A170 SEVERITY OF T CELL SUBSET DYSREGULATION INFLUENCES THE PROBABILITY OF ACHIEVING DRUG-INDUCED REMISSION IN EARLY ARTHRITIS

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Background The authors reported that immunological parameters can predict the response to treatment in early rheumatoid arthritis independently of the treatment received as well as relapse in patients who achieved clinical remission. Normal naive CD4 T cell frequency predicted the ability of patients to achieve remission after 12 months of therapy. In contrast, regulatory T cell (Treg) frequency was not associated with remission but the frequency of Tregs expressing CD62L was higher. Inflammation related cells (IRC), a subset generated by the cytokine activation of naive cells, also tended to be lower in patients who did well. These studies were performed using retrospective samples (with loss of data due to freezing peripheral blood mononuclear cells). The aim of the current study is to take this work to immediate reporting by performing flow cytometry analysis within 4 h of blood collection.

Methods 23 patients with <12 months inflammatory arthritis were recruited and treated with methotrexate or methotrexate and infliximab or etanercept (blinded to treatment received). The clinical response was evaluated based on disease activity score (DAS28) at baseline and 6 months after start of treatment. 6 Colour flow cytometry was performed using standard protocols. Thirty-six healthy controls were used to build the age relationship with naive cell frequency.

Results There was no difference in baseline DAS28 between groups. The authors confirmed that naive cell frequency

decreased with age in controls ($R=0.455$, $p=0.01$) but not in patients. Naive cell frequency was similar to controls in patients who achieved remission ($DAS < 2.6$ or response) but reduced in patients with no response ($p=0.002$). IRC frequency tended to be higher in all patient groups with more significance in non-responders ($p=0.143$). IRC and Treg frequency were not associated with remission, response or lack of it. Treg-CD62L expression was comparable to controls in patients who achieved remission or response but lower in non-responders ($p=0.09$). The expression of CD127 was reduced on T cells in both non-responders ($p=0.076$) and responders ($p=0.02$) and normal in those who achieved remission.

Conclusion These data are preliminary, but they confirm previous findings and suggest that transferring flow cytometry protocols from a research laboratory to routine hospital service may be possible. The induction of remission appears clearly associated with more normal immunological parameters at baseline. Lack of response is associated with more profound dysregulation of T cell subset frequencies. Analysis needs to be repeated at 12 months for the intermediate response group to distinguish good from moderate response and patients able to achieve remission later.