THURSDAY, 13 JUNE 2019

15:30:00 – 17:00:00

EULAR Projects in investigative rheumatology

SP0095

EULAR POINTS TO CONSIDER ON BIG DATA

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Background: There are tremendous opportunities for health research propelled by the recent expansion of big data and artificial intelligence. However, this is an emergent area where recommendations are needed.

Objectives: The objective was to develop points to consider for the use of big data by computational modelling, machine learning and artificial intelligence in rheumatic and musculoskeletal disorders (RMDs).

Methods: Based on a literature review of the current status of big data in RMDs and in other fields of medicine, on individual interviews of selected experts, and on the opinion of experts in a face-to-face meeting, points to consider were formulated, discussed and finalised by an international group of 14 experts from a range of disciplines including computer science and artificial intelligence. Levels of evidence and strengths of recommendations were allocated.

Results: The document comprises 5 overarching principles and 9 points to consider. The overarching principles address the definition of big data and artificial intelligence, types of big data, and ethical and general principles for dealing with big data in RMDs. The points to consider cover aspects of data sources and data collection, discussing privacy by design, use of specific data platforms, and data sharing; data analyses in particular through artificial intelligence and machine-learning; they refer to big data as a moving field in need of correct reporting of methods used and of benchmarking; and data interpretation and implementation in clinical practice.

Conclusion: These EULAR points to consider provide a framework for the use of big data in RMDs.

Disclosure of Interests: None declared

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THURSDAY, 13 JUNE 2019

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MRI

SP0096

MRI OF LARGE JOINTS IN ARTHRITIS: HOW TO DO AND HOW THEY ARE DIFFERENT FROM SMALL JOINTS?

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The appendicular skeleton is frequently involved in patients with rheumatic diseases.

Involved joints are affected by inflammation of the synovium and joint's entheses. Imaging depicts joint derangement and generally mirrors the pathophysiology of the disease.

MRI is considered the imaging modality of choice for the detection of acute joint inflammation as well as its structural sequela.

Thus, MRI plays an important role in identifying, monitoring disease activity and the patient follow-up.

The MRI features of inflammatory arthritis are well described, especially in the small appendicular joints of the hands and feet and include synovitis, erosions, osteitis, tenosynovitis and erosions.

In the current presentation, the typical MRI properties of large joints arthritis in different rheumatic entities will be presented with special focus on the difference from inflammatory findings in smaller appendicular joints.

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SP0097

MRI OF ENTHESITIS: HOW TO DO AND WHAT TO LOOK FOR

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Enthesitis, inflammation at the insertion site of tendon, ligament or joint capsule into bone, is considered a key pathological feature in spondyloarthritis (SpA) and

psoriatic arthritis (PsA)[1]. Compared to conventional assessment of enthesitis using clinical scores, MRI detects both soft tissue and intra-osseous abnormalities in active enthesitis, potentially aiding early diagnosis and outcome measurement in SpA and PsA[2]. With the advent of treat-to-target concept and novel therapies, objective and sensitive monitoring of response of enthesitis to therapy is desirable, and a validated MRI scoring system would be a useful adjunct to clinical practice as well as providing additional information as an outcome measure in clinical trials.

The Outcome Measures in Rheumatology (OMERACT) MRI in Arthritis Working Group recently undertook a systematic literature review (SLR) aiming to critically evaluate the published literature for available methods of evaluating enthesitis using MRI in SpA and PsA patients, describing the MRI variables, definitions and scoring systems used to diagnose and monitor enthesitis[3]. Considerable limitations was found regarding standardisation of MRI enthesitis definitions across studies and validity of available semi-quantitative scores as outcome measures. The findings suggested a need for reliable and validated MRI scoring system for enthesitis.

Subsequently, The OMERACT MRI group developed consensus definitions of key pathologies and three heel enthesitis multi-reader scoring exercises were done, separated by discussion, training and calibration [4]. In a final exercise, median pairwise single-measures intra-class correlation coefficients (ICCs; patient-level) for enthesal inflammation status/change scores were 0.83/0.82 for all readers. For radiologists and selected rheumatologists ICCs were 0.91/0.84 and quadratic-weighted kappas (lesion-level) 0.57-0.91/0.45-0.81. It was concluded that the proposed definitions and heel enthesitis scoring system (OMERACT HEMRIS) are reliable among trained readers and promising for clinical trials [4].

This talk will briefly review the evidence behind the use of MRI for diagnosis and monitoring enthesitis, describe the recently developed OMERACT consensus definitions of key pathologies, and provide examples of these pathologies, aiming for the attendees to learn to be able to recognize them. Finally, an interactive quiz using cases for audience review will be undertaken to test this ability.

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SP0098

CRYSTAL ARTHROPATHIES: IS THERE A ROLE FOR MRI?

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The plain radiographic features of gout are well known. However, the sensitivity of plain radiographs alone for the detection of signs of gout is poor in acute disease. Dual-energy computed tomography (DECT) and ultrasonography fill the gap for early and specific detection. However, there are instances in which MRI of the painful joints was already acquired. Therefore, it is crucial to know the imaging findings of gout in MRI. MRI per se is not suitable for imaging the calcified bone or soft tissue calcifications. However, there are special techniques such as gradient echo sequences or susceptibility-weighted imaging (SWI) to visualize calcifications. Furthermore, the inflamed joint with all its characteristics such as synovitis, tenosynovitis, and erosions is easily accessible by MRI. Specific findings in the