5) Soluble transferrin receptor in urine, a new biomarker for IgA nephropathy and Henoch-Schönlein purpura nephritis.

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IgA nephropathy (IgAN) and Henoch-Schönlein purpura nephritis (HSPN) might represent different ends of a continuous spectrum of glomerular disease. In both conditions, upregulated soluble transferrin receptor (sTfR) might be excreted in urine, which could be a potential biomarker to monitor disease activity and therapeutic response. In this cross-sectional study, 147 Caucasian patients consulting the Nephrology Department at the Ghent University Hospital and 50 controls were included. The value of urinary sTfR as biomarker in IgAN and HSPN was evaluated. sTfR was assayed in concentrated urine using a newly developed latex-enhanced immunonephelometric assay. The assay required a preconcentration step and was characterized by a within-run and between-run coefficient of variation of respectively 3.0 and 3.1%. The method provided linear results between 0.5 and 114 μg/L with an entirely satisfactory precision and analytical recovery (95-105%) over a wide pH range (4.76-7.6). Median urinary sTfR concentration was significantly higher in primary glomerulonephritis than in healthy subjects (P < 0.0001). Absolute median levels of urinary sTfR were markedly higher in patients with active IgAN or HSPN [10 μg/L, 95% confidence interval (CI), 9-19 μg/L] in comparison with those with other morphological types of GN (2 μg/L, 95% CI, 0-3 μg/L) (P < 0.0001). A statistical significant difference in urinary sTfR concentration was observed comparing patients with active IgAN or HSPN with patients who had achieved partial or complete remission (0 μg/L, 95% CI, 0-2 μg/L) (P < 0.0001). Multiple regression analysis with urinary sTfR as dependent variable revealed that proteinuria was the main predictor of urinary sTfR concentration (r² = 0.46, P < 0.001). Determination of sTfR in urine is a new and sensitive method, which can be used as a biomarker for IgAN and HSPN.

The data obtained in a limited population of our own outpatients seem promising (although the histological definition could be refined). We are interested in extending and/or validating these data in another set of samples of histologically classified IgA patients of whom also outcomes and data on progression are known. At the same time, all other suggestions in regard of this study are of course welcome as well. Thanks in advance for the consideration.

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