Conclusions: Inflammatory lesions, fat metaplasia and erosions were most frequently occurring in patients with axSpA, but also in women with postpartum pain. The SPARCC-scores cannot separate the different groups entirely. Further detailed analysis of lesions may help differentiate axSpA from other conditions.

REFERENCES:

- [1] Rudwaleit M, et al. *Ann Rheum Dis* 2009;68(6):777–783.
- [2] Maksymowich WP, et al. *Arthritis Rheum* 2005;53:703–9.
- [3] Maksymowich WP, et al. *J Rheumatol* 2015;42:79–86.

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OP0246 INFLAMMATION ON MRI OF SPINE AND SACROILIAC JOINTS IS HIGHLY PREDICTIVE OF STRUCTURAL DAMAGE IN AXIAL SPONDYLOARTHRITIS: THE 5 YEARS DATA OF THE DESIR COHORT

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Background: The effect of local inflammation on structural damage in patients (pts) with axial spondyloarthritis is not well known.

Objectives: We aimed to test the possible effect of inflammation on structural damage both assessed by MRI and at the level of the spine and the SIJ.

Methods: Pts 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 (BL), 2 and 5 years and scored by 3 trained central readers unaware of the chronology. Bone Marrow Oedema (BME) at MRI-SIJ was assessed according to ASAS definition and at the MRI-spine by the presence of ≥ 3 lesions. Structural damage in the SIJ (MRI-SIJ-STR) and in the spine (MRI-spine-STR) was defined by ≥ 3 fatty lesions. The% of structural net progression (number of 'progressors' minus the number of 'regressors' divided by the total number of pts) was assessed in subgroups according to CRP and BME status at BL. The effect of BME on MRI-SIJ on MRI-SIJ-STR and of BME on MRI-spine on MRI-spine-STR was evaluated using two types of binomial generalised estimating equations (GEE) models: i. effect at BL on 5 years incorporating measurements from all readers (GEE adjusted for reader); ii. effect of BME over 5 years (longitudinal time-lagged models with auto-regression). The final models were adjusted for variables proved to confound the association of interest (variables tested: age, gender, HLA-B27, smoking status, CRP, BASDAI, ASDAS, treatment with NSAIDs and TNFi).

Abstract OP0246 – Figure 1 Net progression from MRI-SIJ-STR negative to MRI-SIJ-STR positive (≥ 3 fatty lesions) according to baseline objective inflammatory markers:

Results: In total, 151 and 145 pts had complete 5 year MRI-SIJ and MRI-spine data available from 3 readers, respectively. Of the 151 pts with complete MRI-SIJ data, the net% pts who switched from MRI-SIJ-STR negative to positive ranged from 3.8% to 24% according to the presence of objective signs of inflammation at BL (figure 1). Low number of pts did not allow for similar analysis in the spine. In the multivariable analysis, both the presence of BME at MRI-SIJ (OR=4.2 [95% CI: 2.4 to 7.3]), and BME at MRI-spine (OR=8.9 [95% CI: 2.1–38.7]) at baseline were highly predictive of MRI-SIJ and MRI-spine structural progression respectively 5 years later, adjusting for CRP (only factor found to confound the association of interest). Similar positive associations were found in the longitudinal models testing the effect of BME on MRI-SIJ-STR and MRI-spine-STR over 5 years (table 1).

Abstract OP0246 – Table 1 Effect of inflammation on MRI (ASAS definition of sacroiliitis and BME in the spine) on binary MRI structural outcomes

	≥ 3 fatty lesions on MRI-SIJ	≥ 3 fatty lesions on MRI-Spine
Effect of BMI on:	OR (95% CI) (n=144–197)	OR (95% CI) (n=145–197)
By GEE adjusted for reader	4.2 (2.4; 7.3)*	8.9 (2.1; 38.7)*
By longitudinal GEE adjusted for reader and repeated measurements	5.1 (2.7; 9.6)£	15.6 (4.8; 50.3)£

* Adjusted for CRP at baseline; £ adjusted for time-varying lagged ASDAS-CRP.

Conclusions: Our results show that local inflammation is strongly associated with the development of structural damage over 5 years both in the SIJ and spine in early axSpA and that this effect is independent of systemic inflammation.

Disclosure of Interest: None declared

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OP0247 PERFORMANCE OF REFERRAL STRATEGIES FOR SPONDYLOARTHRITIS: A POPULATION-BASED NATIONWIDE STUDY

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Background: Several strategies have been proposed to promote early referral of patients with axial spondyloarthritis (axSpA), but consensus on the 'best' strategy is yet to be achieved. Moreover, few studies compared referral strategies (RS) head-to-head and, up to now, none has neither evaluated these in a 'nationwide' setting (external validity) nor assessed the entire spectrum of SpA (i.e. axSpA and peripheral SpA).

Objectives: To evaluate the performance of the screening strategy for SpA of a nationwide epidemiological study (EpiReumaPt), as compared to previously proposed RS.

Methods: EpiReumaPt was a three-stage national health survey (2011–2013) where, in the first phase, 10 661 adult participants were randomly selected and interviewed using a structured face-to-face questionnaire that included screening for rheumatic diseases (RD), such as SpA. In the second phase, positive screenings for ≥ 1 rheumatic complaint plus 20% negative screenings were invited for an assessment by the rheumatologist. Finally, 3 rheumatologists revised all the information and defined the final diagnosis by consensus. All participants of the second phase were included (n=3,877). Each RS (table 1) was tested against the SpA revised diagnosis using the following metrics: sensitivity, specificity, positive predictive value (PPV), and post-test probability of disease given a negative test (1-negative predictive value). RS with an imaging (e.g. MRI) or laboratory component (e.g. CRP, HLA-B27) were modified (by excluding these components) given limited data obtained in the survey (table 1). A weighting factor was used to take the survey design into account.

Results: From the total 3877 participants, 92 received a SpA diagnosis [weighted prevalence: 1.6% (95% CI: 1.2 to 2.1)], 3107 other RD diagnosis [e.g. knee osteoarthritis (31%)] and 678 no RD diagnosis. The ASAS RS was the most sensitive (85%) followed by the EpiReumaPt strategy (72%) (table 1). The ASAS and EpiReumaPt RS had the lowest post-test probabilities of SpA in the presence of negative screening (0.6% and 0.7% respectively), thus, yielding a marked decrease in the probability of disease if negative [(1.6–0.6)/1.6*100=63%; (1.6–0.7)/1.6*100=56% respectively]. On the other hand, the likelihood of SpA increased by 38% (2.2–1.6)/1.6*100 and 119% (3.5–1.6)/1.6*100 in case of a positive ASAS and EpiReumaPt RS, respectively. Brandt III was the least sensitive strategy in this study and not contributive to excluding SpA (1-NPV: 1.5%; pre-test probability: 1.6%), but expectedly increased the likelihood of SpA by 3.8 times if positive. The performance of the remaining RS is described in the table 1.

Abstract OP0247 – Table 1 Performance of the referral strategies against the rheumatologist clinical diagnosis (N=3,877; pre-test probability: 1.6% – weighted national SpA prevalence)

	Sensitivity (%)	Specificity (%)	PPV (%)	1-NPV (%)
ASAS	85.4	38.8	2.2	0.6
EpiReumaPt	72.1	67.6	3.5	0.7
CafaSpA one	56.3	69.7	2.9	1.0
Brandt I	49.2	79.3	3.7	1.0
Braun IBP	47.5	78.7	3.5	1.1
MASTER	36.7	87.7	4.6	1.2
Brandt II	27.7	92.4	5.6	1.3
Hermann	22.4	93.2	5.1	1.3
CafaSpA two	15.2	95.2	4.9	1.4
Braun 2 step	15.1	95.7	5.3	1.4
Brandt III	7.9	98.4	7.6	1.5

ASAS (≥1/5+): IBP (ASAS definition), good response to NSAIDs, family history of SpA, peripheral manifestations (arthritis, enthesitis and/or dactylitis), extra-articular manifestations (uveitis, psoriasis and/or IBD); EpiReumaPt (≥1/5+): previous SpA/PsA diagnosis, IBP (≥ 3/8 features), CBP (≥ 3 months) starting <45 years and ≥ 1/6 SpA features, dactylitis, enthesitis; CafaSpA one (≥1/3+): IBP (ASAS definition), good response to NSAIDs, family history of SpA; CafaSpA two (≥2/3+): see CafaSpA one; Brandt I (≥ 1/1+): IBP (morning stiffness>30 min, pain at night/early morning, improvement by exercise; ≥1/3); Brandt II (≥ 1/1+): ≥2/3 IBP features (see Brandt I); Brandt III (≥ 1/1+): ≥3/3 IBP features (see Brandt I); Braun IBP (≥ 2/5+): start BP≤35 years, waking second half of the night, alternating buttock pain, improvement by movement, not rest; MASTER (≥ 2/3+): IBP (morning stiffness>30 min, improvement exercise, not rest, awakening in the night because of BP), good response to NSAIDs, family history of AS; Hermann (≥1/1): IBP (Calin's criteria); Braun 2 step (≥ 2/3): psoriasis, alternating buttock pain, improvement BP by exercise. HLA-B27 excluded from ASAS, Brandt I-III and Braun 2 step; elevated CRP/ESR excluded from ASAS.

Conclusions: For the first time, a wide range of SpA RS were tested head-to-head in a population-based setting where the ASAS and EpiReumaPt RS were shown to be the most sensitive. Our data suggest that these strategies can be effectively used as screening tools for SpA especially when laboratory and imaging data are not available.

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OP0248

POTENTIAL DIFFERENCES IN AXIAL SPONDYLOARTHRITIS DISEASE ACTIVITY CATEGORIZATION USING DIFFERENT MINIMUM VALUES FOR HIGH-SENSITIVITY CRP IN ANKYLOSING SPONDYLITIS DISEASE ACTIVITY SCORE CALCULATION AND DIFFERENT DEFINITIONS OF DISEASE FLARE

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Background: It has been recommended that the lower limit of high-sensitivity CRP (hsCRP) be restricted to 2 in the Ankylosing Spondylitis Disease Activity Score (ASDAS) calculation. Also, a definition of flare of ASDAS increase ≥0.9 was recently proposed.

Objectives: Using non-radiographic axial SpA (nr-axSpA) trial data, this analysis evaluated potential differences in patient (pt) categorization using different minimum values for hsCRP in the ASDAS calculation and different definitions of disease flare.

Methods: ABILITY-3 (NCT01808118) assessed the impact of continuation versus withdrawal of adalimumab (ADA) in nr-axSpA pts who achieved sustained remission with open-label ADA. All pts received open-label ADA 40 mg every other wk during a 28-wk lead-in period. Pts who achieved remission, defined as ASDAS inactive disease (ID, ASDAS <1.3) at wks 16, 20, 24, and 28 were randomised to 40-wk, double-blind ADA (continuation) or PBO (withdrawal). ASDAS was calculated with the full range of hsCRP (protocol-defined) and limiting hsCRP to the lowest possible value of 2 mg/L (rederived). Flare was calculated as 2 consecutive study visits with ASDAS >2.1 (protocol definition) or with ASDAS increase ≥0.9 (modified definition). Data are reported as observed (open label) and by nonresponder imputation (double blind).

Results: 673 pts were enrolled. At open-label baseline, mean ASDAS using the protocol-defined ASDAS calculation was 3.6 vs 3.7 when rederived. At wk 28, 295 (43.8%) pts achieved protocol-defined ASDAS ID vs 272 (40.4%) pts using the rederived ASDAS; mean ASDAS at double-blind baseline was 0.7 vs 0.9, respectively. At wk 68, significantly more pts treated with ADA vs PBO had no flare per protocol definition (69.7% vs 47.1%; p<0.001; table 1). Similar results were observed with modified definitions (table 1). At wk 68, significantly greater proportions of ADA vs PBO pts achieved ASDAS endpoints (all p<0.001), with similar results for protocol-defined and rederived ASDAS calculations, respectively: ID (57.2% vs 33.3% and 52.0% vs 29.4%), major improvement (58.6% vs 32.0% and 50.0% vs 30.7%), and clinically important improvement (67.1% vs 45.1% and 67.1% vs 44.4%).

Abstract OP0248 – Table 1 Percentage of patients not experiencing disease flare at week 68 using protocol-defined or rederived ASDAS and/or modified flare definitions

Variable, n (%)	Adalimumab (40 mg EOW) n=152*	Placebo n=153*	Difference, %	P value
Protocol-defined ASDAS and flare	106 (69.7)	72 (47.1)	22.7	<0.001
Rederived ASDAS, protocol-defined flare	100 (65.8)	69 (45.1)	20.7	<0.001
Protocol-defined ASDAS, modified flare definition	97 (63.8)	56 (36.6)	27.2	<0.001
Rederived ASDAS and modified flare definition	99 (65.1)	65 (42.5)	22.6	<0.001

ASDAS, Ankylosing Spondylitis Disease Activity Score; EOW, every other week; ID, Nonresponder imputation; P value using 2-sided Pearson chi-square test.

*Efficacy outcomes were calculated based on the number of patients randomized, rather than those who would have qualified for randomization based on rederived ASDAS calculations.

Conclusions: At both open-label and double-blind baseline, mean ASDAS was similar, regardless of the hsCRP value cut-off used. Fewer pts in both treatment groups were categorised as not experiencing a flare when limiting the lowest possible hsCRP value to 2 mg/L in the ASDAS calculation and/or using a modified flare definition. However, treatment differences remained similar compared with the protocol-defined methodology. Results suggest infrequent clinically relevant differences in ASDAS values with use of either definition for minimum hsCRP and that the use of ASDAS >2.1 or ASDAS increase ≥0.9 as the definition of flare is reasonable.

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OP0249

THE CONTRIBUTION OF STRUCTURAL MRI LESIONS TO DETECTION OF SACROILIITIS IN PATIENTS IN THE ASSESSMENTS IN SPONDYLOARTHRITIS INTERNATIONAL SOCIETY (ASAS) CLASSIFICATION COHORT

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Background: Active lesions typical of axial spondyloarthritis (axSpA) in the sacroiliac joint (SIJ) were reported by local site readers in about 40% of patients in the ASAS classification cohort (ASAS-CC) when this study was conducted over 10 years ago¹. There has been no data reported on the occurrence of structural lesions in this cohort. Since this study was conducted, there has been considerable progress in our understanding of SIJ lesions observed on MRI, which raises the possibility that MRI scans of patients in the ASAS-CC could now be interpreted substantially differently.

Objectives: To determine the added contribution of structural lesions in the SIJ to the evaluation of sacroiliitis in an inception cohort of patients with axSpA.

Methods: Recently updated MRI lesion definitions for axSpA (ASAS_MRI_def^m) were recorded in an eCRF that comprises global assessment (lesion present/absent) and detailed scoring (SPARCC SIJ inflammation, SPARCC SIJ structural). MRI scans were available in a variety of formats (DICOM (n=175), JPEG (n=71), DICOM film(n=32)) and sequences, axial and semicoronal orientations, from 278 of the 495 cases who had MRI performed in the ASAS-CC. Image quality