229. Profiling the autoantibody repertoire in ANCA associated vasculitis with multiplex antigen arrays to predict relapse

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Background: The difficulty in predicting relapse, and selection of patients in whom immunosuppression may be stopped early, is an important unmet need in management of patients with ANCA vasculitis. Our goal was to characterize the autoantibody repertoires in long-term-remission-off-therapy (LTROT) patients and patients experiencing flares.

Methods: Pooled plasma samples provided by the Rare Kidney Disease (RKD) biobank were tested on a planar array including 42000 antigens representing 19000 unique proteins. Based on the results of this proteome-wide screening, combined with literature review, 346 protein fragments (based on proteins generated in the Human Protein Atlas project) were selected and immobilized on magnetic beads to generate a targeted in-house bead-array. Plasma and serum samples from 43 individuals with AAV in remission were studied using this bespoke array to identify novel autoantibodies capable of distinguishing those who remained in remission from those suffered a relapsing course.

Results: The total number of antigen reactivity were higher in anti-MPO patients, and unaffected by sex or age. Individuals from the relapse cohort showed higher reactivity towards protein fragments representing KCNK14, BMERB1, METTL6 and ATF3 (p-value<0.05).

Conclusions: We have identified several putative candidate autoantibodies that classify those patients with vasculitis at high risk of long-term relapse. These results will be validated in a large independent cohort.

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