present/absent by global assessment was analysed using kappa. Reliability of detailed scoring was analysed by intraclass correlation coefficient (ICC).

Results: Reliability of detection of active and structural lesions was comparable and somewhat better when DICOM images were evaluated (table 1). The most frequently detected active lesion, subchondral inflammation, was detected to a comparable degree of reliability as the most frequently detected structural lesion, erosion. Fat metaplasia in the joint space (backfill) and ankylosis were also reliably detected despite low frequency of occurrence in this cohort. Mean ICC for detailed scores were BME-0.84, Erosion-0.55, Fatty lesion (any)–0.61, Fatty lesion (>1 cm depth)–0.55, Sclerosis-0.73, Fat metaplasia in joint space-0.36, Ankylosis-0.97, Bone bud-0.07.

Abstract FRI0169 – Table 1. Kappa values for detection of MRI lesions in the SIJ of patients in the ASAS-CC

*Based on all images (n =278).	**Based on DICOM images (n =175).	
	Mean of all reader pairs (95% CI)*	Mean of all reader pairs (95% CI)**
Active lesions typical of axSpA	0.73 (0.64-0.81)	0.70 (0.58-0.82)
Active lesions typical of axSpA (confidence ≥3) (1-4 scale)	0.77 (0.68-0.86)	0.80 (0.69-0.92)
ASAS positive MRI	0.74 (0.65-0.82)	0.73 (0.61-0.84)
ASAS positive MRI (confidence ≥3) (1-4 scale)	0.76 (0.67-0.85)	0.79 (0.67-0.90)
Structural lesions typical of axSpA	0.64 (0.53-0.74)	0.71 (0.59-0.83)
Structural lesions typical of axSpA (confidence ≥3) (1-4 scale)	0.61 (0.49-0.74)	0.75 (0.62-0.88)
Subchondral inflammation	0.66 (0.57-0.75)	0.60 (0.49-0.72)
Inflammation in Erosion cavity	0.29 (0.11-0.47)	0.37 (0.15-0.58)
Capsulitis	0.37 (0.12-0.62)	0.55 (0.18-0.90)
Joint fluid	0.35 (0.21-0.50)	0.41 (0.23-0.59)
Enthesitis	0.21 (0.04-0.39)	0.23 (0.03-0.45)
Sclerosis	0.42 (0.30-0.55)	0.48 (0.33-0.63)
Erosion	0.59 (0.47-0.70)	0.61 (0.47-0.75)
Fatty lesion (any)	0.61 (0.50-0.73)	0.61 (0.46-0.76)
Fatty lesion >1cm	0.57 (0.41-0.73)	0.66 (0.47-0.84)
Fat metaplasia in joint space	0.47 (0.27-0.67)	0.50 (0.26-0.74)
Bone bud	0.14 (-0.03-0.31)	0.11 (-0.06-0.29)
Ankylosis	0.54 (0.22-0.86)	0.58 (0.25-0.89)

*Based on all images (n=278); **Based on DICOM images (n=175)

Conclusions: The reliability of the ASAS_MRI_defⁿ was substantial for the most frequently detected lesions.

Disclosure of Interest: None declared

DOI: 10.1136/annrheumdis-2018-eular.7144

FRI0170 CONSENSUS DEFINITIONS FOR MRI LESIONS IN THE SACROILIAC JOINTS OF PATIENTS WITH AXIAL SPONDYLOARTHRITIS: FIRST ANALYSIS FROM THE ASSESSMENTS IN SPONDYLOARTHRITIS INTERNATIONAL SOCIETY (ASAS) CLASSIFICATION COHORT

W.P. Maksymowych¹, S.J. Pedersen², X. Baraliakos³, P. Machado⁴, U. Weber⁵, J. Sieper⁶, S. Wichuk¹, D. Poddubnyy⁶, M. Østergaard⁷, R.G. Lambert⁸. ¹Medicine, University of Alberta, Edmonton, Canada; ²Rheumatology, Gentofte Hospital, Copenhagen, Denmark; ³Rheumatology, Rheumazentrum Ruhrgebiet, Herne, Germany; ⁴Rheumatology, University College London, London, UK; ⁵Rheumatology, King Christian 10th Hospital for Rheumatic Diseases, Graasten, Denmark; ⁶Rheumatology, Charité Universitätsmedizin Berlin, Berlin, Germany; ⁷Rheumatology, Copenhagen Center for Arthritis Research, Copenhagen, Denmark; ⁸Radiology, University of Alberta, Edmonton, Canada

Background: A broad spectrum of MRI lesions has been described in the sacroiliac joint (SIJ) of patients with axial spondyloarthritis and a recent consensus from the ASAS MRI group has culminated in updated lesion definitions (ASAS_MRI_defⁿ). There has been no central reader evaluation of MRI scans from the ASAS Classification Cohort (ASAS-CC)¹ to determine the spectrum of MRI lesions in the SIJ in this cohort, to compare the frequencies of different lesion types, and to compare detection of lesions between central and ASAS-CC local site readers

Objectives: To determine the spectrum and compare the frequencies of active and structural lesions on MRI images from the ASAS-CC according to the consensus ASAS_MRI_defⁿ update.

Methods: ASAS_MRI_defⁿ were recorded in an eCRF that comprises global assessment (lesion present/absent) and detailed scoring (SPARCC SIJ inflammation, SPARCC SIJ structural). For global assessment, wording of lesions defining active and structural lesions typical of axSpA was the same as in the original ASAS-CC eCRF permitting comparisons between central and local site readers. MRI images 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 was considered sufficient to record global data by 6 central readers in all cases. An additional reader assessed only images in DICOM format (n=175). Detailed SPARCC scoring data was based only on assessment of images in DICOM format. Comparison of active and structural lesion frequencies was assessed descriptively according to individual and majority of central readers data. Detection of active

lesions typical of axSpA in all available images from the ASAS-CC was compared between central and local readers.

Results: The percentage of cases with active lesions typical of axSpA recorded by central readers (28.4% by majority read) was lower than the 40% reported by local site readers in the ASAS-CC (table 1). This was similar to the frequency of structural lesions typical of axSpA (28.6% by majority read) (table 2). 11.2% had subchondral inflammation but not active lesions typical of axSpA but only 0.3% had active lesions typical of axSpA without subchondral inflammation. Erosion was the most frequently observed structural lesion (25.2%) followed by fatty lesion (19.8%). Results were very similar when only data from the 175 DICOM cases was analysed.

Abstract FRI0170 – Table 1. Frequencies of active MRI lesions in the SIJ in the ASAS-CC

Variable	Mean% (Range) of cases*	Number (%) of cases*
Active lesions typical of axSpA	31.5 (24.5-38.5)	79 (28.4%)
Active lesions typical of axSpA and level of confidence ≥3 (scale of 1-4)	22.4 (18.0-27.3)	58 (20.9%)
Active lesions typical of axSpA and meets ASAS definition for positive MRI	30.0 (22.6-37.4)	71 (25.5%)
Meets ASAS definition for positive MRI and level of confidence ≥3 (scale of 1-4)	23.1 (18.3-30.2)	58 (20.9%)
Subchondral inflammation	43.5 (38.5-51.1)	110 (39.6%)
Site of erosion cavity inflammation	8.9 (5.8-12.6)	10 (3.6%)
Capsulitis	4.0 (1.8-7.2)	6 (2.2%)
Joint fluid	14.1 (6.8-20.5)	11 (4.0%)
Enthesitis	7.5 (1.8-12.2)	6 (2.2%)

(*Individual data from 6 readers; majority reader (≥4) data).

Abstract FRI0170 – Table 2. Frequencies of structural MRI lesions in the SIJ in the ASAS-CC

Variable	Mean% (Range) of cases*	Number (%) of cases*
Structural lesions typical of axSpA	31.4 (23.5-39.9)	68 (28.6%)
Structural lesions typical of axSpA and level of confidence ≥3 (scale of 1-4)	20.8 (14.0-29.4)	46 (19.3%)
Subchondral sclerosis	24.2 (10.1-39.1)	36 (15.1%)
Erosion	27.9 (23.1-32.8)	60 (25.2%)
Fatty lesion (any)	23.5 (18.1-29.8)	47 (19.8%)
Fatty lesion (>1cm)	11.7 (8.0-15.6)	22 (9.2%)
Bone bud (yes)	2.1 (0.4-3.8)	1 (0.4%)
Fat metaplasia in joint space (yes)	8.1 (4.2-10.5)	11 (4.6%)
Ankylosis	1.1 (0.8-3.8)	5 (2.1%)

(*6 readers; majority reader (≥4) data).

Conclusions: In this first central reader analysis of MRI images from the ASAS-CC we demonstrate similar frequencies of active and structural lesions typical of axSpA, erosion as a common lesion, some degree of false positive subchondral inflammation, and a lower frequency of active lesions typical of axSpA than noted by local site readers.

REFERENCE:

[1] Rudwaleit, et al. Ann Rheum Dis 2009;68:777–831.

Disclosure of Interest: None declared

DOI: 10.1136/annrheumdis-2018-eular.7223

FRI0171 WHICH IMAGING OUTCOMES FOR AXSPA ARE MOST SENSITIVE TO CHANGE? A 5-YEAR ANALYSIS OF THE DESIR COHORT

A. Sepriano¹, S. Ramiro¹, D. van der Heijde¹, M. Dougados², P. Claudepierre³, A. Feydy⁴, M. Reijnders⁵, D. Loeuille⁶, R. Landewé⁷. ¹Rheumatology, Leiden University Medical Centre, Leiden, Netherlands; ²Rheumatology, Hôpital Cochin; ³Radiology, Hôpital Henri-Mondor; ⁴Radiology, Hôpital Cochin, Paris, France; ⁵Radiology, Leiden University Medical Centre, Leiden, Netherlands; ⁶Rheumatology, Hôpital Brabois, Nancy, France; ⁷Rheumatology, Amsterdam Rheumatology and Clinical Immunology Center (ARC), Amsterdam, Netherlands

Background: Several imaging outcomes have become available to assess inflammation and structural damage over time in patients with axial spondyloarthritis (axSpA). However, no formal comparison of their sensitivity to change has been made in the early phases of the disease.

Objectives: We aimed to compare the sensitivity to change of different MRI and radiographic scoring methods in patients with early axSpA.

Methods: Patients from the DESIR cohort fulfilling the ASAS axSpA criteria were included. Radiographs and MRI of the sacroiliac joints and spine were obtained at baseline, 1 year, 2 years and 5 years. Each film was scored by 2 or 3 readers in 3 'reading-waves' (wave 1: baseline; wave 2: baseline, 1 year, 2 years; wave 3: baseline, 2 years, 5 years). Outcomes measuring inflammation and structural damage both on MRI and radiographs in the spine and SIJ were assessed (table 1). The analysis of change captured over time was performed using generalised estimating equations (GEE) longitudinal models separately for each outcome, taking into account data from all readers and waves ('integrated analysis'). To allow