

Objectives: The aim of this study was to assess cellular immunity parameters in patients with ANCA (Anti-Neutrophil Cytoplasmic Autoantibodies)-associated vasculitides (AAV) at different stages of the disease, with different treatment modalities, and with respect to the long-term prognosis of the patients.

Methods: We examined 69 patients with AAV, 30 healthy individuals and 20 patients with chronic kidney disease. Using flow cytometry, the following markers were assessed in peripheral blood cells: surface molecules (CD4, CD8, CD3, CD19, CD80, CD86, HLA-DR, CD28, CXCR3, CCR5, CD30 and CRTH2) and intracellular cytokines (interferon gamma (IFN), tumor necrosis factor alpha (TNF), interleukin (IL)-2 and IL-4 in CD3+ T cells and IL-10 and IL-12 in monocytes).

Results: Patients with AAV had decreased total number of lymphocytes, CD4+ cells, and CD4+CD45RA+ cells compared to healthy controls ($p < 0.001$). Active patients had increased CD30 and CRTH2 expression ($p < 0.05$). Increased CCR5 expression persisted in remission. Increased HLA-DR expression, expansion of CD28 subpopulation and increased IFN production were noted in remission but not in active disease. Patients in remission who developed a relapse during follow-up had significantly lower IL-10 production than those without relapse ($p < 0.01$).

Conclusions: Taken together, our data demonstrate the persistent immune system activation in remission of AAV and indicate the importance of ongoing immunosuppressive treatment in remission. Low IL-10 production in remission is associated with a higher relapse rate in the long-term follow-up.