

# Medical or Research Professionals/Clinicians

Topic area: *Clinical topics by disease*

Topic: *20. Spondyloarthritis - clinical aspects (other than treatment)*

Submission N°: EULAR18-5806

## RECOMMENDATIONS FOR ACQUISITION AND CONSIDERATIONS FOR INTERPRETATION OF MRI OF THE SPINE AND SACROILIAC JOINTS IN THE INVESTIGATION OF AXIAL SPONDYLOARTHRITIS IN THE UK

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**My abstract has been or will be presented at a scientific meeting during a 12 months period prior to EULAR 2018:** No

**Is the first author applying for a travel bursary and/or an award for undergraduate medical students?:** No

**Background:** The use of magnetic resonance imaging (MRI) has been instrumental in the early recognition and characterization of axial spondyloarthritis (axSpA). However, a recent survey in the UK showed that there is diverse practice in the use of MRI and limited knowledge of MRI features suggestive of axSpA among radiologists [1].

**Objectives:** To develop clinical practice recommendations for the acquisition and interpretation of MRI of the spine and sacroiliac joints (SIJs) in the investigation of axSpA through a collaboration between rheumatologists and radiologists.

**Methods:** A working group comprising 9 rheumatologists and 9 musculoskeletal radiologists with an interest in axSpA was established. The EULAR standardised operating procedures were followed [2]. Two working group meetings were held, the first to define the scope of the exercise and the second to review the results of the Systematic Literature Review that informed the recommendations. An anonymised Delphi process was used to formulate the final set of recommendations. The level of evidence and strength of recommendation was added to the recommendations. The level of agreement by working group members was assessed using a numerical rating scale.

**Results:** A total of 2 overarching principles and 7 recommendations were formulated (Figure). The first 3 recommendations address the MRI acquisition protocol, namely anatomical areas to be scanned and sequences to be used. The remaining 4 recommendations address the interpretation of active and structural lesions of the spine and SIJs.

**Image/graph:**

Figure: Overarching principles (OP) and recommendations (Rec)	
OP1	The diagnosis of axSpA is based on clinical, laboratory and imaging features.
OP2	Some patients with axSpA have isolated inflammation of the SIJs or spine.
Rec1	When requesting an MRI for suspected axSpA, imaging of both the SIJs and the spine is recommended.
Rec2	T1-weighted and fat-suppressed, fluid sensitive sequences (including STIR, fat-saturated T2 or Dixon methods) are recommended when requesting an MRI for suspected axSpA.
Rec3	The minimum protocol when requesting an MRI for suspected axSpA should include sagittal images of the spine with extended lateral coverage and images of the SIJs which are coronal to the joint.
Rec4	In the SIJs, the presence of bone marrow oedema, fatty infiltration or erosion is suggestive of the diagnosis of axSpA. The presence of more than one of these features increases the diagnostic confidence of axSpA.
Rec5	In the spine, the presence of multiple corner inflammatory lesions and/or multiple corner fatty lesions increases the diagnostic confidence of axSpA.
Rec6	In the SIJs and/or spine the presence of characteristic new bone formation increases the diagnostic confidence of axSpA.
Rec7	The full range and combination of active and structural lesions of the SIJs and spine should be taken into account when deciding if the MRI scan is suggestive of axSpA or not.

**Conclusions:** A UK joint rheumatology and radiology consensus on the most appropriate MRI acquisition protocol and interpretation of images in the investigation of axSpA was achieved. This consensus will help standardise practices and ensure prompt and effective patient management in the diagnosis and treatment of axSpA.

**References:** [1] Bennett et al. J Rheumatol 2017. [2] van der Heijde et al. Ann Rheum Dis 2015.

**Acknowledgements:** This work was financially supported by the British Society for Spondyloarthritis (BRITSpA).

**Disclosure of Interest:** None declared