with the presence of a cardiovascular risk factor (p=0.04) while CD was associated with anxiety and depression in at risk individuals (p=0.047). A relationship between CD and level of education, gender and current work was also observed.

Conclusions In this exploratory study we identified an association between conventional cardiovascular risk factors and cognitive dysfunction. However there was no association between any of the immune parameters and MoCA score. Prevention of cognitive dysfunction in SLE should focus on early identification and treatment of cardiovascular risk.

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281 LUPUS NEPHRITIS BIOMARKERS

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Background TWEAK, MCP-1 and NGAL, mediators in pathogenesis of systemic lupus erythematosus (SLE), are proinflammatory cytokines/chemokines that are thought as potential biomarkers reflecting disease activity. In this study, we aimed to investigate the association of serum (s) and urine (u) levels of TWEAK, MCP-1 and NGAL with disease activity in both renal and non-renal SLE.

Methods Thirty active patients with SLE (15 renal and 15 non-renal) were recruited. Thirty-one inactive patients with SLE (16 renal and 15 non-renal), 14 patients with ANCA-associated vasculitis (AAV) all of whom had active renal involvement and 20 healthy volunteers were selected as control groups. Serum and urine levels of TWEAK, MCP-1 and NGAL were tested using ELISA.

Results Sixty-one SLE patients, 51 (83.6%) of whom were female, with a median disease duration of 83 (23.5–135) months and a median age of 35 (27–47.5) were included in the study. Serum and urine levels of TWEAK and NGAL were significantly higher in the active SLE group compared with the inactive SLE (n=31) group (sTWEAK: p=0.005; uTWEAK: p=0.026; sNGAL: p<0.001; uNGAL: p=0.002); whilst no significant differences regarding serum and urine MCP-1 levels were observed (p=0.189 and p=0.106). uTWEAK (p=0.237), sMCP-1 (p=0.141), uMCP-1 (p=0.206), sNGAL (p=0.419) and uNGAL (p=0.443) levels did not differ between patients with active LN and non-renal active SLE; yet levels of sTWEAK were higher in patients with active LN (p=0.006). There were no differences between active LN and renal active AAV. Levels of all biomarkers were correlated with SLEDAI (sTWEAK: p=0.001; uTWEAK: p=0.006; sMCP-1: p=0.049; uMCP-1: p=0.014; sNGAL: p<0.001; uNGAL: p=0.002).

Conclusions sTWEAK, uTWEAK, sNGAL and uNGAL are significant biomarkers showing disease activity in SLE. However, our results implicate that these biomarkers may not be specific for SLE, and can be elevated in patients with active renal involvement of AAV. sTWEAK may be of use for discriminating active nephritis from non-renal active disease in SLE. Further studies are awaited to confirm these **Results**

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282 GENERATION OF HYDROLYZED COMPLEMENT COMPONENT C3 IS SUBSTANTIALLY ELEVATED IN SLE

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Background Complement activation is a central pathophysiologic event in several autoimmune diseases. A key activation event is the conversion of native C3 to C3(H2O), where a highly reactive thioester bond in C3 is hydrolyzed. C3(H2O) can be utilized to generate C3 convertase, which further drives complement activation via the alternative pathway. C3 (H2O) has been elusive to measure, but we have recently developed a novel ELISA-based assay allowing for its accurate measurement. We hypothesized that in autoimmune diseases where complement activation is a central feature, C3(H2O) levels will be elevated reflecting a primed state for triggering inappropriate alternative pathway activation and amplification.

Methods Healthy adult subjects (n=5) and adults with classified SLE (n=6) were enrolled and consented for serum collection at Washington University School of Medicine. Frozen serum was tested either immediately after thawing or after incubation at room temperature or 37°C for 6 or 24 hours. C3(H2O) was measured by an ELISA assay that utilizes a capture antibody to C3b and a detection antibody to C3a. Data was analyzed using Prism version 7.0d (GraphPad Software, Inc.). Statistical significance was determined using 2-way ANOVA with Dunns multiple comparisons test.

Results Substantial elevation of serum C3(H2O) levels were observed from patients with SLE following incubation at RT and 37°C compared to healthy controls. The differences were most pronounced in samples incubated at 37°C for 6 hours, with over a 4-fold increase in C3(H2O) levels in both the SLE samples. Interestingly, sera from both groups (healthy controls and SLE) did not reflect any difference in baseline C3(H2O) levels.

Conclusions Both SLE and RA are associated with elevated C3 (H2O) levels following *in vitro* incubation compared to healthy controls. These data suggest that the potential for C3 (H2O) formation in SLE and RA patients are higher compared to healthy controls, which could support additional complement activation or utilization of C3(H2O) in other pathways such as intracellular activation in immune cells. Thus, In addition to a possible diagnostic tool for pathogenic autoimmunity, these data may also suggest novel mechanisms of how complement could drive symptomatic autoimmune disease.

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