A172 REDUCED INTERLEUKIN 7 SERUM TITRES ARE ASSOCIATED WITH PROGRESSION TOWARDS RHEUMATOID ARTHRITIS IN VERY EARLY INFLAMMATORY ARTHRITIS

R Cuthbert,[1] V Goëb,[1,2] E A Horner, S Churchman,[1] L Coates,[1] H Marzo-Ortega,[1] J Nam,[1] E Villeneuve,[1] E Vital,[1] P G Conaghan,[1] P Fardellone,[3] X Le Loët,[2] P Emery,[1] O Vittecoq,[2] F Ponchel[1] *[1] Section of Musculoskeletal Disease, LIMM, The University of Leeds, Leeds, UK; [2]CHU-Hospitaux de Rouen, France [3]INSERM, Amiens, France*

10.1136/ard.2010.129668i

Background Early diagnosis of rheumatoid arthritis (RA) is crucial for initiation of therapy in order to achieve remission. Interleukin 7 (IL7) is a pleiotropic cytokine that plays a central role in the development and maintenance of T cells and has recently been associated with RA. Furthermore, injection of IL7 in a collagen arthritis model worsened the disease and IL7-blocking antibodies had therapeutic value. The authors have shown that serum levels of IL7 are reduced in patients with early and established RA. They hypothesised that this reduction may have diagnostic value.

Objectives To determine whether IL7 titres in serum will distinguish patients with early RA from other forms of early inflammatory arthritis, and whether titres are correlated with clinical parameters of disease activity, structural radiographic damage, shared epitope or autoantibody status and titres.

Methods (1) 267 patients with very early inflammatory arthritis (VEIA) of <6 months duration, diagnosed according to American College of Rheumatology criteria at 2 years and followed for 5 years; (2) 93 patients with inflammatory arthritis of <24 months, (3) 65 healthy controls. IL7 levels in serum were determined by ELISA.

Results After 2 years the diagnoses were confirmed for RA, undifferentiated arthritis (UA), ankylosing spondylitis (AS), psoriatic arthritis (PsA), osteoarthritis (OA) or other forms of rheumatic disease. IL7 levels at recruitment were reduced in RA ($p<0.0001$) but not in any other clinical diagnostic group. There was no correlation between IL7 titres and disease activity score, C-reactive protein, rheumatoid factor, anti-CCP (cyclic-citrullinated peptide) or HLA-SE status. The presence of erosions at recruitment in patients with VEIA with an RA diagnosis was not associated with IL7 levels; however, lower levels of IL7 at baseline were observed in patients showing progression of erosions at 5 years ($p=0.33$). In the second early inflammatory arthritis cohort, the results confirmed reduced levels of IL7 in RA ($p<0.001$) but also in UA ($p=001$). Importantly, combining all early RA, IL7 levels were inversely correlated with symptom duration at presentation, but only in patients <6 months ($R=0.513$, $p<0.001$), whereas levels were consistently low after. This was specific to RA and not seen for AS or PsA.

Conclusion Reduced serum IL7 is a feature of patients with VEIA evolving towards RA. This is independent of disease activity, inflammation markers, HLA-SE and autoantibodies. Further analysis is needed to establish the added value of IL7

over other parameters, particularly in CCP-negative patients, as well as in predicting response to therapy.