THU0238

ULTRASONOGRAPHIC EVALUATION OF DISTAL PATELLAR ENTHESIS IN PATIENTS AFFECTED BY ENTEROPATHIC SPONDYLOARTHRITIS

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Background: Enteropathic arthritis (EA) belongs to the spondyloarthritis (SpA) spectrum of diseases and occurs in patients affected by inflammatory bowel diseases (IBD). Several works demonstrated that ultrasonography (US) is a feasible, reliable and easily accessible tool for detecting chronic and active enthesal abnormalities even in a subclinical contest in SpA patients.^{1,2}

Objectives: To evaluate the prevalence of US enthesal involvement of the distal insertion of patellar ligament in patients affected by EA.

Methods: Twenty-two consecutive AE patients (12 with Crohn's disease and 10 with ulcerative colitis; 8 females and 14 males; mean age 44.7 years, range 18–72 years; mean AE duration 10.1 years range 4–21 years) and 18 healthy age- and gender-matched controls (8 females and 10 males; mean age 48 years, range 24–68 years) underwent an US examination (ESAOTE MyLAB 70 6–18 MHz linear array transducer) according with the validated Madrid Sonographic Enthesis Index (MASEI). Clinical and clinimetric variables were assessed in both groups according with daily clinical practice.

Results: Focusing on the 44 distal patellar entheses we identified a higher prevalence of all the elementary lesion analysed. In 34 entheses we identify a dishomogeneous echostructure (77.3% vs 33.3%; $p=0.0001$), in 38 structural thickness (86.4% vs 66.7%; $p=0.03$), in 16 power Doppler positivity (36.3% vs 16.7%; $p=0.04$), in 17 presence of calcifications (38.6% vs 16.7%; $p=0.03$) and in 8 entheses the presence of erosions (18.8% vs 0%; $p=0.007$). In the 45% of the examined patients we detected a simultaneous presence of dishomogeneous echostructure, structural thickness and power Doppler positivity suggestive for US active enthesitis at the level of the same entheses.

Conclusions: US detectable signs of enthesopathy and enthesitis are very frequent in EA patients even when we analyse the distal entheses of the patellar ligament alone. Further studies involving a larger number of patients are needed to confirm these preliminary data.

REFERENCES:

- Atzeni F, Defendenti C, Ditto MC, et al. "Rheumatic manifestations in inflammatory bowel disease". *Autoimmun Rev*. 2014 Jan;13(1):20–3.
- Wakefield RJ, Green MJ, Marzo-Ortega H, et al. Should oligoarthritis be reclassified? Ultrasound reveals a high prevalence of subclinical disease. *Ann Rheum Dis* 2004;63(4):382–5.

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THU0239

PROGRESSION OF STRUCTURAL DAMAGE ON MRI OF THE SPINE AND SACROILIAC JOINTS IN PATIENTS WITH AXIAL SPONDYLOARTHRITIS IS LIMITED: THE 5 – YEAR RESULTS IN THE DESIR COHORT

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Background: Reliably detecting radiographic structural change in patients with axial spondyloarthritis (axSpA), especially in the sacroiliac joints (SIJ), is notoriously difficult. Magnetic resonance imaging (MRI) is an alternative for radiographs to assess structural damage. However, so far the utility of MRI in capturing change in structural damage over time has been poorly studied.

Objectives: We aimed to evaluate the change over time of structural lesions on MRI of the SIJ and spine in patients with axSpA.

Methods: Patients with recent onset (≤ 3 years) axSpA (according to the treating rheumatologist) from the DESIR cohort were included. MRI of the SIJ (MRI-SIJ) and spine (MRI-spine) were obtained at baseline and 5 years and scored by 3 trained central readers unaware of the chronology. Structural damage in the SIJ (MRI-SIJ-STR) and in the spine (MRI-spine-STR) was defined according to 3 binary rules (A1: ≥ 5 fatty lesions and/or erosions; B1: ≥ 3 erosions; and C1: ≥ 3 fatty lesions) and 3 continuous scores (A2: number of fatty lesions/erosions; B2: number of erosions; and C2: number of fatty lesions). For binary outcomes, structural damage was defined by the agreement of at least 2 out of 3 readers and the % of net progression by subtracting the number of patients that 'improved' from those that 'worsened' divided by the total number of patients with complete

baseline and 5 year data. For continuous outcomes, the mean of the 3 readers was used and the difference between year 5 and baseline was calculated.

Results: In total, 151 and 145 patients had complete MRI-SIJ and MRI-spine data available from 3 readers, respectively. The percentages of net progression at SIJ level are summarised in the figure 1. These were 6.6%, 0.7% and 7.9% for the binary outcomes A1, B1 and C1 respectively. Notably, the percentage of 'improvement' (4.6%) was almost as high as the percentage of 'worsening' (5.3%) for definition B1 (≥ 3 erosions); while no 'improvements' were seen by the 3 readers for definition C1 (≥ 3 fatty lesions). Similar differences were seen for the mean (standard deviation) change of the 3 MRI-SIJ-STR continuous outcomes (A2: 1.02 (2.60); B2: 0.20 (1.39); and C2: 0.83 (2.20); $p<0.01$ for all). MRI-spine-STR net change over time was almost absent (A1: -0.7% ; B1: 0.0% ; C1: 0.7%) considering the binary outcomes, and small (though statistically significant) considering definition A2 (0.18 (0.52); $p<0.01$) and C2 (0.14 (0.48); $p<0.01$) but absent for definition B2 (0.03 (0.24); $p=0.109$).

Abstract THU0239 – Figure 1. Changes in different binary MRI-SIJ-STR outcome measures. All outcomes are assessed according to the '2 out of 3' definition in the completers population (N=151). MRI-SIJ-STR, structural damage on magnetic resonance imaging of the sacroiliac joints

Conclusions: These results suggest that patients with early axSpA only show modest structural progression in the MRI of the SIJ and that fatty lesions are more sensitive to change compared to erosions. In this early axSpA population, MRI-detected structural progression in the spine is very limited/absent.

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THU0240

THE SIZE AND FREQUENCY OF BONE MARROW OEDEMA ON SACROILIAC JOINT MRI DIFFERS IN A CLUSTER-WISE COMPARISON OF PATIENTS WITH FINDINGS SUGGESTIVE OF AXIAL SPONDYLOARTHRITIS

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Background: Multiple correspondence analysis (MCA) is a statistical method that allows for the translation of data from multiple categorical variables into single coordinates per individual. When combined with cluster analysis, individuals that share phenotypic characteristics can be grouped together. The Assessment of Axial Spondyloarthritis international Society (ASAS) published classification criteria for axial spondyloarthritis (axSpA) in 2009¹ that included active sacroiliitis on magnet resonance imaging (MRI) of the sacroiliac joints (SIJ) defined as bone marrow oedema (BME) present in either as 2 lesions on one slice, or 1 lesion on 2 consecutive slices.² It has been shown that extent of BME is associated with risk of radiographic progression.³

Objectives: To identify phenotypes in low back pain (LBP) patients recruited from primary care with findings suggestive of early axSpA and to assess differences in size and frequency of BME lesions on SIJ MRI.

Methods: Age, gender and the ASAS SpA features (SIJ BME on MRI, HLA-B27, inflammatory back pain, arthritis, heel enthesitis, uveitis, psoriasis, inflammatory bowel disease, good response to NSAIDs, family history of SpA, but not dactylitis (not observed) or radiographic sacroiliitis) of 134 LBP patients who either met or were one feature short of meeting the ASAS classification criteria for axSpA were analysed by MCA and subsequent k-means cluster analysis in order to identify various clinical phenotypes. The above listed SpA features, and if present, the

size and frequency of SIJ BME as defined by the Aarhus scoring module,⁴ were compared across clusters.

Results: MCA and cluster analysis revealed 3 clusters. Cluster 1 was predominantly HLA-B27 positive (96.7%) with SIJ BME in half of the cases. Cluster 2 and 3 had SIJ BME in all cases. Cluster 3 had fewer features suggestive of axSpA than clusters 1 and 2. There were significant differences in frequency (3.0 vs 2.0 vs 1.0) and extent of BME (4.0 vs 2.0 vs 1.0) across clusters 1, 2 and 3.

Abstract THU0240 – Table 1. Cluster-wise comparison of the construction variables, frequency and size of sacroiliac joint bone marrow oedema*

Characteristic	All (n=134)	Cluster 1 (n=30)	Cluster 2 (n=45)	Cluster 3 (n=59)	p-value†
Male	42.5	53.3	40.0	39.0	NS
Age category (years)					
≤25	18.7	26.7	6.7	23.7	<0.05 ^{4,6}
26–32	29.9	23.3	40.0	25.4	NS
≥33	51.5	50.0	53.3	50.8	NS
SIJ BME	88.8	50.0	100.0	100.0	<0.001 ^{4,6}
HLA-B27 positive	30.6	96.7	17.8	6.8	<0.001 ^{4,6}
Inflammatory back pain	58.2	73.3	95.6	22.0	<0.01 ⁴ , <0.001 ^{4,6}
Arthritis	20.1	46.7	26.7	1.7	<0.001 ^{4,6}
Heel enthesitis	19.4	26.7	35.6	3.4	<0.01 ⁴ , <0.001 ⁴
Uveitis	2.2	3.3	4.4	0.0	NS
Psoriasis	4.5	3.3	8.9	1.7	NS
Inflammatory bowel disease	1.5	6.7	0.0	0.0	NS
Good response to NSAIDs	35.1	63.3	48.9	10.2	<0.001 ^{4,6}
Family history of SpA ⁴	18.9	40.0	28.9	0.0	<0.001 ^{4,6}
Elevated CRP	13.4	30.0	4.4	11.9	<0.01 ⁴ , <0.05 ⁶
Among patients with SIJ BME					
Frequency of BME (1–8) ⁴	2.0 (2.0)	3.0 (5.0)	2.0 (2.0)	1.0 (1.0)	<0.01a, <0.001b, <0.05c
Size of BME (1–24) ⁴	2.0 (2.0)	4.0 (7.0)	2.0 (3.0)	1.0 (1.0)	<0.01a, <0.001b, <0.05c

* Values are percent of patients or medians with interquartile ranges; †Kruskal-Wallis and Dunn's test for multiple comparisons; †Cluster 1 vs Cluster 2; †Cluster 1 vs Cluster 3; †Cluster 2 vs Cluster 3; †missing in 2 patients; †Frequency of BME was defined as the total count of lesions, i.e. 4 locations per joint; †Size of BME was graded as slight (<25%), moderate (25% to <50%), or severe (≥50%) extent of BME in the cartilaginous and ligamentous part of the corresponding sacral and iliac subchondral bone area, i.e. 4 locations per joint, and combined into a total score.

Abbreviations: SIJ, sacroiliac joints; BME, bone marrow edema; MRI, magnet resonance imaging; HLA-B27, Human Leukocyte Antigen B27; NS, not significant; NSAIDs, non-steroidal anti-inflammatory drugs; CRP, C-reactive protein; NS, not significant

Conclusions: Three clusters were identified among LBP patients with findings suggestive of axSpA: 1 predominantly HLA-B27 positive cluster with SIJ BME in half of the subjects, and 2 clusters having less features suggestive of SpA and with SIJ BME in all subjects. The predominantly HLA-B27 positive cluster had more and larger BME lesions than the other 2, which may indicate individuals at risk for progression.

REFERENCES:

- [1] Ann Rheum Dis 2009;68(6):777–83;
- [2] Ann Rheum Dis 2009;68(10):1520–7.
- [3] Arthritis Rheum 2008;58(11):3413–3418.
- [4] AC&R. 2010;62(1):11–8.

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THU0241 MUSCULOSKELETAL INVOLVEMENT IN INFLAMMATORY BOWEL DISEASE'S PATIENTS: A MONO CENTRIC EXPERIENCE

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Background: Musculoskeletal symptoms are frequently reported by patients with inflammatory bowel diseases (IBD). Those symptoms may vary from arthralgia to arthritis, involving peripheral or axial joints, with a prevalence ranging from 17% to 62% when considering any SpA manifestation (with a similar range for axial or peripheral involvement from 5% to 30%) and a definite SpA diagnosis up to 46%.^{1–10} To date, a more comprehensive approach is needed, also because the use of DMARDs or biologics could improve both gastrointestinal and musculoskeletal symptoms.

Objectives: To evaluate the rate of MSK involvement in a mono centric cohort of IBD patients.

Methods: A questionnaire based on the features of SpA was used in the IBD out-patient clinic from January 1st to December 31st 2017. When there was a positivity for any feature, the patients were evaluated by a rheumatologist (with more than 18 years of experience in SpA). All the visits were performed in 2–3 weeks from the moment the questionnaire was performed (varying according to the seasonal time for holidays). When there were some doubts about the diagnosis, further examinations were requested.

Results: A total of 403 patients were visited in the out-patient clinic (220 affected by CD, 172 affected by UC and 11 with a not defined IBD). Fifty-nine patients were sent to the rheumatologist (33 CD, 24 UC and 2 not defined IBD). Eleven patients had 2 or more rheumatologic visits (to follow-up the disease and check the results

of the exams requested). To allow a diagnosis, 4 sacroiliac joints MRI and 1 ultrasound assessment of the feet were requested. A diagnosis of peripheral SpA was given in 9 patients while axial SpA was diagnosed in 7 subjects. The diagnosis was fibromyalgia, osteoarthritis and arthralgia in 1, 2 and 40 patients, respectively. Therapy was modified in 16/59 patients after the rheumatologic assessment (DMARDs were prescribed in 12 subjects while anti-TNFα in 4 of them). In 1 patient (with absolute contraindication for biologic therapy), two courses of SI joint injection were performed, improving local pain.

Conclusions: The results of our study confirm the already published prevalence of musculoskeletal involvement in IBD patients (15% of our IBD population complained musculoskeletal pain and 27% of the patients sent to the rheumatologist were given an enteropathic arthritis diagnosis). As for the already existing literature, we did not notice any evident difference in the prevalence of axial and peripheral involvement. An established collaboration between gastroenterologists and rheumatologists is necessary to provide an integrated and more comprehensive management of IBD, improving the quality of life of the patients.^{11–12}

REFERENCES:

- [1] Palm O, et al. J Rheumatol 2002.
- [2] Salvarani C, et al. Scand J Gastroenterol 2001.
- [3] Olivieri I, et al. Autoimmun Rev 2014.

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THU0242 PREGNANCY OUTCOMES AND DISEASE ACTIVITY IN WOMEN WITH AXIAL SPONDYLOARTHRITIS: A SYSTEMATIC LITERATURE REVIEW

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Background: Women with axial spondyloarthritis (axSpA) are often affected by the disease during their reproductive years,¹ but reports on disease activity and pregnancy outcomes in these patients (pts) are sparse. In women with ankylosing spondylitis (AS), also currently termed as radiographic axSpA, a higher risk of disease activity flares and prevalence of adverse pregnancy outcomes have been reported vs healthy controls; however, in non-radiographic (nr)-axSpA pts, such data are virtually non-existent.^{2,3}

Objectives: To review the available evidence on the relationship between axSpA disease activity and pregnancy, including foetal outcomes.

Methods: A systematic literature review was conducted in October 2017 by searching EMBASE, MEDLINE[®], the Cochrane Database of Systematic Reviews, and the Database of Abstracts of Reviews of Effects. Publications were systematically screened for English language articles on observational studies of axSpA pts reporting pregnancy outcomes or disease activity during pregnancy. Studies utilising agents contraindicated in pregnancy were excluded. Supplementary searches of selected, 2016–17 conference proceedings and bibliographies of relevant review articles were also conducted.

Results: 2216 publications were reviewed, with 20 publications on 15 unique studies meeting the inclusion criteria. When utilising the verified disease activity measurement instruments, Bath Ankylosing Spondylitis Disease Activity Index (BASDAI) or Ankylosing Spondylitis Disease Activity Score C-Reactive Protein (ASDAS-CRP), 5 studies (3 prospective, 2 retrospective) reported active disease (as described by individual studies; table 1) both during pregnancy and postpartum in most pts. Pregnancy outcomes in axSpA pts were compared with healthy controls in 6 studies (3 retrospective, 2 prospective, 1 case-control), the 3 largest of which (including 1 prospective) revealed higher risk or odds of preterm births in axSpA pts. Higher rates or risk of low birth weight/small-for-gestational-age neonates were shown in pts vs controls in 2/5 studies reporting such outcomes. Stillbirths, miscarriages or foetal loss/abortion were found to occur at similar rates in both populations.

Conclusions: Robust, prospective data on disease activity during pregnancies of women with axSpA are limited. Within the samples reported here, available data suggest that there may be a small increase in pre-term births; no signal for increased pregnancy loss was detected. Further research is needed to investigate relationships between maternal disease activity and pregnancy outcomes in axSpA.