**Audit on MRI Protocol and Reporting Descriptors for Suspected Inflammatory Sacroiliitis**

**Descriptor:**

Audit of MRI protocol and reporting descriptors for suspected inflammatory sacroilitis.

**Background:**

Sacroiliitis demonstrated by MRI is an integral part of the ASAS criteria for axial spondyloarthritis (AS) (1). The diagnosis of early sacroiliitis by MRI is based on the evaluation of active and structural postinflammaory changes according to the ASAS classification criteria (2).

MRI is known to be the most sensitive imaging modality to diagnose sacroiliitis by visualizing inflammatory lesions before any structural changes demonstrated on radiograph or CT (3). MRI is also the only imaging modality that can detect bone marrow oedema, which is the hallmark and key to the diagnosis of inflammatory sacroiliitis (4).

Optimisation of imaging and precision of reporting enables treatment with biologics and other disease modifying drugs. MRI is recommended as the first imaging examination for suspected sacroiliitis in RCR iRefer (6).

The ESSR Arthritis Subcommittee published a guideline regarding the standards of MRI protocol and reporting descriptors for inflammatory sacroilitis to be achieved (2). Contrast-enhanced MRI is no longer needed to make a diagnosis of sacroiliitis as stated by the 2015 evidence-based EULAR recommendations (5).

## The Cycle

**The standard:**

1. MRI sequences indicated for suspected inflammatory sacroiliitis should include coronal oblique T1-weighted, coronal oblique STIR/TIRM and visualization in two perpendicular planes. No contrast administration is needed.

2. MRI reports should contain a description of active (bone marrow edema, capsulitis, synovitis and enthesitis) and structural changes (subchondral sclerosis, bone erosions, periarticular fat deposition, bony bridge, ankyloses).

3. The site, number and location of any lesion found should be documented.

**Target:**

100% of MRI protocol and reports for inflammatory sacroiliitis should meet these standards.

## Assess local practice

**Indicators:**

The percentage of MRI protocol and reports which adhere to each of the standards.

**Data items to be collected:**

1. Does the MRI protocol encompass the correct sequences and planes?

2. Is there a correct documentation of the presence or absence of inflammatory lesions and structural changes?

3. Is there a correct documentation of number, site and location of any lesion detected?

**Suggested number:**

MRI scans indicated for inflammatory sacroilitis for both pediatrics and adults should be collected and reviewed. All cases performed during the preceding six months, or the most recent 50 consecutive cases (whichever number is greater).

**Suggestions for change if target not met:**

1. Publicise the standards of MRI protocol and reporting for sacroilitis, through in-person departmental radiology meetings and dissemination of written material to radiologists and sonographers.

2. Create a structured MRI report template indicated for inflammatory sacroiliitis for use during electronic report transcription, in order to improve standardisation of reporting descriptors.

3. Re-audit three to six months after intervention, to assess for improvement in practise. Continue the audit spiral, to ensure sustained compliance with the standards.

**Resources:**

1. Radiology information system (RIS) to review administrative details and reports.

2. Picture archiving computer system (PACS) to review MRI protocol and images.

3. Statistical computer software, such as Microsoft Excel, for recording and analysing data.

**References:**

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(3) Lambert RG, Bakker PA, van der Heijde D, et al. Defining active sacroiliitis on MRI for classification of axial spondyloarthritis: update by the ASAS MRI working group. Ann Rheum Dis. 2016;75(11):1958-1963. doi:10.1136/annrheumdis-2015-208642

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