



POSTER PRESENTATION

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Patients with non-relapsing ANCA-associated vasculitis have increased numbers of circulating IL-10 producing Th17 cells

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Introduction/aim

IL-17 producing T-cells (Th17) were recently defined as a new, pro-inflammatory T-cell subset and are considered to have a key role in autoimmune diseases.

Importantly, it was recently described that anti-inflammatory regulatory T-cells (Treg) are able to convert to pro-inflammatory Th17 cells ("Plasticity") and vice versa. Little is known about the Th17 response or plasticity in ANCA-associated vasculitis (AAV). Therefore, we investigated Th17 responses in AAV.

Patients and methods

47 patients with ANCA-associated vasculitis and 12 age-matched healthy controls (HC) were studied. PBMC were isolated by ficoll gradient centrifugation and stimulated for 4 hours with phorbol-myristate-acetate/ionomycin in presence of brefeldin A. Intracellular staining was performed to detect IFN γ , IL-4, IL-10 and IL-17A producing T-helper-cells by flow cytometry. Ten renal biopsies with necrotizing-crescentic-glomerulonephritis (NCGN) were stained for IL-17 by immunohistochemistry.

Results

AAV patients in remission (n=27) and with active disease (n=20) had increased numbers of circulating IL-17A⁺ T-helper-cells as compared to HC (2.04 \pm 1.65% vs. 0.73 \pm 0.36%, p<0.0005 and 1.85 \pm 2.15% vs. 0.73 \pm 0.36%, p=0.05). Lesional IL-17⁺ cells were present in renal biopsies with necrotizing crescentic glomerulonephritis (NCGN). Moreover, IL-10⁺/IL-17⁺ T-helper-cells were found both in HC and AAV patients. However, AAV patients showed higher numbers of IL-10⁺/IL-17⁺

T-helper-cells than HC (0.054 \pm 0.048% vs. 0.025 \pm 0.014%, p<0.05). Furthermore, patients with non-relapsing disease course had significantly more IL-10 producing cells Th17 cells than patients with relapsing disease course (0.063 \pm 0.039% vs. 0.041 \pm 0.056%, p<0.05).

Conclusion

The results of this study emphasize the importance of circulating and lesional Th17 cells in AAV. IL-17⁺ cells participate in renal inflammation related to AAV. Elevated numbers of IL-10 producing Th17-cells are demonstrated for the first time in AAV and might point at enhanced plasticity. Further efforts are needed to unravel the role of Th17 cells in AAV.

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