A111 CD4$^+$CD25$^-$FOXP3$^+$ T CELLS ARE INCREASED IN SYSTEMIC LUPUS ERYTHEMATOSUS PATIENTS WITH ACTIVE GLOMERULONEPHRITIS

Michael Bonelli, Lisa Göschl, Stefan Blüml, Eva Rath, Josef S Smolen, Clemens Scheinecker *Division of Rheumatology, Internal Medicine III, General Hospital of Vienna, Medical University of Vienna, Vienna, Austria*

10.1136/ard.2010.148981.14

Objectives Regulatory T cells are critically involved in the pathogenesis of autoimmune diseases. Recently, a novel subset of regulatory T cells has been described in systemic lupus erythematosus (SLE), However, the role of CD4$^+$CD25$^-$Foxp3$^+$ T cells in the pathogenesis of SLE is not known. The authors therefore performed comparative analyses of proportions of CD4$^+$CD25$^-$Foxp3$^+$ T cells in SLE patients with different organ manifestations.

Methods Phenotypic analysis of peripheral blood CD4$^+$CD25$^-$Foxp3$^+$ T cells was performed by flow cytometry

(FACS) in SLE patients with different organ manifestations and healthy controls (HC). $CD4^+CD25^-Foxp3^+$ as well as conventional regulatory T cells were analysed for the expression of the recently identified marker Helios and Icos and for their cytokine expression profile and correlated with clinical data, the daily cortisone dose and the SLE disease activity index (SLEDAI).

Results The authors report that the proportions of $CD4^+CD25^-Foxp3^+$ T cells are increased in patients with SLE as compared to HC. Expression of Helios and ICOS in $CD4^+CD25^-Foxp3^+$ T cells was similar to conventional Tregs, indicating that $CD4^+CD25^-Foxp3^+$ T cells are bona fide Tregs. Strikingly analysis of patients with different organ manifestations revealed increased proportions of $CD4^+CD25^-Foxp3^+$ T cells in SLE patients with renal involvement, especially with active glomerulonephritis. Furthermore roportions of $CD4^+CD25^-Foxp3^+$ T cells correlated with the extent of proteinuria. Ongoing experiments are performed in order to analyse the origin of $CD4^+CD25^-Foxp3^+$ T cells. Therefore cells are stained for interleukin-4, interleukin-17 and IFN-γ and the transcription factor Foxp3, RORγt and GATA3.

Conclusions In summary the authors found increased proportions of $CD4^+CD25^-Foxp3^+$ T cells in patients with SLE who suffer from glomerulonephritis suggesting their involvement in kidney pathology. $CD4^+CD25^-Foxp3^+$ T cells might therefore be a useful tool to recognise and monitor patients with renal involvement. Kidney biopsies and a further characterisation of this cell population have been designed to unravel their role in the development of glomerulonephritis in SLE patients.