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

MIKKEL ØSTERGAARD, FIONA McQUEEN, PAUL BIRD, CHARLES PETERFY, ESPEN HAAVARDSHOLM, BO EJBJERG, MARISSA LASSERE, PHILIP O'CONNOR, PAUL EMERY, JOHN EDMONDS, HARRY GENANT, and PHILIP G. CONAGHAN

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:
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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 outcomes in future RA studies could be more easily compared[1], and was endorsed in this capacity by OMERACT 6 participants[2]. An update on studies of RAMRIS validity, reliability, and responsiveness was presented at OMERACT 7[3]. 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 7[3], the EULAR-OMERACT RA MRI reference image atlas was published[6]. 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 acceptance[7], 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, entheseal 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.

From the Departments of Rheumatology and Radiology, Copenhagen University Hospitals at Herlev and Hvidovre, Copenhagen, Denmark; Department of Rheumatology, Auckland University, Auckland, New Zealand; Department of Rheumatology, St. George Hospital, University of NSW, Sydney, Australia; Synarc Inc., San Francisco, California, USA; Diakonhjemmet Hospital, University of Oslo, Oslo, Norway; Department of Radiology, Chapel Allerton Hospital, Leeds, UK; and the Academic Unit of Musculoskeletal Disease, University of Leeds, Leeds, UK.

M. Østergaard, MD, PhD, DMSc, Professor in Rheumatology/Arthritis, Copenhagen University Hospitals at Herlev and Hvidovre, Copenhagen; F. McQueen, MD, FRACP, Associate Professor in Rheumatology, Department of Rheumatology, Auckland University; P. Bird, BMed (Hons), FRACP, PhD, Grad Dip MRI, Senior Lecturer, University of NSW, Sydney; C. Peterfy, MD, PhD, Chief Medical Officer, Synarc Inc.; E.A. Haavardsholm, MD, Research Fellow, Diakonhjemmet Hospital, University of Oslo; B. Ejbjerg, MD, PhD, Senior Registrar, Copenhagen University Hospital at Herlev; M. Lassere, MB, BS, Grad Dip Epi, PhD, FRACP, FAFPHM, Associate Professor in Medicine, Department of Rheumatology, St. George Hospital, University of NSW; P. O'Connor, MB BS, MRCP, FRCR, Consultant Skeletal Radiologist, Department of Radiology, Chapel Allerton Hospital, Leeds; P. Emery, MA, MD, FRCP, ARC Professor in Rheumatology, Academic Unit of Musculoskeletal Disease, University of Leeds; J. Edmonds, MB, BS, MA, FRACP, Director, Professor of Rheumatology, Department of Rheumatology, University of NSW; H. Genant, MD, FACR, FRCR, Professor of Radiology, University of California, San Francisco; P.G. Conaghan, MB BS, PhD, FRACP, FRCP, Professor of Musculoskeletal Medicine, Academic Unit of Musculoskeletal Disease, University of Leeds.

Address reprint requests to Dr. M. Østergaard, Department of Rheumatology, Copenhagen University Hospital at Hvidovre, Kettegaard alle 30, DK-2650 Hvidovre, Denmark. E-mail: mo@dadlnet.dk.

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 details[12-14]) 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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