIOVASCULAR EVENTS IN 434 RHEUMATOID ARTHRITIS PATIENTS TREATED WITH RITUXIMAB FROM A SINGLE-CENTRE

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Background: Increased cardiovascular (CV) risk due to excess atherosclerosis in rheumatoid arthritis (RA) is attributed to systemic inflammation. Effective disease modifying drugs have been associated with reduced CV burden. Pre-clinical models of atherosclerosis suggest atheroprotective IgM and atherogenic IgG B-cell populations; with reduced atherosclerosis in murine models treated with depleting anti-CD20 monoclonal antibody suggesting relative preservation of protective B-cell population. The specific impact of rituximab (RTX) on the development of CV disease in RA has not been evaluated thus far.

Objectives: To determine the incidence of major cardiovascular events (MACE) in RA patients treated with rituximab and factors associated with any increased risk.

Methods: This was a single-centre, cohort study of patients with RA treated with ≥1 RTX cycle recruited prospectively. MACE outcomes were retrospectively identified as myocardial infarction, cerebrovascular accident, or death due to CV disease. Patients with and without MACE were compared for age, sex, CV risk factors (diabetes mellitus, hypertension, hyperlipidaemia, smoking, prior CV disease), disease characteristics (disease duration, ACPA, RF, methotrexate use, DAS28) and immunoglobulin levels. Association between the proportion of MACE and these variables of interest was analysed using the Student T test or Chi squared test as appropriate.

Results: A total of 434 patients were studied (mean age 58 years [SD 13], 80% females). Total follow-up was 3211 patient-years (PY). Of these, 32/434 (7.4%) had a MACE (incidence rate 10 per 1000 PY). Forty-three deaths (any cause; 9.9%) were recorded, 6/43 and 26/391 deaths respectively in patients with and without MACE (14% vs 7%, $p=0.114$). Patients with MACE were older (64 [SD 9] vs 58 [SD 13] years, $p=0.001$), more likely to be diabetics (22% vs 6%, $p=0.001$), smokers (11% vs 5%, $p=0.027$), and were treated less frequently with methotrexate (4% vs 13%, $p=0.002$), but did not differ for hypertension, hyperlipidaemia, prior CV disease nor RA characteristics. Data on immunoglobulins at baseline and after the first cycle were available in the first instance in 287/434 patients. There were no significant differences in baseline immunoglobulin levels between patients with MACE and those without. However, the proportion of patients with MACE was significantly lower among those who had a reduction in their IgM levels from baseline (5% vs 21%, $p=0.006$), but not for IgG or IgA. No significant differences in the clinical profile of patients with decreased IgM and those without were observed.

Conclusions: These preliminary data suggest decrease of IgM is associated with decreased risk of MACE in RA patients treated with RTX. Planned analysis on serial Ig with cumulative RTX exposure will clarify this initial observation. Whether and how any such association is related to a specific RTX-mediated effect and/or the overall reduction in the inflammatory burden deserves further investigation.

Disclosure of Interest: None declared

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THU0137

RHEUMATOID ARTHRITIS AS AN EMERGENCY DEPARTMENT RISK FACTOR FOR ACUTE CORONARY SYNDROME

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Background: In rheumatoid arthritis (RA), the risk of myocardial infarction (MI) is 1.5–2.0 times higher than for the general population. However, it is unknown whether RA is a risk factor also in high-risk populations, such as among patients subjected to a cardiac diagnostic work-up at the emergency department (ED).

Objectives: To study 1) whether RA is a risk factor for acute coronary syndrome (ACS) in a population-based sample of individuals seen in the ED, and 2) how any association with RA relates to the presence of chest pain.

Methods: A total of 96 220 patients (of whom 1 312 had RA) seen in the ED of the four hospitals in the larger Stockholm area, due to chest pain and/or tested for

troponin T, were identified through records of ED visits and cross-referenced to other registers. The outcome measure was ACS, defined as a discharge diagnosis of MI, unstable angina requiring urgent revascularisation, or death within 30 days (for directly discharged only). The association between RA and the outcome was assessed using logistic regression.

Results: ACS was more common in patients with RA (4.7%) than in subjects without RA (3.3%) – but this difference was largely attributable to RA patients being older and, upon taking age and gender into account, not statistically significant ($p=0.13$). Overall and across all individuals with chest pain and/or a troponin T test taken, RA was not associated with ACS when adjusting for age, demographics and comorbidity, odds ratio (OR) 1.24, 95% confidence interval (CI): 0.95–1.61. In analyses restricted to patients presenting with chest pain (irrespective of troponin T test status, $n=49\ 283$), a significant association between RA and ACS was observed (adjusted OR 1.40 95% CI 1.01–1.96).

Figure 1 Odds ratios for myocardial infarction (MI) in rheumatoid arthritis (RA) patients compared with unexposed. Patients with suspected MI in the emergency department (ED) grouped by presence of chest pain. Other chief complaints than chest pain labelled as atypical complaints. MI refers to combined outcome of MI or 30 day major cardiac event (MACE). * Model 1: adjusted for age, gender, hospital, year of ED visit. † Model 2: adjusted for age, gender, hospital, year of ED visit, smoking, estimated glomerular filtration rate (eGFR), hypertension, hyperlipidaemia, diabetes mellitus, obesity, atrial fibrillation, heart failure and previous cardiovascular disease. Previous cardiovascular disease meant having one of the following diagnoses: previous stroke or MI, angina pectoris or peripheral vascular disease.

Conclusions: Although RA was not an independent risk factor for ACS among all patients subjected to a cardiac diagnostic work-up in the ED, RA was an independent risk factor among patients presenting with chest pain as chief complaint, an association that was not readily explained by traditional cardiovascular risk factors. The combination of RA and chest pain should thus increase the suspicion of ACS.

Disclosure of Interest: None declared

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THU0138 OCCURRENCE OF IN-STENT RESTENOSIS AFTER CORONARY DRUG-ELUTING STENT IMPLANTATION IN PATIENTS WITH RHEUMATOID ARTHRITIS

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Background: Rheumatoid arthritis (RA) is associated with increased risk of cardiovascular events. Thus, patients with RA have a greater chance of undergoing coronary drug-eluting stent (DES) implantation. However, it is not known whether the rate of in-stent restenosis (ISR) is also increased in RA patients.

Objectives: To investigate characteristics of in-stent restenosis (ISR) after drug-eluting stent (DES) implantation in patients with rheumatoid arthritis (RA), and to evaluate the effect of disease modifying anti-rheumatic drugs (DMARDs) on ISR.

Methods: Patients with RA who underwent DES implantation between January, 2005 and March, 2017 were included. Characteristics of the patients and the vessel lesions were reviewed retrospectively. To evaluate the effect of DMARDs on ISR, previously known ISR risk factors and ISR incidence were compared between the treated vessels of patients who did and did not receive specific DMARDs.

Results: In total, 30 RA patients (43 vessel lesions) were included. 4 treated vessel lesions developed ISR (4/43, 9.3%) in median 106.8 (81.1–109.0) months after DES implantation. Compared with the previous data in general population (occurrence of ISR: 3%–20%, mean time of ISR occurrence: 13 months), the

Abstract THU0138 – Table 1. Comparison between treated vessels in the MTX group and treated vessels in the non-MTX group

	Treated vessels in the MTX group (n=31)	Treated vessel in the non-MTX group (n=12)	p-value
General characteristics			
Female, n (%)	16 (51.6)	5 (41.7)	0.558
HTN, n (%)	19 (61.3)	5 (41.7)	0.245
Smoking, n (%)	Current smoker, 4 (12.9)	Current smoker, 1 (8.3)	0.615
Statin, n (%)	27 (87.1)	12 (100.0)	0.563
Other csDMARDs, n (%)	26 (83.9)	12 (100.0)	0.300
DAS28-CRP	1.54 (1.36–1.90)	1.51 (1.25–1.93)	0.547
Risk factors of ISR			
Age (year)	68.0 (60.0–71.0)	65.5 (59.0–73.0)	0.820
DM, n (%)	13 (41.9)	5 (41.7)	0.987
Vessel disease, n (%)	1-vessel disease, 13 (41.9) 2-vessel disease, 13 (41.9) 3-vessel disease, 5 (17.2)	1-vessel disease, 2 (16.7) 2-vessel disease, 8 (66.7) 3-vessel disease, 2 (16.7)	0.305
Ostial lesion, n (%)	3 (9.7)	2 (16.7)	0.608
LAD involvement, n (%)	18 (58.1)	4 (33.3)	0.146
Multiple lesions, n (%)	10 (32.3)	7 (58.3)	0.168
Type of DES, n (%)	Zotarolimus, 9 (29.0) Everolimus, 8 (25.8) Sirolimus, 12 (38.7) Paclitaxel+Cilostazol, 1 (3.2) Biolimus, 1 (3.2)	Zotarolimus, 1 (8.3) Everolimus, 6 (50.0) Sirolimus, 3 (25.0) Paclitaxel+Cilostazol, 2 (16.7) Biolimus, 0 (0.0)	0.161
Diameter (mm)	3.00 (3.00–3.50)	3.00 (2.81–3.00)	0.243
Length (mm)	29.0 (24.0–48.0)	21.0 (15.0–30.3)	0.018
ISR, n (%)	0 (0.0)	4 (33.3)	0.004

incidence was similar, but the time to ISR occurrence was much longer. In the comparison of patients receiving MTX ($n=31$ vessel lesions) and those not receiving MTX ($n=12$ vessel lesions), the ISR incidence was significantly different [0/31 (0.0%) vs. 4/12 (33.3%), $p=0.004$].

Conclusions: ISR after DES implantation in RA patients occurs in a similar rate, but after a much longer period of time than in the general population. Administration of MTX in patients with RA might have potential benefit to prevent ISR after DES implantation.

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Disclosure of Interest: None declared

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THU0139 INCREASED HOMOCYSTEINE LEVEL FOR 7 YEARS IN PATIENTS WITH RHEUMATOID ARTHRITIS: TOMORROW STUDY

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Background: Osteoporosis is a disease in which not only bone density but also bone quality is low. Patients with rheumatoid arthritis (RA) are at higher proven risk of osteoporosis. Increased homocysteine (Hcy), one of the main markers of bone quality, is caused by insufficiency of folate or vitamin B. Elevation of Hcy inhibits physiological crosslink of collagen, which yields worse bone quality.

Objectives: In this study, we evaluated Hcy level as a bone quality marker in patients with RA for a period of 7 years and compared Hcy in RA patients with that in healthy volunteers (Vo).

Methods: We used the data for 7 years from a prospective cohort study (TOMORROW Study: UMIN000003876), which started in 2010 and compares data from RA patients with age- and sex-matched volunteer controls (Vo) recruited through mass media. Laboratory data were collected for all participants, including bone metabolic markers (urinary pentosidine, Hcy, collagen type 1 crosslinked N-telopeptide (NTX), and osteocalcin) and anthropometric parameters. Bone mineral density (BMD) of the lower leg was determined using whole-body dual-energy X-ray absorptiometry (DXA). Their parameters were compared with those of healthy controls, and multiple regression analysis was carried out