

Inflammatory arthropathy:

Psoriatic arthritis

Sabine Weckbach, MD

Department of Clinical Radiology, University Hospital Munich, Germany

Psoriasis vulgaris is one of the most common autoimmune diseases with a prevalence estimated from 0.3 to 1%. On average, 10-30% of patients with psoriasis develop psoriatic arthritis. Joint disease appears about 10 years after the first signs of psoriasis. Rarely there is psoriatic arthritis without skin disease.

Psoriatic arthritis is an inflammatory disease with a broad spectrum of inflammatory changes in multiple locations of the body, ranging from axial to peripheral disease. The main musculoskeletal findings are enthesitis and adjacent soft tissue inflammation, synovitis, osteitis, dactylitis, new bone formation and osteodestruction. The frequent spinal involvement is similar to that seen in ankylosing spondylitis. Unilateral sacroiliitis, asymmetry of syndesmophytes and development of parasyndesmophytes may distinguish PsA from ankylosing spondylitis. In the hands and feet it typically involves the distal interphalangeal joints which may allow the differentiation from rheumatoid arthritis.

Over the last years MRI is becoming the imaging method of choice for the initial diagnosis since it has the possibility to detect early and even subtle inflammatory changes. Early administration of disease modifying anti-rheumatic drugs and especially tumor necrosis factor alpha-inhibitors has proven to be highly effective to stop erosive changes and prevent joint damage. Therefore they are used as potent medication in active PsA and thus, early diagnosis and exact assessment of disease severity are mandatory for a fast initiation of these therapies.

In general clinical practice, inflammatory joints / regions in patients with PsA are assessed by clinical exam and radiography. However, clinical exam, especially of enthesitis, is often inconclusive and the exact assessment of the total disease extent is difficult. Radiography only detects changes at a relatively late stage of disease and is inferior to MRI in the evaluation of the disease extent and severity. Scintigraphy has been widely used, however, due to its lack of specificity it is more and more replaced by MRI and ultrasound which allow a detailed demonstration of anatomy and pathologies. Sonography provides excellent tissue resolution

and is able to assess synovitis, joint effusion, erosions and enthesitis in joints regions with superficial position. Yet, ultrasound cannot assess enthesitis of the spine and enthesitis associated osteitis in larger joints, e.g. the knee and hip. However, by MRI it is possible to directly visualize active inflammation including synovial, cartilaginous and bony changes. It is very well suited for the visualisation of enthesitis as it demonstrates both soft-tissue and osseous changes. In the spine, MRI is able to identify changes both in the anterior and posterior parts, such as spondylodiscitis, enthesitis and arthritis at the smaller vertebral joints. MRI is also capable of detecting peripheral enthesal changes such as Achilles tendinitis and plantar fasciitis. In addition, MRI is the only imaging method to directly visualize both active and chronic changes simultaneously.

Due to total body coverage whole body MRI is an excellent tool to sensitively assess the course of multifocal disease under therapy. It gives not only an excellent overview of the anatomy and pathology of the spine, the sacroiliac and peripheral joints as well as of most entheses, it also allows a sensitive detection and exact localization of inflammatory processes present at multiple sites. By this, it enables us to estimate the total disease load and disease activity and holds potential for follow up exams under therapy.

Summary

In this course, participants will learn

1. about the role of MRI in psoriatic arthritis compared to other imaging modalities,
2. to design optimal MR protocols for the assessment of psoriatic arthritis ,
3. to recognize typical imaging features for psoriatic arthritis and interpret images of patients with psoriatic arthritis
4. to differentiate typical features of psoriatic arthritis from other inflammatory joint diseases / forms of spondyloarthropathies and
5. about the potentials of whole body MRI.