at BL and Wk 104;² association between decrease/increase in erosion score on MRI and decrease/increase in erosion or sacroiliitis grade on radiographs, BL to Wk 104.

Methods: All patients had early axSpA. EMBARK: 12 wks double-blind placebo-control, then 92 wks open-label etanercept. DESIR: patients had no history of biologics and received no biologics for 104 wks. MRI images from both studies: combined, anonymized, and read per patient; radiographs combined, anonymized, read separately from MRI. Readers unaware of: image chronology, original cohort. Three experienced readers individually reviewed T1 weighted MRI using SpondyloArthritis Research Consortium of Canada SIJ Structural Score; 3 different readers assessed radiographic sacroiliitis using mNY grade; all were at level of each joint surface. Lesion presence/absence or decrease/increase recorded per patient if ≥ 2 of 3 readers agreed. Statistical analyses: κ coefficient of agreement, McNemar's test for discordance asymmetry.

Results: 224 patients had MRI and radiographs. At BL, concordance for presence or absence of erosion in 162/224 (72.3%) ($\kappa=0.42$), table 1. Discordance: erosion more frequent on MRI (21.4%) than radiographs (6.3%; $p<0.0001$). Wk 104 data similar to BL. Decrease in erosion more frequent than increase only on MRI; significantly more frequent on MRI than radiographs. Decrease in erosion on MRI significantly more frequent than decrease in sacroiliitis grade.

Abstract FRI0216 – Table 1. Concordance between MRI and Radiographs, BL and Wk 104; and Change BL to Wk 104

	N	Present/ Present n (%)	Absent/ Absent n (%)	Absent/ Present n (%)	Present/ Present n (%)	κ (95% CI)	P-value*
BL Erosion: MRI/ radiographs	224	50 (22.3)	112 (50.0)	14 (6.3)	48 (21.4)	0.42 (0.30– 0.53)	<0.0001
Wk 104 Erosion: MRI/ radiographs	222	44 (19.8)	119 (53.6)	15 (6.8)	44 (19.8)	0.41 (0.29– 0.53)	0.0002
BL: Erosion on MRI/ sacroiliitis on radiographs	224	60 (26.8)	97 (43.3)	29 (12.9)	38 (17.0)	0.39 (0.26– 0.51)	0.27
Wk 104: Erosion on MRI/sacroiliitis on radiographs	222	56 (25.2)	99 (44.6)	35 (15.8)	32 (14.4)	0.37 (0.25– 0.50)	0.71
Erosion decrease: MRI/radiographs	221	4 (1.8)	162 (73.3)	6 (2.7)	49 (22.2)	0.06 (–0.05, 0.16)	<0.0001
Erosion increase: MRI/radiographs	221	2 (0.9)	187 (84.6)	17 (7.7)	15 (6.8)	0.03 (–0.12, 0.18)	0.72
Erosion decrease on MRI/sacroiliitis grade decrease on radiographs	221	8 (3.6)	154 (69.7)	14 (6.3)	45 (20.4)	0.08 (–0.05, 0.21)	<0.0001
Erosion increase on MRI/sacroiliitis grade increase on radiographs	221	4 (1.8)	180 (81.4)	24 (10.9)	13 (5.9)	0.09 (–0.07, 0.25)	0.07

*McNemar's test for discordance asymmetry.

BL, baseline; Wk, Week.

Conclusions: Findings of SIJ structural damage are observed differently on radiography and MRI in patients with early axSpA, and may appear to evolve differently.

Disclosure of Interest: W. Maksymowich Grant/research support from: AbbVie, Pfizer, Consultant for: AbbVie, Janssen, Lilly, Merck, Novartis, Pfizer, UCB, P. Claudepierre Consultant for: AbbVie, BMS, Celgene, Janssen, Novartis, Merck, Pfizer, Roche, UCB, Lilly, M. de Hooge Employee of: Selfemployed without other personnel (registered company under the Belgium law) MdH Research. Additional Affiliation: Ghent University, Ghent, Belgium, R. Lambert Consultant for: AbbVie, Bioclinica, Janssen, Parexel, UCB, R. Landewé Grant/research support from: Abbott, Amgen, Centocor, Novartis, Pfizer, Roche, Schering-Plough, UCB, Consultant for: AbbVie, Ablynx, Amgen, Astra-Zeneca, Bristol Myers Squibb, Celgene, Janssen, Galapagos, GlaxoSmithKline, Novartis, Novo-Nordisk, Merck, Pfizer, Roche, Schering-Plough, TiGenix, UCB, Employee of: Director of Rheumatology Consultancy BV, which is a registered company under Dutch law, Speakers bureau: Abbott/AbbVie, Amgen, Bristol Myers Squibb, Janssen, Merck, Pfizer, Roche, Schering-Plough, UCB, A. Molto Grant/research support from: Pfizer, Consultant for: Merck, UCB, D. van der Heijde Consultant for: AbbVie, Amgen, Astellas, AstraZeneca, BMS, Boehringer Ingelheim, Celgene, Daiichi, Lilly, Galapagos, Gilead, GlaxoSmithKline, Janssen, Merck, Novartis, Pfizer, Regeneron, Roche, Sanofi, Takeda, UCB, Employee of: Director of Imaging Rheumatology bv, J. Bukowski Shareholder of: Pfizer, Employee of: Pfizer, H. Jones Shareholder of: Pfizer, Employee of: Pfizer, I. Logeart Shareholder of: Pfizer, Employee of: Pfizer, L. Marshall Shareholder of: Pfizer, Employee of: Pfizer, R. Pedersen Shareholder of: Pfizer, Employee of: Pfizer, A. Szumski

Employee of: InVentiv Health, B. Vlahos Shareholder of: Pfizer, Employee of: Pfizer, M. Dougados Grant/research support from: Pfizer, AbbVie, UCB, Merck and Lilly, Consultant for: Pfizer, AbbVie, UCB, Merck and Lilly

DOI: 10.1136/annrheumdis-2018-eular.2124

FRI0217

DIAGNOSTIC ASCERTAINMENT OF AXIAL SPONDYLOARTHRITIS IN PATIENTS PRESENTING WITH UNDIAGNOSED BACK PAIN: WHAT IS THE IMPACT OF MRI IN RHEUMATOLOGICAL PRACTICE?

R.G. Lambert¹, R. Carmona², J. Yeung³, J. Chan⁴, L. Martin⁵, S. Aydin⁶, D. Mosher⁵, A. Masetto⁷, S. Keeling⁸, O. Ziouzina⁵, S. Rohekar⁹, J. Paschke¹⁰, A. Carapellucci¹⁰, W.P. Maksymowich^{9,10}. ¹Radiology, University of Alberta, Edmonton; ²St. Joseph's Healthcare Hamilton, Hamilton; ³James Yeung Rheumatology, Richmond; ⁴Artus Health Clinic, Vancouver; ⁵University of Calgary, Calgary; ⁶Ottawa Hospital, Ottawa; ⁷Université de Sherbrooke, Sherbrooke; ⁸Medicine, University of Alberta, Edmonton; ⁹Lawson Health Research Institute, London; ¹⁰CaRE Arthritis Ltd., Edmonton, Canada

Background: In current rheumatology practice, the circumstances that prompt clinicians to order MRI in patients with suspected axSpA are unclear. In addition, the manner and degree to which MRI changes diagnostic ascertainment of axSpA in patients presenting with undiagnosed back pain has not been formally studied.

Objectives: 1. To determine whether any particular patient demographic and/or disease characteristics are associated with rheumatologist ordering of MRI. 2. To assess the impact of MRI evaluation on diagnostic ascertainment of axial SpA in patients presenting with undiagnosed back pain.

Methods: The multicenter Screening for AxSpA in Psoriasis, Iritis, and Colitis (SASPIC) Study is aimed at early detection of axial SpA in consecutive patients presenting with undiagnosed back pain to the rheumatologist. Consecutive patients with any one of psoriasis, iritis, or colitis diagnosed by the relevant specialist undergo routine evaluation by a rheumatologist. The rheumatologist determines the presence/absence of axial SpA and the degree of confidence in the diagnosis (–10 (definitely not SpA) to +10 (definite SpA) on a NRS) at 3 consecutive stages: 1. After the clinical evaluation; 2. After the results of labs (B27, CRP) and radiography; 3. After the results of MRI. Differences in patient demographics and/or disease characteristics between those who did or did not have MRI were assessed by chi-square and t-tests. We assessed the degree of diagnostic reclassification after each step at the categorical level (axial SpA yes/no) and also according to the degree of confidence.

Results: 244 patients (51.6% male, mean age 34.6 years, mean age at symptom onset 27.4 years, mean back pain duration 7.1 years, B27 +37.2%) were referred with AAU (29.9%), psoriasis (21.7%), Crohn's colitis (32.8%), ulcerative colitis (19.3%). A diagnosis of axSpA was made in 67.5% after stage 1 clinical evaluation and in 56.4% at stage 2 after review of the labs and radiography. MRI evaluation varied across sites (mean(range)): 73% (16.7%>100%) of patients, ordered in 141 patients, and significantly more frequently in those with probable inflammatory type back pain (probability >5 (0–10 scale) ($p=0.04$), when radiography was mNY- ($p=0.005$) and in those without Crohn's colitis ($p=0.001$). No differences in ordering of MRI were noted according to age, gender, disease duration, back pain severity, NSAID response, B27 status, or CRP level. In patients with completed MRI scans, a diagnosis of axSpA was made in 70.5% after stage 1 clinical evaluation, in 56.4% after review of the labs and radiography, and in 47.3% after MRI review. 24 (18.6%) were recategorized from SpA to non-SpA and 4 (3.1%) from non-SpA to SpA. Confidence in diagnostic categorization was increased after MRI.

Stage of Assessment	axSpA present n (%)	Mean (SD) confidence	axSpA absent n (%)	Mean (SD) confidence
1. Clinical only	n=91 (70.5)	5.5 (2.4)	n=38 (29.5)	3.4 (3.2)
2. Clinical plus labs and radiography	n=81 (62.8)	5.9 (2.9)	n=48 (37.2)	5.1 (3.6)
3. Clinical, labs, radiography, plus MRI	n=61 (47.3)	7.5 (2.9)	n=68 (52.7)	7.5 (2.5)

Conclusions: In a setting of undiagnosed back pain and higher risk for axial SpA, use of MRI is primarily driven by negative radiography. MRI was primarily helpful in ruling out SpA and reducing false positives.

Disclosure of Interest: None declared

DOI: 10.1136/annrheumdis-2018-eular.4841