Preface: Future trends in the field of spondyloarthritis

Jonathan Sherlock¹

Peter C. Taylor²

1 Kennedy Institute of Rheumatology
University of Oxford
Roosevelt Drive
Headington
Oxford

2. Botnar Research Centre
Nuffield Department of Orthopaedics, Rheumatology and Musculoskeletal Sciences,
University of Oxford
Windmill Road Headington, Oxford, OX3 7LD.

Corresponding authors:

peter.taylor@kennedy.ox.ac.uk, jonathan.sherlock@kennedy.ox.ac.uk

The last three decades have witnessed enormous progress in understanding the pathogenic mechanisms underlying seropositive diseases such as rheumatoid arthritis. Many of these mechanisms have been validated through the development of targeted therapies which have transformed the treatment paradigm. In contrast, research in the spondyloarthropathies has often been considered to have lagged behind. In recent years, however, insight into the pathobiological processes driving the seronegative spondyloarthropathy cluster of diseases has advanced at great speed. Increased understanding of the genetics and cytokine biology underpinning these diseases has provided unprecedented insight into their underlying pathology and this has rapidly translated into novel therapeutic advance. This has been complemented by insights from the mechanobiology of the enthesis and the processes underlying the formation of pathological new bone which is so characteristic of this disease cluster. These observations give rise to the exciting prospect of future therapies that are truly disease modifying.

Whereas classical autoimmune diseases are driven by well characterised interactions of T and B cells, followed by production of antibodies specific for particular targets, the spondyloarthropathies are famously seronegative. What then is driving the particular tissue localisation of disease? Novel insights have come from characterisation of the cell biology within target organs, with the finding of highly localised populations of cells which mediate the anatomical specificity of disease. However, the systemic nature of disease is underscored by the fact that even in the absence of clinically evident inflammation in particular hallmark organs, subclinical inflammation is often present. For example, patients with psoriasis and inflammatory bowel disease have subclinical enthesitis, and patients with

spondyloarthropathy have subclinical bowel inflammation. Moreover, patients with uveitis have both enthesitis and bowel -inflammation. Systemic activation of the immune system with varying degrees of involvement of key target organs is therefore highly characteristic of spondyloarthropathy. This observation underpins the importance of studying these diseases in the actual anatomical sites involved, despite the significant practical difficulties involved in accessing these tissues.

The contributors to this volume discuss the latest developments in many of these rapidly evolving areas. It is anticipated that the advances described will translate into clinical benefit in a disease cluster for which there remains significant unmet need.