

and Rheumatology, Academic Medical Center/University of Amsterdam, Amsterdam, The Netherlands; <sup>2</sup>Department of Radiology, Academic Medical Center/University of Amsterdam, The Netherlands; <sup>3</sup>Rheumatic Diseases Division, Department of Internal Medicine, UT Southwestern Medical Center, Dallas, Texas, USA

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**Background and objectives** A MRI study of knee arthritis demonstrated that enthesitis was more frequently observed in established SpA than RA, leading to the hypothesis that enthesitis rather than synovitis is the primary lesion in SpA.<sup>1,2</sup> Although this hypothesis provides a useful conceptual framework to investigate the pathophysiology of SpA, very few studies have confirmed these findings. Here, the authors investigated the presence of enthesitis in the HLA-B27/Huβ2m tg rats.<sup>3</sup> and in early untreated human SpA.

**Material and methods** Histological samples were obtained at different stages of spontaneous tail spondylitis (n=10) and peripheral arthritis (n=9) in HLA-B27/Huβ2m tg rats. Paraffin sections were stained with H&E or toluidine blue and evaluated by two independent observers. Synovial biopsies and MRI were performed in 41 patients with early (less than 1 year) untreated knee or ankle arthritis, who were diagnosed with SpA (n=13), RA (n=20) or crystal arthropathy (n=8) at follow-up. MRI evaluation of enthesitis, synovitis and osteitis and immunohistochemical characterisation of synovitis (CD3, CD22, CD68, CD163 and von Willebrand Factor) were performed by two observers blinded to diagnosis.

**Results** Experimental HLA-B27-related spondylitis and peripheral arthritis were characterised by a progressive inflammatory infiltration of the stromal tissues with mono and polymorphonuclear cells. In moderate to severe inflammation, this was associated with progressive destruction of bone and cartilage, inflammatory infiltration of the underlying bone, and enchondral bone formation. The enthesal sites of the axial and peripheral joints were not affected as they did neither display signs of inflammation nor osteoproliferation. In human early untreated arthritis immunohistochemical analysis revealed a similar degree of synovitis in SpA and RA, with a significant increase of sublining CD163 in SpA. On MRI, the synovitis score was even higher in SpA (1.3; SD 0.7) than RA (0.7; SD 0.6). In contrast, there were no differences in prevalence of enthesitis as assessed by peri-enthesal focal tissue oedema (67% vs 75%), peri-enthesal focal bone marrow oedema (0% vs 10%) and enthesal enhancement (46% vs 47%). Also the number of peri-enthesal lesions did not differ between SpA and RA.

**Conclusions** This combined histological and imaging evaluation of experimental and early human disease show that enthesitis is not a specific feature of SpA, which challenges the concept that enthesitis would be the primary immunopathological lesion.

## REFERENCES

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## 5 IS ENTHESITIS THE PRIMARY IMMUNOPATHOLOGICAL LESION IN HLA-B27-ASSOCIATED EXPERIMENTAL AND HUMAN SPONDYLOARTHRITIS?

Jacqueline E Paramarta,<sup>1</sup> Christiaan van der Leij,<sup>2</sup> Ioana Gofita,<sup>1</sup> Nataliya Yeremenko,<sup>1</sup> Marleen G van de Sande,<sup>1</sup> Maria J de Hair,<sup>1</sup> Paul P Tak,<sup>1</sup> Joel D Taurog,<sup>3</sup> Mario Maas,<sup>2</sup> Dominique L Baeten,<sup>1</sup> Leonie M van Duivenvoorde<sup>1,3</sup> <sup>1</sup>Division of Clinical Immunology