Table 1. Comparison of MRI findings between axSpA and non-SpA patients at different age groups

Age subgroup	Diagnosis	Mean number of SIJ quadrants			Proportion of patients with...		
		BME	FL	Erosion	BME	FL	Erosion
until 29 years	axSpA (n=46)	6.0±3.7	6.8±5.7	4.4±3.8	95.7%	80.4%	89.1%
	non-SpA (n=25)	1.4±1.5	5.4±4.4	0.8±1.5	64.0%	76.0%	48.0%
	p-value	<0.001	0.311	<0.001	<0.001	0.664	<0.001
30-39 years	axSpA (n=50)	5.0±4.1	8.7±5.9	4.6±3.7	92.0%	96.0%	82.0%
	non-SpA (n=26)	1.0±1.3	9.5±6.0	1.1±1.3	46.2%	92.3%	53.8%
	p-value	<0.001	0.485	<0.001	<0.001	0.23	0.01
40-49 years	axSpA (n=47)	4.2±3.7	11.3±6.0	4.6±3.7	85.1%	97.9%	87.2%
	non-SpA (n=35)	1.4±2.9	10.3±5.8	1.6±2.4	34.3%	97.1%	62.9%
	p-value	<0.001	0.413	<0.001	<0.001	0.833	0.010
≥50 years	axSpA (n=32)	5.2±4.9	16.4±5.4	5.5±4.1	87.5%	100.0%	87.5%
	non-SpA (n=48)	1.9±2.1	13.4±4.5	2.0±2.0	66.7%	100%	72.9%
	p-value	0.001	0.006	<0.001	0.036	1.000	0.121

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POS0039 MRI LESIONS IN SPA: A COMPARISON WITH AGE AND SEX MATCHED PARTICIPANTS WITH NON-INFLAMMATORY BACK PAIN

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Background: Magnetic resonance imaging (MRI) is becoming increasingly important in axial spondyloarthritis (SpA) due to its unique role in early diagnosis, classification, and monitoring of disease (1, 2). It is the only disease assessment tool that has been validated with histological inflammatory cellularity in tissue biopsy of the sacroiliac (SI) joint (3). However, many MRI lesions are not exclusive to axial SpA and may occur in other conditions such as infection, degeneration and malignancy. Further characterization of these lesions may guide more targeted therapies.

Objectives: The objective of this study was to describe, investigate associated factors, and to compare individual MRI lesions with age and sex matched controls.

Methods: This was a cross-sectional observational study of MRI lesions of 431 participants with axial SpA compared with 53 age and sex matched participants with non-inflammatory back pain. Individual lesions identified included: discovertebral lesions (DVL), facet joint lesions, costovertebral joint lesions, corner inflammatory lesions (CIL), and fatty corner lesions (FCL). Associated factors of the lesions were determined by regression analyses.

Results: Compared to the control group, participants with axial SpA had more costovertebral lesions (12.5% vs 1.9%; $p=0.02$), CIL (46.6% vs 15.1%; $p=0.03$), and FCL (55.5% vs 39.6%; $p=0.03$). Multivariate regression showed that age ($OR=1.02$; $p=0.03$), regular alcohol use ($OR=0.40$; $p=0.04$) and radiographic axial SpA ($OR=1.89$; $p=0.01$) were associated with DVL; Chinese ethnicity ($OR=0.06$; $p=0.01$) and radiographic axial SpA ($OR=3.63$; $p=0.01$) were associated with facet joint lesion; radiographic axial SpA ($OR=4.26$; $p<0.001$) was associated with costovertebral joint lesion; male gender ($\beta=1.10$; $p=0.01$), HLA B27 ($\beta=1.02$; $p=0.02$), and radiographic axial SpA ($\beta=1.05$; $p=0.01$) were associated with CIL; age ($\beta=0.10$; $p<0.01$), male gender ($\beta=1.96$; $p=0.01$), body weight ($\beta=0.11$; $p<0.01$), HLA B27 ($\beta=3.23$; $p<0.001$), and radiographic axial SpA ($\beta=1.77$; $p=0.02$) were associated with FCL.

Conclusion: The individual MRI lesions more specific to axial SpA when compared to non-inflammatory back pain were costovertebral joint lesions, CIL, and FCL.

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Molecular and structural changes of bone turnover during inflammatory disease

POS0040 THE DECREASE IN BONE MINERAL DENSITY DEPENDS ON THE CONCENTRATIONS OF ANGIOPOIETIN-LIKE PROTEIN TYPE 4 IN PATIENTS WITH RHEUMATOID ARTHRITIS

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Background: New serological markers that can serve as objective indicators of osteoporotic changes in patients with rheumatoid arthritis (RA) are being currently searched [1, 2, 3, 4, 5].

Objectives: To reveal the connection between the concentrations of serum angiotensin-like protein type 4 (ANGPTL4) and the decrease in bone mineral density (BMD) in patients with RA.

Methods: 114 patients with reliable RA (90.4% of women, 9.6% of men) aged 21 to 80 years (mean age 55.4 ± 11.2 years old, disease duration - 11.18 ± 9.03 years, positive for rheumatoid factor (RF-IgM) - 63.2%, positive for anti-citrullinated protein antibody (ACPA) - 59.7%) were examined using a bone X-ray densitometer LUNAR DPX (GE, USA). Patients with an advanced clinical stage - 49%, moderate activity according to DAS28 - 58.8%, II-III radiological stage - 85.1% and functional class II - 64.9% prevailed. ANGPTL4 measurement in blood serum was carried out by enzyme immunoassay using a commercial test system "RayBio Human ANGPTL4 ELISA Kit" (RayBiotech, USA). ESR, RF, as well as C-reactive protein (CRP), ACPA, and antibodies to modified vimentin (anti-MCV) in an ELISA test were determined in all RA patients.

Results: ANGPTL4 indices in RA patients correlated with the CRP level ($r = 0.34$, $p = 0.001$) and the DAS-28 ($r = 0.29$, $p = 0.002$). There was no correlation between the level of ANGPTL4 and the intake of glucocorticoids, both at the time of the study ($p = 0.678$) and with their long-term (more than 3 months) use ($p = 0.097$). There was a negative correlation of weak strength between ANGPTL4 and the dose of non-steroidal anti-inflammatory drugs ($r = -0.21$, $p = 0.035$). There was no correlation between ACPA, anti-MCV, and ANGPTL4 levels ($p > 0.1$ and $p = 0.084$). A direct correlation was found between the level of ANGPTL4 and the presence of osteopenia in RA patients ($r = 0.43$, $p = 0.036$), as well as a negative correlation between ANGPTL4 and bone mineral density in the spine (BMD L_{1-4} , $r = -0.631$, $p < 0.001$), but not in the femur ($p > 0.05$). Densitometry data also allowed to establish a negative correlation between low values of the T-criterion and increased titers of anti-MCV ($r = -0.51$, $p = 0.029$), but not ACPA ($p = 0.276$). It has previously been noted that anti-MCV are able to activate osteoclasts with a consequent decrease in periarthral BMD.

Conclusion: The absence of a relationship between anti-MCV and the level of ANGPTL4 may indicate different mechanisms of osteoporosis development and localization of osteoporotic changes in groups of anti-MCV or ANGPTL4 positive patients with RA.

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