Results: Inter-reader reliability was overall moderate for joint scores and poor for enthesis scores; however, among the 3 musculoskeletal radiologists, enthesis scores were as reliable as joint scores (Table). Reliability did not improve between the first and second round, possibly because patients with several very conspicuous inflammatory lesions were selected as cases in the first round.

Abstract SAT0671 – Table 1. Inter-reader reliability of scoring inflammation of peripheral joints and entheses (Cohen's kappa with squared weights for individual scores, ICC(3,1), agreement, for sum scores). All values are median (IQR; range) of all reader pairs (36 reader pairs for 9 readers, 91 reader pairs for 14 readers, 3 reader pairs for 3 readers [values for 3 reader pairs provided]).

	Kappa for osteitis scores (joints)	Kappa for synovitis scores (joints)	Kappa for osteitis scores (entheses)	Kappa for soft tissue inflamm. (entheses)	Kappa for all sites combined	ICC
First round (9 readers)	0.86 (0.81-0.90; 0.67-0.98)	0.63 (0.43-0.84; 0.26-0.94)	0.51 (0.27-0.63; 0.03-0.84)	0.36 (0.17-0.74; -0.08-0.92)	0.67 (0.62-0.75; 0.47-0.90)	0.64 (0.28-0.89; -0.26-1.00)
Second round (9 readers that had participated in first round)	0.61 (0.52-0.67; 0.36-0.80)	0.66 (0.61-0.70; 0.53-0.82)	0.33 (0.26-0.42; 0.02-0.69)	0.21 (0.12-0.31; -0.01-0.62)	0.53 (0.50-0.58; 0.42-0.70)	0.68 (0.60-0.82; 0.47-0.99)
Second round (all 14 readers)	0.48 (0.36-0.60; 0.10-0.80)	0.57 (0.45-0.66; 0.24-0.82)	0.32 (0.18-0.44; -0.06-0.80)	0.22 (0.12-0.35; -0.06-0.62)	0.47 (0.40-0.54; 0.25-0.72)	0.60 (0.30-0.75; -0.02-0.99)
Second round (3 musculoskeletal radiologists)	0.50 / 0.32 / 0.26	0.68 / 0.58 / 0.54	0.53 / 0.67 / 0.68	0.51 / 0.58 / 0.45	0.57 / 0.54 / 0.49	0.70 / 0.52 / 0.23

Conclusions: It is feasible to perform online multi-reader scoring exercises of whole-body MRI using a web-based scoring interface. MRI readers need to be further trained and calibrated in the semiquantitative scoring approach used to increase inter-reader reliability.

REFERENCE:

- [1] Østergaard M, et al. *J Rheumatol* 2017;44:1699–1705.

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SAT0672 IS ULTRASOUND REMISSION ACHIEVABLE IN PATIENTS WITH EARLY RHEUMATOID ARTHRITIS?

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Background: In rheumatoid arthritis (RA) the "window of opportunity" has a crucial role for better long-term outcomes.¹ The ACR/EULAR remission criteria for RA are mostly represented by clinical parameters, while ultrasound (US) is not included.² However, in early diagnosed and early treated patients, who fulfil the remission criteria, residual US modifications can be identified.³

Objectives: The aim of this study was to investigate whether significant US-detectable differences between early RA (ERA) patients treated for one year and healthy controls (HC) are present.

Methods: We enrolled in this cross-sectional study consecutive patients with ERA at 1 year after having initiated RA disease-modifying (DMARD) therapy and who had received treatment following RA recommendations. Only patients who had fulfilled EULAR/ACR 2010 criteria for RA⁴ and with symptoms duration of less than 1 year at treatment initiation were included. US exams were performed in 10 joints bilaterally (wrist, MCP II-V) by using both gray-scale and Doppler for evaluating synovitis was graded according to a semi-quantitative 4-point scale (0–3). A total US score for synovitis was calculated by adding the values recorded at each joint site. The presence of erosions was also recorded. Finally, US results obtained in patients were compared to those detected in HC.

Results: 84 subjects were enrolled – 45 ERA patients and 39 HC. In ERA patients the mean duration of symptoms prior to diagnosis was 3.5±3.5 months. The demographic, clinical and US data are reported in table 1.

Abstract SAT0672 – Table 1. Demographic, clinical and US data for ERA patients and HC [n (%), mean±SD or median (IQR)]

Parameters	ERA (n=45)	HC (n=39)	p
Gender (Female)	28 (62.2%)	25 (64.1%)	0.859
Age	56.16±19.91	46.59 ±12.93	0.003
VAS pain	19 (10.25–30)	0 (0–2)	<0.001
US score	4 (1.5–6.5)	1 (0–3)	<0.001
Erosions	23 (51.11%)	0 (0%)	<0.001

As expected, the values of visual analogue scale (VAS) for pain and of the total US score and the incidence of erosions were significantly higher in ERA patients than in HC. The values of the US score correlated with the presence of erosions ($r_s=0.427$, $p<0.001$) as well as with the values of acute phase reactants (CRP: $r_s=0.539$, $p=0.412$ and ESR: $r_s=0.412$, $p=0.005$). VAS of disease activity reported by patients ($r_s=0.473$, $p<0.001$) and physician ($r_s=0.412$, $p<0.001$).

Conclusions: Patients with RA, who had been early diagnosed and early treated, after 1 year of tight control had still US inflammatory and erosive changes compared to HC. US assessment gives an added value to clinical evaluation in ERA, for its capacity to detect residual inflammatory abnormalities, even under optimised treatment and consequent structural lesions.

REFERENCES:

- [1] van Nies JAB, et al. *Ann Rheum Dis* 2015;74:806–812.
[2] Bykerk VP1, Massarotti EM. *Rheumatology* 2012;51(Suppl 6):vi16–20.
[3] Vergara F, et al. *Reumatol Clin* 2017 Mar 18.
[4] Aletaha D, et al. *Arthritis Rheum* 2010;62:2569–2581.

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SAT0673 MAGNETIC RESONANCE IMAGING IN THE DIAGNOSIS OF AXIAL SPONDYLOARTHRITIS: A SYSTEMATIC LITERATURE REVIEW

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Background: Magnetic resonance imaging (MRI) is an essential tool in the diagnosis and management of axial spondyloarthritis (axSpA). However, a recent survey showed variable practices in the use of MRI across the UK.¹ To inform a joint rheumatology and radiology consensus exercise aimed at standardising practice, we systematically reviewed the literature regarding the use of MRI in the diagnosis of axSpA.

Objectives: We aimed to answer three research questions:

1. How does the choice of anatomical region influence diagnostic performance?
2. How do MRI acquisition parameters influence diagnostic performance?
3. Which lesion, or combination of lesions, is most sensitive and specific for the diagnosis of axSpA?

Methods: MEDLINE (via Pubmed) and EMBASE (via Ovid) databases were searched using previously-reported terms.² These terms identified studies including adult patients with clinically suspected axSpA undergoing MRI, where a diagnosis of axSpA was used as an outcome and where patients with a negative test for SpA were used as controls. We included studies performed between January 2013 and March 2017, in addition to those included in a previous systematic literature review, which included all studies up to January 2013.² Search results were screened by title and abstract, and the included studies were subject to detailed review and quality assessment using the QUADAS-2 tool.³

Results: The combined search resulted in a total of 8114 studies; 34 of these were finally selected for inclusion.

Five studies evaluated the added value of spinal MRI over SIJ MRI alone, with variable results depending on the cohort.

Three studies addressed the effect of sequence choice on diagnostic accuracy, demonstrating comparable utility of fat-saturated T2-weighted (T2w) sequences and STIR imaging, and suggesting T2w Dixon imaging as a potential alternative