Background: Systemic lupus erythematosus (SLE) is a systemic autoimmune/inflammatory disease. Approximately 30% of SLE patients develop lupus nephritis (LN) that affects treatment and prognosis. Easily accessible biomarkers do not exist to reliably predict renal disease. Recently, calcium-binding S100 proteins have been suggested as biomarkers in systemic inflammatory conditions, including SLE.

Objectives: The MASTERPLANS Consortium aims to identify indicators of treatment response in SLE. This study tested the applicability of S100 proteins in serum and urine as biomarkers for disease activity and response to treatment with rituximab in LN.

Methods: S100A8/A9 and S100A12 proteins were quantified in the serum and urine of 243 SLE patients from the BiLag-Br study. Data were gathered as part of the BiLag-Br study, and the search was extended to all available SLE patients with data from the BiLag-Br study.

Results: Serum S100A12 levels were significantly lower in SLE patients with active LN (S100A12: urine p<0.005, serum p<0.005; S100A12: urine p<0.005, serum p<0.005; S100A12: urine p<0.005, serum p<0.005). Serum S100A12 levels were significantly lower in SLE patients with active LN (S100A12: urine p<0.005, serum p<0.005). Serum S100A12 levels were significantly lower in SLE patients with active LN (S100A12: urine p<0.005, serum p<0.005). Serum S100A12 levels were significantly lower in SLE patients with active LN (S100A12: urine p<0.005, serum p<0.005). Serum S100A12 levels were significantly lower in SLE patients with active LN (S100A12: urine p<0.005, serum p<0.005).

Conclusions: From this study, we propose clinical application of S100 proteins to predict active renal disease in SLE patients, with a focus on treatment with rituximab. Significantly overlapping values between groups particularly highlight the definition of cut-off values and prospective studies are required to validate findings.

References: