Summary of MRI protocol

What to request:

Useful protocol for evaluating the spinal column

1. Sagittal T1 and STIR of the whole spine.
2. Coronal oblique T1 and STIR of the sacroiliac joints.
ASAS/OMERACT definition of a ‘positive’ sacroiliac joint MRI

**Required:**
MRI evidence of bone marrow inflammation must be present and the features required for the definition of active sacroiliitis on MRI are:

1. Bone marrow oedema (BMO) on a T2-weighted sequence sensitive for free water (STIR or T2FS) or bone marrow contrast enhancement on a T1-weighted sequence (such as T1FS post-Gd).
2. Inflammation must be clearly present and located in a typical anatomical area (subchondral bone).
3. MRI appearance must be highly suggestive of SpA.

**Not required:**
Other findings related to sacroiliitis may be observed on MRI but are not required to fulfil the imaging criterion ‘active sacroiliitis on MRI’:

1. The sole presence of other inflammatory lesions such as synovitis, enthesitis or capsulitis without concomitant BMO is not sufficient for the definition of ‘active sacroiliitis on MRI’.
2. In the absence of MRI signs of BMO, the presence of structural lesions such as fat metaplasia, sclerosis, erosion or ankylosis does not meet the definition of ‘active sacroiliitis on MRI’.

**Guidelines for MRI interpretation**

- BMO representing an inflammatory lesion that meets the criterion for a positive sacroiliac joint will usually be easily seen on at least two consecutive slices of an MRI scan.
- Detection of inflammation on a single slice may be sufficient for the criterion ‘highly suggestive of SpA’ if there is more than one inflammatory lesion present.

For full guidelines on the application of the definition of a positive MRI (active sacroiliitis) for the classification of axial SpA, please refer to full publication.

ASAS/OMERACT definition of a positive spinal MRI

1. The presence of ≥3 corner inflammatory lesions.
2. Evidence of fatty deposition at several vertebral corners was found to be suggestive of axial SpA, especially in younger adults.

Whole spine MRI is not only useful diagnostically, by identifying inflammatory and post-inflammatory lesions in the spine. It is also useful prognostically by identifying patients with spinal lesions (who are more likely to progress radiographically) and it can also help to predict response to anti-TNF therapy.

SpA – Spondyloarthritis
MRI – Magnetic resonance imaging
STIR – Short tau inversion recovery

ASAS – Assessment of SpondyloArthritis international Society
OMERACT – Outcome Measures in Rheumatology
