

The OMERACT Magnetic Resonance Imaging Inflammatory Arthritis Group — Advances and Priorities

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ABSTRACT. This article updates the work and research priorities of the OMERACT working group on magnetic resonance imaging (MRI) in inflammatory arthritis, as presented to the OMERACT 8 meeting in Malta in May 2006. This work focused on testing the reliability of dedicated extremity MRI in rheumatoid arthritis and on the initial steps in the development of an MRI score for peripheral psoriatic arthritis. (J Rheumatol 2007;34:852–3)

Key Indexing Terms:
RHEUMATOID ARTHRITIS

EXTREMITY MAGNETIC RESONANCE IMAGING
PSORIATIC ARTHRITIS

Since 1998 an international collaborative group under the OMERACT banner have iteratively developed a scoring system for magnetic resonance imaging (MRI) to assess rheumatoid arthritis (RA) pathology according to criteria specified by the OMERACT filter. The RA MRI scoring system (RAMRIS) was presented at OMERACT 6, together with MRI definitions of relevant RA pathologies and a “core set” of basic MRI sequences. RAMRIS was developed so that MRI out-

comes in future RA studies could be more easily compared¹, and was endorsed in this capacity by OMERACT 6 participants². An update on studies of RAMRIS validity, reliability, and responsiveness was presented at OMERACT 7³. Data on sensitivity to change have been published^{4,5}.

Following OMERACT 6, the group developed an atlas of standard reference images. After much work, with an initial presentation at OMERACT 7³, the EULAR-OMERACT RA MRI reference image atlas was published⁶. The influence of this new tool as a training aid and facilitator of improved interreader reliability remains to be established.

The use of MRI outcome measures in RA proof-of-concept clinical trials is gradually gaining acceptance⁷, with such trials evaluating bone erosions, bone edema, and synovitis. However, new challenges are arising as a result of improvements in technology, making ongoing evaluation necessary. In particular, dedicated extremity MRI (E-MRI) units are being used increasingly in rheumatology. The operating characteristics and clinical utility of E-MRI outcomes are yet to be defined, although publications have already appeared on validation against 1.5 T data^{8–10}. The OMERACT 7 audience supported evaluation of E-MRI by application of the OMERACT filter.

The use of MRI in clinical trials of other inflammatory arthritides has also grown. Although the MRI features of peripheral joint pathology in psoriatic arthritis (PsA) have been described (including synovitis, enthesal abnormalities of capsule and bone, bone erosions, and subcutaneous edema)¹¹, there is no well accepted semiquantitative scoring system for outcome assessment. As was the case with RA, a number of scoring methods have been described, with limited data on their psychometric properties. The development of a novel scoring system seems appropriate for this condition via an iterative process similar to that used for RA.

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OMERACT 8 Special Interest Group session on MRI in inflammatory arthritis

In 2004, after the development of the EULAR-OMERACT RA MRI reference image atlas, the group decided to focus on 2 main areas of interest: dedicated extremity MRI in RA and MRI of peripheral joints in PsA. During the OMERACT 8 meeting in Malta, May 2006, a series of meetings were held by the working group, focusing on interpretation of 2 E-MRI reliability studies and the initial PsA MRI exercise. At the MRI in RA Special Interest Group plenary session, recent advances including results of the exercises were presented (see the 3 following reports for details¹²⁻¹⁴) and future research priorities were discussed.

Conclusion and future research priorities

Overall, the MRI group aims for continued improvement in RA outcome measurement, with an expanding focus on peripheral MRI. The growth of MRI as an outcome measure in other inflammatory diseases, such as PsA, provides scope for applying the rigorous OMERACT methodology to these conditions. Based on the results of the exercises and discussions at OMERACT 8, future research priorities of the group include further testing of E-MRI, and investigating sensitivity to change and discrimination. Within PsA, developing MRI definitions of important PsA pathologies is a priority, as is defining a “core set” of basic MRI sequences and, through a series of exercises, a scoring system (PAMRIS) for evaluation of peripheral PsA.

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