

Objectives: To evaluate the literature describing the spectrum of MRI lesions in axSpA and to generate a consensus update on standardised definitions.

Methods: The literature pertaining to MRI lesion definitions in axSpA was discussed at 3 meetings of the ASAS MRI group attended by 26 investigators. The group reviewed the literature for MRI lesion definitions and decided by consensus which definitions would be retained, which required modification, and which required a new definition.

Results: For definitions denoting signs of activity in the SIJ, there are no revisions to the most current ASAS definition of a positive MRI¹. Definitions for capsulitis and enthesitis are revised. A new definition, *joint space enhancement*, denotes increased signal on contrast-enhanced images in the joint space of the cartilaginous portion of the SIJ. This replaces the term 'synovitis' and a separate definition describes what constitutes joint space fluid. For structural change in the SIJ, the definition for sclerosis is unchanged. Revised definition for a fatty lesion incorporates characteristics typical of axSpA, and for erosion requires both loss of cortical bone as well as adjacent marrow matrix. A new definition, *fat metaplasia in the joint space ('backfill')*, denotes the reparative change on a T1W image at the site of erosion when signs of activity recede. The new definition for ankylosis stresses the continuity of bright marrow signal across the joint space. Spinal lesion definitions are divided into those that occur in defined central and lateral sagittal slices. The revised definition of a vertebral corner inflammatory lesion divides this into a regular (type A) and dimorphic (type B) lesion. A new definition for corner erosion requires both loss of cortical bone as well as adjacent marrow matrix. New definitions for new bone growth require bright signal on T1W images extending from the vertebral corner marrow or endplate, which may (ankylosis) or may not (bone spur) be continuous with the adjacent vertebra.

Conclusions: The ASAS MRI group has generated a consensus based update on MRI lesions in axSpA.

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THU0277

WHICH MRI LESIONS IN THE SACROILIAC JOINT ARE ASSOCIATED WITH THE DIAGNOSIS OF AXIAL SPONDYLOARTHRITIS AFTER 2 YEARS FOLLOW UP IN THE ECHOGRAPHY IN SPONDYLOARTHRITIS COHORT (ECHOSPA)?

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Background: MRI of the sacroiliac joint (SIJ) is emerging as an important prognostic tool for assessment of patients presenting with SA and this may have consequences for early treatment. A major challenge in early SA is establishing the diagnosis and this requires prospective follow up to determine which cases have developed SA with more certainty. In addition, it is unclear which MRI lesions have prognostic capacity

Objectives: To assess the baseline distribution and prognostic capacity of MRI lesions in the SIJ of patients diagnosed with axSpA after 2 years follow up in the ECHOSPA cohort.

Methods: Consecutive outpatients with age <50 years and symptoms >3 months suggestive of SpA (inflammatory back pain, peripheral arthritis or inflammatory arthralgia, enthesitis or dactylitis, uveitis with B27 positivity, a family history of SpA) were enrolled in the prospective French ECHOSPA cohort study. The diagnosis of SpA was ascertained by an expert committee, blind to MRI evaluation, after at least 2 years of follow-up. MRI scans from 223 cases were available for evaluation by 2 readers and an adjudicator who assessed MRI lesions in the SIJ according to updated consensus definitions from the ASAS-MRI group. These were recorded in an ASAS consensus-derived eCRF that comprises global assessment (active and/or structural lesion typical of axSpA present/absent) and detailed scoring of individual lesions (SPARCC SIJ inflammation, SPARCC SIJ structural). Clinical, lab, and imaging variables associated with the diagnosis of axSpA at 2 years were first identified by univariate regression. A base model of all clinical/lab variables associated with axSpA was included as a group in multivariate logistic regression models that tested the independent association with MRI lesions.

Results: Mean age of the 223 cases was 39.6 (10.5) years, mean symptom duration was 2.5 (4.1) years, 49.5% were HLA-B27 + and 63.7% were female. Primary inclusion criterion was IBP in 53%, IA in 27%, ED in 9%, B27 +U in 8% and Fam in

4%. At 2 years follow up, 165 (74%) were deemed to have axSpA. In group comparisons (table 1) and univariate regression, both active and structural MRI lesions were associated with diagnosis of axSpA at 2 years (p=0.03, p=0.01, respectively). Age, B27, and psoriasis were the clinical variables associated with diagnosis of axSpA at 2 years in univariate analysis (all p<0.0001) and were included together with gender in multivariate analyses. Active and structural lesions typical of axSpA and SPARCC BME score ≥2 were each independently associated with diagnosis of axSpA at 2 years (OR(95% CI)- 6.8 (1.4–34.1) (p=0.02); 17.9 (2.2–146.6) (p=0.007); 4.9 (1.3–18.4) (p=0.02). With all variables simultaneously added to the model, only structural lesions were significantly associated.

Abstract THU0277 – Table 1. Distribution of MRI lesions at baseline according to diagnosis of axSpA after 2 years

MRI Lesion	AxSpA n=165 (74.0%)	NOT SpA n=58 (26.0%)	P value
Active lesion typical for axSpA	26 (16.0%)	2 (3.6%)	0.019
Active lesion typical for axSpA (confidence ≥3, 0-4 scale)	18 (11.9%)	1 (1.8%)	0.027
ASAS MRI positivity	24 (14.6%)	1 (1.7%)	0.006
ASAS MRI positivity (confidence ≥3, 0-4 scale)	17 (10.8%)	1 (1.7%)	0.048
Structural lesion typical for axSpA	32 (19.6%)	1 (1.8%)	0.0004
Structural lesions typical for axSpA (confidence ≥3, 0-4 scale)	27 (17.3%)	0 (0%)	0.0002
Active AND structural lesion typical for axSpA	19 (11.7%)	0 (0%)	0.004
Active OR structural lesion typical for axSpA	39 (23.9%)	3 (5.4%)	0.001
Only active lesion typical of axSpA	7 (4.3%)	2 (3.6%)	1.0
Only structural lesion typical of axSpA	13 (8.0%)	1 (1.8%)	0.12

Conclusions: Assessment of both active and structural lesions on MRI may help determine which patients have axSpA with higher diagnostic certainty over time.

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THU0278

SERUM CALPROTECTIN IS CORRELATED WITH DISEASE ACTIVITY IN EARLY AXIAL SPONDYLOARTHRITIS BUT DOES NOT PREDICT RADIOGRAPHIC PROGRESSION AT 2 YEARS: RESULTS FROM THE DESIR COHORT

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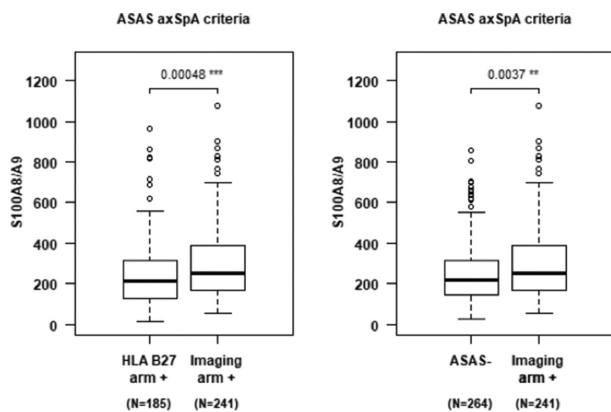
Background: Calprotectin (S100A8/A9), a protein secreted by activated neutrophils and monocytes in inflammatory conditions, is upregulated in active spondyloarthritis and associated with radiographic spinal progression in axial spondyloarthritis (axSpA)²

Objectives: To determine if serum calprotectin level at baseline can predict the radiographic progression of structural damage in spine at 2 years in the early axSpA cohort DESIR (DEvenir des Spondyloarthrites Indifférenciées Récentes) and to compare the association with spine and sacroiliac joint (SIJ) inflammation on magnetic resonance imaging (MRI).

Methods: Patients presenting with inflammatory back pain suggestive of axSpA for less than 3 years from the DESIR cohort were analysed. axSpA patient were defined as patients who fulfilled the Assessment in SpondyloArthritis Society (ASAS) criteria for axSpA at baseline. Calprotectin was assessed in the serum at baseline with ELISA kit (Hycult Biotech, the Netherlands). Spine radiographs, SIJ and spine MRI were centrally scored. Radiographic spinal progression was defined as worsening by ≥2 units of the mSASSS 2 years after the inclusion. Level of MRI spine and SIJ inflammation at baseline and 2 years was evaluated with BERLIN and SPARCC score. The associations between calprotectin level and mSASSS worsening were tested with Wilcoxon test, Berlin and SPARCC score were tested by Spearman's correlation tests.

Results: Of all, 426 had a calprotectin dosage and an early axSpA according to the ASAS criteria. Among them, 211 patients have had a mSASSS scoring at baseline and M24. A total of 399 patients have had spinal and SIJ MRI scoring at baseline. Only 15 patients had a radiographic progression with a variation of mSASSS ≥2. We showed a correlation between baseline calprotectin and MRI inflammation in SIJ or spine (Berlin score (r=0.15, p=0.003), SPARCC Sacroiliac score (r=0.12, p=0.012) and SPARCC Spine score (r=0.16, p=0.002)). Calprotectin baseline level was significantly higher in patients who fulfilled axSpA ASAS sacroiliitis arm criteria versus those who fulfilled ASAS HLA B27 arm criteria without any signs of sacroiliitis or versus patients did not fulfil ASAS criteria

(respectively $p < 0.001$, $p = 0.004$). Calprotectin level was correlated with baseline disease activity index (BASDAI ($r = 0.16$, $p = 0.001$), ASDAS-CRP ($r = 0.26$, $p < 0.001$)) and disability score (BASFI ($r = 0.14$, $p = 0.003$), ASQoL ($r = 0.16$, $p = 0.001$)). Interestingly, calprotectin at baseline did not predict radiographic progression at M24 (mSASSS worsening $0.27 \mu\text{g/mL} \pm 0.14$ vs without mSASSS worsening $0.29 \mu\text{g/mL} \pm 0.19$ (mean \pm SD)). There was also no correlation between calprotectin level and number of syndesmophytes.



Conclusions: Calprotectin do not seem to be a helpful biomarker predicting clinically relevant radiographic progression at 2 years although calprotectin levels at baseline are moderately correlated with disease activity in early axSpA.

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THU0279 GENDER DIFFERENCE IN PSYCHOLOGICAL STATUS AND SLEEP QUALITY IN THE PATIENTS WITH ANKYLOSING SPONDYLITIS

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Background: Ankylosing spondylitis (AS) is a chronic inflammatory disease which mainly involves the spine and sacroiliac joints. Anxiety and depression, are common among people with arthritis and interplay independently and synergistically with clinical outcomes such as pain and disability.¹ Psychological variables can be found either within the body functions or within the personal factors.² Meanwhile, AS patients may suffer from various sleep problems. Pain intensity, anxiety, and depression correlated significantly with poorer sleep quality.³ Whether gender difference exists in psychological status and sleep disturbance in AS patients remains unknown.

Objectives: Our aim was to investigate the prevalence of psychological disorders and sleep disturbance in Chinese patients with AS and then to explore gender difference in psychological status and sleep quality in the patients with AS.

Methods: Patients fulfilling modified New York criteria were enrolled from several rheumatology centres in China. Participants were required to complete a set of questionnaires and examinations, including demographic and clinical information, Bath Ankylosing Spondylitis Disease Activity Index (BASDAI), Bath Ankylosing Spondylitis Functional Index (BASFI), Zung self-rating anxiety scale (SAS), Zung self-rating depression scale (SDS) and the Pittsburgh Sleep Quality Index questionnaire (PSQI). Independent T test was performed to compare patients with different gender.

Results: Totally 3117 patients were included in the study. 2501 were males, and mean age were 27.20 ± 9.13 years. While 616 were female patients' whose mean age were 28.84 ± 9.21 years. 32.3% of the patients had anxiety. 62.2% had depression according to SDS. 63.4% had sleep disturbance. Male patients had an earlier age of disease onset than females ($p < 0.01$). Although female patients had a shorter disease duration, they had higher scores of SAS and SDS ($p < 0.05$). There was no significant difference in sleep quality between male and female patients.

Conclusions: A large number of AS patients were found to have anxiety, depression, sleep disturbance. Male AS patients tend to have an earlier age of disease onset, while female patients are more likely to have psychological disorders. Clinicians should take these factors into account during the assessment of the patients.

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THURSDAY, 14 JUNE 2018:

Psoriatic arthritis

THU0280 EARLY AND LONG-TERM TREATMENT RESPONSE AS WELL AS HIGH TOLERABILITY LEAD TO HIGH TREATMENT SATISFACTION OF A THERAPY WITH USTEKINUMAB IN PATIENTS WITH ACTIVE PSORIATIC ARTHRITIS – RESULTS OF THE NON-INTERVENTIONAL STUDY SUSTAIN

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Background: SUSTAIN is a prospective, multi-centre non-interventional study in Germany to observe long term efficacy and safety, quality of life and further patient reported outcomes in patients with active psoriatic arthritis under treatment with ustekinumab in routine clinical care.

Methods: In this study nearly 400 patients were planned to be documented at 75 centres for 160 weeks with documentation intervals at week 0 and 4 and then every 12 weeks. The treatment with Ustekinumab is according to the label (Stelara®). Besides demographic data, the following data will be documented: Number of swollen and tender joints, tender entheses, amount of skin symptoms (BSA and PASI), patient reported outcome concerning disease activity and pain, Health Assessment Questionnaire (HAQ), quality of life (SF-12), sleep quality (VAS), satisfaction with therapy of patient and physician, safety (adverse events [AE]/serious adverse events [SAE]), pharmacoeconomic aspects, number of patients with "Minimal Disease Activity" (MDA), number of patients with MDA at week 28 and 52. For the present second interim analysis baseline data of all 336 patients and results of the documented visits up to week 76 were analysed.

Results: For the present analysis 336 patients (57% women) at 75 centres were observed. The visit at week 4 was documented for 290 patients, at week 16 for 305 patients, at week 28 for 262 patients, and at week 76 for 100 patients. At baseline, the patients had a mean age of 54 years²²⁻⁸⁵ and BMI of 30 kg/m².¹⁹⁻⁵² 53.9% of the patients had as prior medication a TNF inhibitor and stopped because of inadequate response. Only 38% of the patients used MTX as concomitant medication. The patients showed arthritis at small (73.2%) and/or large (52.1%) joints, spinal involvement (16.7%) and enthesitis (13.1%). Number of tender joints improved from a mean of 10.0 (CI 95% 8.6/11.3) at baseline to 6.4 (5.4/7.3) at week 4 and 2.1 (1.4/2.9) at week 76. Number of swollen joints improved from 4.1 (3.4/4.9) at baseline to 2.6 (2.1/3.1) at week 4 and to 0.7 (0.4/1.0) at week 76. Efficacy of the therapy with ustekinumab was assessed as "very good" or "good" by 76.2% of the treating physicians at week 16 and by 89.9% at week 76. The patients assessed the efficacy as "very good" or "good" by 71.2% at week 16 and by 90.7% at week 76. Until data cut off point (32 months after study start), 67 SAEs have been documented, of which only 13 were related to ustekinumab. All in all, safety of therapy with ustekinumab was assessed as "very good" or "good" by 96.0% of the treating physicians after 16 weeks and by 98% after 76 weeks. The patients assessed the safety as "very good" or "good" by 93.3% at week 16 and by 98.0% at week 76.

Conclusions: The non-interventional study SUSTAIN showed relevant improvements with high therapy satisfaction and good safety in patients with active psoriatic arthritis treated with Ustekinumab after 4 weeks up to 76 weeks in daily practice life.

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