Conclusion: The CT characteristics of SJJs from patients with PsA were similar to those of age- and sex-matched controls, but with a higher prevalence of erosions. Structural lesions of the SJJs were found in nearly one PsA patient out of three.

REFERENCES:

Disclosure of Interests: None declared

AB1349

CORRELATION OF CHRONIC INFLAMMATION MARKERS WITH ULTRASOUND SIGNS OF ATHEROSCLEROTIC HEART DISEASE AND BRACHIOCEPHALIC ARTERIES LESIONS IN RHEUMATOID ARTHRITIS

N. Aleksandrova1, A. Aleksandrov2,3, N. Nikitina1, V. Aleksandrova1,2, Federal State Budgetary Institution «Research Institute of Clinical and Experimental Rheumatology Named After A.B. Zborovsky», Department of Functional Research Methods, Volgograd, Russian Federation;1 Volgograd State Medical University, Department of Hospital Therapy, Volgograd, Russian Federation

Background: Clinical and experimental data confirm the role of both systemic anti-inflammatory and proinflammatory cytokines in the development of atherosclerosis and increasing cardiovascular risk in patients with rheumatoid arthritis (RA) against the background of severe immunological disorders.

Objectives: To study the severity of ultrasound signs of atherosclerotic lesions of brachiocephalic arteries and heart valve apparatus in patients with rheumatoid arthritis (RA).

Methods: 57 patients with RA (50 women and 7 men; mean age 50,45±10,12 years old; mean duration of disease 9,2±6,8 years; DAS28 activity: low - 3,5%, medium - 86%, high - 10,5%) were examined. Laboratory examination included determination of serum IgG-RF, CRP, antibodies to cyclic citrullinated peptide (ACCP), antibodies to modified citrullinated vimentin (MCV), total antinuclear antibodies (ANA), and levels of proinflammatory cytokines (IL-1, IL-6, TNF-α, angiotensin-like proteins types 2, 3, and 4). The presence of atherosclerosis plaques and artery stenosis was determined using the method of transthoracic echocardiography. Cardiac ultrasound examination was performed according to the traditional technique on an Accuvix V10 ultrasound diagnostic system (Samsung Medison, South Korea) equipped with a multifrequency microconvex transducer with a frequency of 2-4 MHz. All patients underwent duplex scanning of brachiocephalic arteries (BCA) with assessment of the severity of atherosclerotic changes (A0 - absence of BCA atherosclerosis, A1 - isolated thickening of intima-media complex, A2 - manifestation of non-stenotic BCA atherosclerosis, A3 - presence of atherosclerotic plaques and artery stenosis as manifestation of stenotic BCA atherosclerosis). The following gradation was used to estimate the degree of cardiac valve calcification: 0 - no calcification, 1st degree - unexpressed calcification, 2nd degree - moderate calcification, 3rd degree - expressed calcification of cardiac valves.

Results: Signs of cardiovascular system lesions (pericarditis, heart valve lesions, cardiomyopathies, cardiac conduction pathway lesions, myocardiitis, endocarditis, coronary arteritis etc.) were diagnosed in 28 (49.1%) RA patients. Heart valve dysfunction was manifested by mitral valve (MV) and/ or aortic valve (AV) insufficiency in the majority of cases. In RA patients, ultrasound signs of cardiac valve calcification occurred in 40.4% (23/57) of cases; there was a high prevalence of aortic valve calcification of varying severity (19/23, 82.6%) and less detectable mitral valve calcification (12/23, 52.17%); patients with grade II-III cardiac valve calcification predominated (16/23, 69.6%); 5 patients (21.7%) had combined AV and MV lesions. In 25 (43.8%) patients with RA the signs of atherosclerosis of brachiocephalic arteries were determined: in 19 (33.3%) - non-stenotic (A1), in 6 (10.5%) - stenotic atherosclerosis (A3). No statistically significant correlations were found between changes of cardiac valve apparatus, BCA lesions and main clinical characteristics of RA (disease activity, erosions, RF and ACCP positivity). Increased levels of ANGPTL2 (2.4±1.6, p=0.032) were observed in the group of RA patients with cardiac valve lesions, and ANA (2.4±2.91, p=0.049) and elevated IL-6 (2.4±4.28, p=0.039) were detected more frequently in patients with signs of atherosclerotic lesions of BCA. The presence of autoimmune chronic inflammatory process is an independent sign of premature atherosclerosis development and causes the highest risk of atherosclerotic lesion of BCA and accelerates the processes of cardiac valve calcification in RA patients.

Disclosure of Interests: None declared

AB1350

CAN DIFFUSION-WEIGHTED MRI REPLACE INTRAVENOUS GADOLINIUM CONTRAST-ENHANCED MRI FOR ASSESSMENT OF SYNOVITIS?

J. Møllenbach Møller1, K. L. Gandrup3, M. Østergaard2, D. Giinatsi3, O. Madsen4, K. Herslev-Petersen5,6, S. Møller-Bisgaard1.1 Copenhagen University Hospital Herlev - Gentofte, Radiology, Herlev, Denmark; 2University Hospital of Copenhagen, Rigshospitalet, Glostrup, Copenhagen Center for Arthritis Research, Center for Rheumatology and Spine Diseases, Glostrup, Denmark; 3Skaraborg Hospital, Department of Rheumatology, Skövde, Denmark; 4University Hospital of Copenhagen, Rigshospitalet, Gentofte, 5Copenhagen Center for Arthritis Research, Center for Rheumatology and Spine Diseases, Gentofte, Denmark; 5University Hospital of Copenhagen, Rigshospitalet, Glostrup, Copenhagen Center for Arthritis Research, Center for Rheumatology and Spine Diseases, Gentofte, Denmark.

Background: In clinical trials of rheumatoid arthritis (RA) patients, intravenous gadolinium contrast injection is the gold standard method for MRI assessment of synovitis, e.g. by the OMERACT RA MRI Scoring method (RAMRIS). It has been shown that diffusion-weighted MRI (DW-MRI) allows visualization of synovitis.1

Objectives: To establish a method for measuring MRI-derived apparent diffusion coefficient (ADC) from DW-MRI and to test its correlation with RAMRIS synovitis scoring.

Methods: MRI including diffusion-weighting of the dominant hand was performed in a cohort of RA patients in clinical remission (disease activity score in 28 joints-C-reactive protein [DAS28-CRP] <3.2 and no swollen joints). ADC measurements of the synovium were assessed in 7 areas (3 wrist joint areas and 4 metacarpophalangeal (MCP) joint areas), similar to the RAMRIS. Intra-observer agreement for the ADC reading was determined using the intraclass correlation coefficient (ICC). Spearman's rho (ρ) was calculated for the correlation of ADC with RAMRIS Synovitis. Differences in mean ADC between the individual RAMRIS synovitis grades were examined using ANOVA with Bonferroni correction for multiple tests.

Results: In 63 patients (67% females, age mean 61.0 years (range 36-78 years), disease duration 11.9 years, 0-59 years), DAS28-CRP 2.1 (1.6-3.0) the total RAMRIS synovitis was mean 5.8 (range 0-18). The mean ADC was 0.98±0.3 mm²/s (0.1-2.80). Correlations between RAMRIS synovitis and ADC in the 7 joint areas and mean differences in ADC between RAMRIS synovitis grades are presented in the Table 1. When all 7 joints were pooled the mean ADC and RAMRIS synovitis were moderately positively correlated, ρ=0.49; p<0.01. Statistically significant differences (p<0.01) in mean ADC were observed between all RAMRIS synovitis grades (0 vs 1, 0 vs 2, etc) except for the difference between grade 2 and 3. Good intra-observer (ICC = 0.62 (95%CI 0.49-0.72)) was found.

Conclusion: ADC, determined from DW-MRI, may be used to grade synovitis without the use of gadolinium contrast injection.

REFERENCES:

Disclosure of Interests: Jakob Møllenbach Møller: None declared, Karen Lind Gandrup: None declared, Mikkel Østergaard2, D. Giinatsi3, O. Madsen4, K. Herslev-Petersen5,6, S. Møller-Bisgaard1.1 Copenhagen University Hospital Herlev - Gentofte, Radiology, Herlev, Denmark; 2University Hospital of Copenhagen, Rigshospitalet, Glostrup, Copenhagen Center for Arthritis Research, Center for Rheumatology and Spine Diseases, Glostrup, Denmark; 3Skaraborg Hospital, Department of Rheumatology, Skövde, Denmark; 4University Hospital of Copenhagen, Rigshospitalet, Gentofte, 5Copenhagen Center for Arthritis Research, Center for Rheumatology and Spine Diseases, Gentofte, Denmark; 5University Hospital of Copenhagen, Rigshospitalet, Glostrup, Copenhagen Center for Arthritis Research, Center for Rheumatology and Spine Diseases, Gentofte, Denmark.

Disclosure of Interests: None declared

AB1350

CAN DIFFUSION-WEIGHTED MRI REPLACE INTRAVENOUS GADOLINIUM CONTRAST-ENHANCED MRI FOR ASSESSMENT OF SYNOVITIS?