Table 1. Comparative characteristics of Group 1 and Group 2 AS patients.

	Group 1 (n=220)	Group 2 (n=9)	p
Mean age, M±s, y.	35,1±9,5	40,1±8,6	>0.05
Mean age at the onset, M±s, y.	29,9±9,6	13,4±7,5	<0.05
Mean disease duration, M±s, y.	6,9±5,6	26,3±6,5	<0.05
Men, n (%)	162 (73,6%)	9 (100%)	<0.05
HLA B27, n (%)	202 (91,8%)	9 (100%)	>0.05
Arthritis, n (%)	182 (82,7%)	9 (100%)	<0.05
Coxitis, n (%)	119 (54,0%)	9 (100%)	<0.05
Enthesitis, n (%)	105 (47,7%)	7 (78%)	>0.05
Uveitis, n (%)	52 (23,6%)	4 (44,4%)	>0.05
IBD, n (%)	5 (2,2%)	0	>0.05
Psoriasis, n (%)	24 (10,9%)	0	>0.05

Conclusion: Patients with AS and secondary AA amyloidosis are predominantly of male gender, who usually get sick in childhood, have 100% HLA-B27 positivity, peripheral arthritis, and coxitis.

Disclosure of Interests: None declared

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AB0720 SOLUBLE TRANSFERRIN RECEPTOR IN DIAGNOSIS OF IRON DEFICIENCY ANEMIA IN PATIENTS WITH SPONDYLOARTHRITIS

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Background: Anemia is a frequent hematological disorder in patients with rheumatic diseases. The main pathogenetic variants of anemia are anemia of chronic disease (ACD), iron deficiency anemia (IDA), and anemia of chronic disease with iron deficiency (ACD/IDA). The presence of systemic inflammation hinders to diagnose absolute iron deficiency, because standard tests of iron status are affected by it. Soluble transferrin receptors (sTfR) measurement and the calculation of the sTfR/ log ferritin index (sTfR index) are recommended, but data about diagnostically significant levels of these indicators in patients with spondyloarthritis (SpA) is currently limited.

Objectives: To assess the diagnostic significance of sTfR and the sTfR index for detecting absolute iron deficiency in patients with SpA and anemia.

Methods: Complete blood count, standard iron metabolism parameters, C-reactive protein (CRP) and erythrocyte sedimentation rate (ESR) were evaluated in 68 patients with SpA. Serum concentration of sTfR was measured with enzyme-linked immunosorbent assay (ELISA) using sTfR ELISA kit («Monobind Inc., USA). The sTfR index was calculated by the formula sTfR/log₁₀ ferritin. Anemia was defined using the World Health Organization criteria. Depending on the serum ferritin concentration, transferrin saturation, and CRP level, ACD, IDA, or combined anemia (ACD/IDA) were diagnosed. Disease activity was determined by the BASDAI (Bath Ankylosing Spondylitis Disease Activity Index) and ASDAS-CRP (Ankylosing Spondylitis Disease Activity Score based on CRP) scales. Receiver operating characteristic (ROC) analysis was performed with MedCalc.

Results: Anemia was found in 48 of 68 (70,6%) SpA patients. 16 (33,3%) patients had ACD and 32 (66,7%) had ACD/IDA. Hemoglobin level in ACD was 118 [112; 123] g/L, in ACD/IDA – 110 [106; 120] g/L, in non-anemic patients – 133 [129; 145] g/L (p<0.001 for all groups). CRP and ESR values were higher in ACD compared to ACD/IDA patients (31.5 [20.3; 46.4] mg/L and 27.0 [16.0; 35.5] mm/h versus 9.8 [5.6; 16.9] mg/L and 15.5 [12.0; 22.5] mm/h, respectively [p=0.00 and p=0.038]). No statistically significant difference was found between all groups in BASDAI and ASDAS-CRP scores.

ACD/IDA patients had significant increases in serum sTfR levels (1.7 [1.4; 2.2] mg/L) compared to ACD (1.5 [1.1; 1.7] mg/L, p=0.04) and to non-anemic patients (1.3 [1.1; 1.6] mg/L, p=0.003). The sTfR index was significantly higher in ACD/IDA (0.93 [0.82; 1.24]) compared to patients with ACD (0.64 [0.48; 0.75], p<0.001) and without anemia (0.67 [0.56; 0.81], p<0.001).

The areas under the curves (AUCs) for distinguishing between ACD/IDA and ACD were 0.85 for sTfR index (p<0.001), 0.72 for sTfR (p<0.001). The sTfR index (cutoff >0.83) and sTfR (cutoff >1.39 mg/L) had sensitivities of 75% and 53%, and specificities of 83% and 81%, respectively.

Conclusion: According to obtained data, serum concentration of sTfR >1.39 mg/L and the sTfR index >0.83 point to the presence of iron deficiency component in the structure of anemic syndrome in patients with SpA.

References: Management of patients with SpA requires constant monitoring of side effects of therapy, in particular induced by the non-steroidal anti-inflammatory drugs. Use of sTfR and the sTfR index can improve the detection of IDA. A significant advantage of these indicators is their independence from systemic inflammation.

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AB0721

OCULAR INVOLVEMENT IN INFLAMMATORY BOWEL DISEASE. STUDY OF 1442 PATIENTS FROM A SINGLE UNIVERSITY CENTER.

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Background: Inflammatory bowel disease (IBD), which includes Crohn's disease (CD), and Ulcerative colitis (UC) are related to Spondyloarthritis (SpA). Ocular manifestations (OM) are well-established in SpA but not in IBD. It has been classically reported that whereas uveitis with SpA is predominantly anterior, unilateral, sudden, and limited; in IBD it is bilateral, posterior, insidious, and chronic (Lyons & Rosenbaum JT. Arch Ophthalmol 1997; 115:61-4).

Objectives: In a large unselected series of IBD, we study the OM and assess: a) epidemiological, clinical features, b) the relationship with extraintestinal manifestations.

Methods: Study of all consecutive patients from a single University Hospital during the last 40 years with: a) IBD (CD and UC), and b) OM: uveitis and scleral pathology diagnosed by clinical features and slit-lamp.

Results: OM were present in 42 (2.9%) (25 women/17 men) (84 eyes) of 1442 IBD patients; OM included the uveitis group (UG) (n=23; 1.6%) and the scleral pathology group (SG) (n=19, 1.32%) (TABLE).

TABLE.

	Uveitis (n= 23)	Epi/scleritis (n=19)	p
DEMOGRAPHIC PARAMETERS			
Sex, n (%)	6 ♂ / 17 ♀	11 ♂ / 8 ♀	p= 0.04*
Age at diagnosis (years) mean ± SD	49.13±14.64	47.63±12.48	p= 0.415
INTESTINAL AFFECTION			
CD, n (%)	12 (52.17)	16 (84.21)	p= 0.02*
UC, n (%)	11 (47.83)	3 (15.74)	p= 0.16
EXTRAINTestinal AFFECTION			
Cutaneous manifestations			
•Erythema nodosum, n (%)	6 (26.09)	2 (10.53)	p= 0.30
•Pyoderma gangrenosum, n (%)	1 (4.35)	0 (0)	p= 0.92
•Psoriasis, n (%)	1 (4.35)	4 (21.01)	p= 0.23
Joint involvement	10 (43.50)	6 (31.60)	p= 0.36
•Psoriatic arthritis, n (%)	1 (4.35)	3 (15.80)	p= 0.47
•Enteropathic Spondyloarthritis, n (%)	6 (26.09)	3 (15.80)	p= 0.66
•Ankylosing Spondylitis, n (%)	3 (13.04)	0 (0)	p= 0.28
Digestive manifestations			
•NASH, n(%)	4 (17.39)	6 (31.58)	p= 0.28

*p value < 0.05. SD: standard deviation; CD: Crohn's disease; UC: ulcerative colitis; NASH: non-alcoholic steatohepatitis.

The most common pattern in SG was episcleritis (n=16; 84.21%) and scleritis (n=3). In UG, uveitis was typically anterior (n=18; 78.3%), unilateral (n=19; 82.6%), sudden (n=19; 82.6%), and limited (n=12; 52.2%).

The comparative study between SG vs UG showed in UG a significant predominance of women and UC. Also, a non-significative higher frequency in Pyoderma gangrenosum, erythema nodosum and joint involvement was observed in UG.

After a mean follow-up of 15.2±9.97 years, extraintestinal manifestations were observed in 100% of patients, being articular forms (n=16; 38.10%) the most common type. In addition, joint/axial flare is more related to the presence of uveitis (p=0.038).

Conclusion: Both uveitis and episcleritis are equally frequent OM in IBD. Although uveitis is more infrequent in IBD than in SpA, it is also anterior, unilateral, sudden and limited in contrast with published data from selected series.

References:

[1] Lyons & Rosenbaum JT. Arch Ophthalmol 1997; 115:61-4

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AB0722

LOSS OF GLYCOSAMINOGLYCANS OF LUMBAR INTERVERTEBRAL DISCS IN PATIENTS WITH ANKYLOSING SPONDYLITIS

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Background: To evaluate the glycosaminoglycan (GAG) content of lumbar intervertebral discs (IVD) in patients with ankylosing spondylitis (AS) using GAG chemical exchange saturation transfer (gagCEST).

Objectives: Does local GAG content in non-degenerative IVDs measured by gagCEST MRI differs between AS patients and HC?

Methods: 195 lumbar IVD of 15 patients with AS (mean age 50 ± 10 years) and 25 healthy control patients (HC) were prospectively examined with 3 T magnetic resonance imaging (MRI). MRI protocol contained morphological T2 weighted (T2w) images to grade IVD according to the Pfirrmann classification and biochemical imaging with gagCEST to calculate a region of interest (ROI) of the nucleus pulposus (NP) and annulus fibrosus (AF). Prior to statistical testing of gagCEST effects in patients and HC, IVD were classified according to Pfirrmann.

Results: Significantly lower gagCEST values of NP and AF were found in non-degenerative IVD (Pfirrmann 1 and 2) of AS patients compared to HC (NP: $1.88 \% \pm 1.21\%$ vs. $3.38 \% \pm 1.71\%$; $p < 0.01$; confidence interval (CI): $0.89\%/2.11\%$. AF: $1.11 \% \pm 1.07 \%$ vs. $1.96 \% \pm 1.23 \%$; $p < 0.01$; CI $0.39\%/1.3\%$).

Conclusion: GagCEST analysis of morphologically non-degenerative IVDs in T2w images showed significantly lower GAG values in patients with AS in the NP and AF compared to HC. Our results potentially allow for the detection of GAG loss prior to morphological degeneration.

Figure 1. Comparison of morphological T2 weighted (T2w) images to grade IVD according to the Pfirrmann classification and biochemical imaging with gagCEST between HC (A and C) and AS patients (B and D) showing significant lower GAG levels in AS patients.

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AB0723

SERUM LEVELS OF TRANSFORMING GROWTH FACTOR BETA1 AND SCLEROSTIN AND THEIR CORRELATIONS WITH MRI AND LABORATORY FINDINGS IN PATIENTS WITH SPONDYLOARTHRITIS

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Background: There is an actual demand for searching the biomarkers which could reflect disease activity and MRI changes in sacroiliac joints (SIJ) and spine in patients with spondyloarthritis (SpA). Transforming growth factor-beta 1 (TGF- β 1) is a cytokine that suppresses inflammatory cytokines but could augment inflammation [1]. A very recent study suggests a possible role of sclerostin (Scl) in the identification of SpA patients, but further studies are needed to prove its role as a disease activity and progression biomarker [2]. In general, the role of these biomarkers in SpA patients remains unknown due to controversial data about their levels in patients with SpA in comparison with healthy subjects and correlations with SpA activity.

Objectives: This study was designed to determine TGF- β 1 and Scl serum levels and its correlations with changes in spine and SIJ on MRI imaging, laboratory parameters and indices of disease activity and functional status in SpA patients.

Methods: 102 patients with SpA (mean age ($M \pm \sigma$) - 38.1 ± 11.2 , 67 males and 35 females) and 15 healthy age- and gender-matched controls were included in the study. C-reactive protein (CRP, mg/l) and erythrocyte sedimentation rate (ESR, mm/hr) were evaluated as inflammatory markers. Disease activity and functional impairment were moderate to high, mean Ankylosing Spondylitis Disease Activity Score (ASDAS-CRP) was 3.07 ± 1.07 , Bath Ankylosing Spondylitis Disease Activity Index (BASDAI, mm) - 45.3 ± 18.6 , Bath Ankylosing Spondylitis Functional Index (BASFI, mm) - 31.7 ± 22.9 .

Serum levels of TGF- β 1 (pmol/l) and Scl (pmol/l) were measured by ELISA. Spine MRI images were assessed for active inflammatory lesions using Berlin method (0-69, n=19). Active and chronic MRI changes in SIJ were scored by Spondyloarthritis Research Consortium of Canada (SPARCC) score (0-72) and Danish scoring method (0-48), respectively (n=67). Spearman correlation coefficient and Student t-test were used for statistical analysis.

Results: Mean value of laboratory and MRI parameters were: CRP - 20.9 ± 31.5 , ESR - 27.1 ± 22.1 , Berlin score was 3.93 ± 3.87 , SPARCC - 22.5 ± 11.9 , Danish score - 20.5 ± 9.83 .

Patients with SpA had significantly lower serum levels of biomarkers compared with the healthy controls: 285.3 ± 186.9 vs 443.2 ± 84.3 , $p = 0.0017$ - for TGF- β 1, and 21.7 ± 13.5 vs 31.2 ± 10.5 , $p < 0.0001$ - for Scl.

There were significant positive correlations for TGF- β 1: strong - with active spine lesions by Berlin method ($r = 0.810$, $p < 0.01$), and weak - with CRP level ($r = 0.224$, $p = 0.024$). There were no correlations with MRI inflammatory changes in SIJ. Scl had weak negative correlation with SPARCC ($r = -0.265$, $p = 0.030$), but not with Danish or Berlin scores.

There were no other correlations, including ASDAS-CRP, BASDAI and BASFI for both TGF- β 1 and Scl.

Conclusion: Serum TGF- β 1 and Scl levels are significantly lower in SpA patients comparing with non-SpA subjects. TGF- β 1 positively correlates with disease activity (CRP and active MRI lesions in spine), but has no correlations with SIJ inflammation assessed by MRI. Scl negatively correlates with inflammatory MRI changes in SIJ, but not in the spine.

References:

[1] Vaez F. Rheum Res. 2017; 2(3): 103-107

[2] Perrotta FM. J Immunol Res. 2018. doi: 10.1155/2018/9101964

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AB0724

IS THERE A LINK BETWEEN RADIOGRAPHIC SACROILIITIS AND HIP INVOLVEMENT IN SPONDYLOARTHRITIS?

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Background: Hip involvement is a common feature in spondyloarthritis (SpA). Whether the hip is part of the axial or appendicular skeletal is still a matter of discussion.

Objectives: We aimed to assess the relationship between sacroiliitis, spinal and hip involvement in SpA.