90.3% (140/155) in pSS, 92.3% (36/39) in MCTD, 93.4% (128/137) in PBC and 49.1% (28/57) in the AIH group. The positive rate of ANA in the health subjects was 11.5% (123/1073), see Figure 1. Totally, the positive rate of ANA in the AID group was 80.1% (2967/3704). The karyotypes were detected as homogeneous type (15.8% (586/3704)), nuclear particle type (49.7% (1840/3704)), cytoplasmic particle type (5.3% (196/3704)), mixed type (2.8% (91/3704)) which was mainly composed of nuclear membrane/cytoplasmic granules, more common in PBC. See Table 1. The karyotype of ANA in the health group was mainly homozygous (7.0% (75/1073)).

Group	n	ANA karyotypes							ANA negativity
		Homogeneous	particle	centromere	nucleolar	cytoplasmic granular	nuclear membrane	mixed	
SLE	2034	337 (16.6)*	1328 (65.3)	23 (1.1)	28 (1.4)	86 (4.2)	9 (0.4)	23 (1.1)	190 (9.3)
RA	973	186 (19.1)	255 (26.2)	16 (1.6)	10 (1.0)	49 (5.0)	1 (0.1)	0 (0.0)	8 (0.8)
SS	309	34 (11.0)	181 (58.6)	13 (4.2)	8 (2.6)	15 (4.9)	3 (1.0)	10 (3.2)	3 (1.0)
PSS	155	22 (14.2)	27 (17.4)	28 (18.1)	42 (27.1)	8 (5.2)	2 (1.3)	9 (5.8)	2 (1.3)
MCTD	39	3 (7.7)	30 (76.9)	1 (2.6)	0 (0.0)	2 (5.1)	0 (0.0)	0 (0.0)	0 (0.0)
PBC	137	1 (0.7)	6 (4.4)	17 (12.4)	2 (1.5)	36 (26.3)	15 (10.9)	46 (33.6)	5 (3.6)
AIH	57	3 (5.3)	13 (22.8)	7 (12.3)	0 (0.0)	0 (0.0)	0 (0.0)	3 (5.3)	2 (3.5)
AID	3704	586 (15.8)	1840 (49.7)	105 (2.8)	90 (2.4)	196 (5.3)	30 (0.8)	91 (2.5)	30 (0.8)
Healthy subjects	1073	14 (1.3)	75 (7.0)	3 (0.3)	10 (0.9)	23 (2.2)	1 (0.1)	2 (0.2)	3 (0.3)

Note: The mixed type contains more than two karyotypes, and other types include spindle, centrosome, Golgi, cytoplasmic fiber, etc.* refers to number (percentage).

Figure 1 ANA positive rate in difference AID patients and healthy subjects

Conclusion: There are differences in ANA positive rates among patients with different AIDs. Some mixed karyotype analyses may provide important evidence for the diagnosis of PBC and AIH. Healthy subjects can have partial ANA positivity which is predominantly homogenous.

Disclosure of Interests: None declared

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THU0611 SERUM HIGHLY-SENSITIVE CARDIAC TROPONIN-I AND ANTI-BETA2-GLYCOPROTEIN-1 IGA ANTIBODIES AT BASELINE PREDICT CORONARY PLAQUE PROGRESSION IN RHEUMATOID ARTHRITIS

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Background: We recently reported that serum levels of highly-sensitive cardiac troponin-I (hs-cTnI)- a specific structural myocardial biomarker-associated with occult coronary plaque presence, burden and long-term cardiovascular events in patients with rheumatoid arthritis (RA). We further demonstrated that presence of IgA antibodies against beta2-glycoprotein-1 (a-b2GPI-IgA, an apolipoprotein readily expressed in human atherosclerotic plaque) associated with baseline coronary artery calcium (CAC) scores and independently predicted CAC progression in patients with RA.

Objectives: We here explored whether baseline evaluation of both hs-cTnI and a-b2GPI-IgA better predicts CAC progression than either of them in isolation.

Methods: Ninety five participants with a baseline plaque evaluation by coronary computed tomography angiography (CCTA) underwent follow-up assessment within 6.9±0.3 years. Coronary artery calcium (CAC) was quantified by the Agatston method. Hs-cTnI and a-b2GPI IgA Ab were assessed on the day of baseline CCTA; the latter were reconfirmed 12 weeks later, if positive. CAC change was evaluated with the MESA

method as the natural logarithm plus 25 difference [(ln CAC_(follow-up)+ 25) – (ln CAC_(baseline)+ 25)]. Generalized linear models evaluated the effect of hs-cTnI, a-b2GPI-IgA and their interaction on CAC change. Models were adjusted for age, hypertension, waist-to height ratio (obesity indicator), cumulative inflammatory burden (time-averaged C-Reactive protein), total prednisone dose and duration of statin exposure from baseline to follow-up scan.

Results: Baseline hs-cTnI was higher in a-b2GPI-IgA positive compared to negative patients [median (IQR) of 1.9 (1.6-2.6) vs. 1.4 (1.3-1.7) respectively, p=0.043]. Hs-cTnI alone did not independently predict CAC change (β=0.214, p=0.132) in the multivariable model whereas a-b2GPI-IgA presence did (β=0.454, p=0.003). There was a significant interaction between hs-cTnI and a-b2GPI-IgA on CAC progression (Wald Chi-square=4.19, p=0.041); high hs-cTnI (>1.5pg/ml) predicted significantly greater CAC change in a-b2GPI-IgA positive patients but not in negative ones [estimated marginal mean difference (IQR)=0.36 (0.12-0.59), p=0.003] and figure 1].

Conclusion: Baseline hs-cTnI in isolation is not predictive of CAC progression in patients with RA; however, in the context of a-b2GPI-IgA presence, high hs-cTnI independently predicts significant increase in coronary atherosclerosis burden.

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THU0612 KNEE JOINT PAIN IN AN ELDERLY, HEALTHY POPULATION IS ASSOCIATED WITH INFLAMMATORY ARTICULAR AND ENTHESEAL CHANGES DETECTED BY ULTRASOUND

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Background: Knee pain is highly prevalent in elderly and influences quality of life. Pathogenesis of knee pain in such population is commonly related to osteoarthritis (OA). It is yet unclear however, which pathological lesions in the knee contribute most to symptomatic disease.

Objectives: To define the articular and enthesal inflammatory and structural lesions that contribute to knee pain in an elderly healthy population using Power Doppler ultrasound (PDUS).

Methods: All subjects (≥65 years) were part of the prospective long-term population-based Bruneck Study (1) and received a clinical and ultrasound investigation of both knees. Ultrasound was performed by an independent investigator unaware of clinical symptoms. Knee entheses (quadriceps insertion, proximal and distal patella insertion) and joint cavity were assessed. Demographic variables were recorded in all individuals. Pain sensation during knee palpation was collected and participants were asked to complete a standardized pain questionnaire for knee joints (Knee injury and osteoarthritis outcome score [KOOS], question P1-P9) (2). Joint changes (synovial hypertrophy, power doppler (PD) signal, joint effusion, baker cysts, osteophytes) were assessed using a GE Logic E

device. Enthesial changes such as positive PD, calcification, enthesiophytes as well as hypoechogenicity were also recorded. All ultrasound abnormalities were scored using validated OMERACT scores. The prevalence of observed changes was compared between subjects without palpation pain and participants with pain. By summing up the articular and enthesial changes a total score was calculated and correlated with the KOOS pain values.

Results: A total of 303 (Male 154; Female 149) aged participants (age: 75.3±6.9 years) underwent ultrasound examination of both knees. Knee tenderness was found by 30/149 (20.1%) women and 15/154 (9.7%) men. Ultrasound effusion ($p=0.010$), synovial hypertrophy ($p=0.001$), PD synovial activity ($p=0.003$) and osteophytes ($p=0.001$) were more prevalent in women with knee tenderness than without. In men, knee tenderness was associated PD synovial activity ($p=0.0014$), and enthesial calcification ($p=0.020$). Presence of more than 1 ultrasound pathology was associated with lower KOOS pain values, indicating higher impact on symptoms. This was observed in both women ($r=-0.285$, $p=0.021$) and men ($r=-0.298$, $p=0.008$).

Conclusion: In an elderly healthy population, knee pain is associated with the presence of joint and enthesial inflammatory lesions.

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THU0613

MRI AND ULTRASOUND (US) ASSESSMENT OF TEMPORO-MANDIBULAR JOINT (TMJ) INVOLVEMENT IN ADULT PATIENTS WITH DIAGNOSIS OF JUVENILE IDIOPATHIC ARTHRITIS (JIA) AND NON-JIA CHRONIC INFLAMMATORY ARTHROPATHIES

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Background: TMJ is involved in about 50% of JIA cases, often bilateral and asymptomatic in up to 71% of cases¹, leading to higher rate of dysfunction and anatomical abnormalities (as retrognathia, facial asymmetry, limited mouth opening, pain)². To date MRI is the gold standard to study both TMJ inflammation and damage³ but US is a widely used diagnostic imaging tool in rheumatic patients and may be a cheaper and more accessible alternative.

Objectives: To investigate the prevalence of TMJ involvement in young adults with JIA and young adults with non-JIA inflammatory rheumatism, comparing MRI with US.

Methods: Patients were recruited prospectively in 2 clinical centers. Inclusion criteria were: patients <35 years diagnosed with JIA who had undergone transition from the pediatric to the adult rheumatologist, and patients diagnosed with non-JIA inflammatory arthropathies. All patients underwent clinical examination for TMJs (tenderness to palpation, swelling, signs of damage such as joint crepitations, lateral deviation, retrognathia and decreased mouth opening) and MRI of the TMJs to detect inflammation (bone marrow edema, effusion, synovial thickening) or damage (condylar flattening, erosions, disk abnormalities). Blindly to MRI, US was performed to evaluate presence of inflammation (effusion and/or joint capsule abnormalities) or damage (erosion). MRIs and US with either inflammation or damage were considered pathological. Demographic and clinical characteristics were described using frequency or median and interquartile range (IQR), depending on the distribution of the variable. Differences

between groups were analyzed using the Mann-Whitney U test, the χ^2 test and Cohen's correlation index when appropriate. US sensibility (Se) and specificity (Sp) were also calculated.

Results: 11 patients were included in the JIA group and 7 patients in the non-JIA group. Patients' and TMJs involvement characteristics were reported in Table 1.

	JIA n 11	Non-JIA n 7
Sex F, n (%)	8 (72.7%)	4 (57.1%)
Age (ys) at diagnosis, median (IQR)	10 (5-12)	23 (22-26)
Current age (ys), median (IQR)	22.3 (20.3 – 25.1)	30.1 (28.8-32.5)
Disease duration (ys), median (IQR)	13.2 (11.9-16.1)	5.6 (5.3-7.8)
TMJs tenderness, n (%)	1 (9.1%)	2 (28.6%)
TMJs swelling, n (%)	0 (0%)	0 (0%)
TMJ damage, n (%)	7 (63.6%)	3 (42.9%)

Table 1. MRI and US results are collected in Table 2.

	JIA TMJs n 22	Non-JIA TMJs n 14
Inflammation on MRI, n (%)	11 (50.0%)	5 (35.7%)
Joint damage on MRI, n (%)	16 (72.7%)	9 (64.2%)
Pathological MRI, n (%)	16 (72.7%)	9 (64.2%)
Inflammation on US, n (%)	2 (9.1%)	0 (0%)
Joint damage on US, n (%)	10 (45.4%)	4 (28.6%)
Pathological US, n (%)	11 (50.0%)	4 (28.6%)

Table 2. Twelve out of 36 TMJs presented with damage on both MRI and US, 2 TMJs had damage on US but not on MRI and 13 TMJs had damage on MRI only; the concordance was discrete ($k = 0.23$ (0-0.48)). Only 2 TMJs had inflammation on US, of which only one was confirmed by MRI. 12 TMJs were pathological on both MRI and US, 3 TMJs were pathological on US only and 13 TMJs on MRI only; the concordance was poor ($k = 0.17$ (0-0.43)), Se=48% (95%CI 0.28,0.68), Sp=73% (95%CI 0.47,0.99).

Conclusion: The concordance between MRI and ultrasound is not optimal, and existing TMJ US protocols are based on children. Further studies are needed to develop a suitable US protocol to detect TMJ involvement in adult patients as a screening tool.

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THU0614

FINGER EXTENSOR TENDON INVOLVEMENT IS FREQUENT IN EARLY RHEUMATOID ARTHRITIS

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Background: Finger extensor tendon (FET) involvement at ultrasound examination (US) was previously described in patients suffering from early and established psoriatic arthritis¹. The reliability of the US measure of FET was as least as good as for synovitis². The involvement of the FET in patients suffering from rheumatoid arthritis remains controversial.

Objectives: To assess the involvement of FET in early rheumatoid arthritis (ERA) patients and in asymptomatic subjects (CTR).

Methods: Inclusion criteria for ERA patients were: less than 6 months since the ERA diagnosis; age >18 years; without DMARD treatment or oral glucocorticoid treatment. Inclusion criteria for CTRL subjects were: age >18 years; no pain in hands and fingers (VAS pain =0/100); no known rheumatic disease such a systemic diseases, rheumatoid, psoriatic arthritis, spondyloarthritis, hand osteoarthritis, gout, chondrocalcinosis; no psoriasis, no inflammatory bowel diseases. US assessments were performed blindly to the clinical and laboratory data. FET were assessed in longitudinal and in transverse view at the metacarpo phalangeal joint (MCP) and proximal phalangeal joint (PIP) level both in grey-scale (GS), power Doppler (PD) and in color Doppler (CD) mode. In addition the following joints were assessed for the presence and grade (0-3 according to OMERACT definitions) for both GS and PD synovitis: wrists, ankles, metatarsophalangeal (MTP) (2-5) and MCP (1-5) joints.