EVALUATION OF URINARY ANNEXIN V AS A PROGNOSTIC MARKER IN CHILDREN WITH NEPHROTIC SYNDROME

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Introduction and Aims: Nephrotic syndrome (NS) includes various pathological types but from a therapeutic perspective, it may be classified as steroid sensitive or steroid resistant. Renal biopsy - if indicated - carries some hazards, hence the need for a non-invasive method for prediction of prognosis. Urinary annexin V excretion is an indicator of apoptosis and renal injury, which are prevalent in steroid resistant NS. The study aims to evaluate urinary annexin V as a marker for steroid resistance and prognosis in children with NS.

Methods: Thirty children with NS at one center were included; 15 steroid sensitive (group 1) and 15 steroid resistant (group 2) not in activity. In addition, 20 newly diagnosed nephrotic patients (group 3) and 10 subjects (control group) were included. Urinary annexin V by ELISA, urinary protein/creatinine ratio, lipid profile and renal functions were done for all patients initially and at follow up after subsidence of activity for newly diagnosed ones, who were subsequently classified into steroid sensitive (group 3 a) and resistant (group 3 b).

Results: Urinary annexin V, urinary protein/creatinine ratio and serum albumin showed a highly significant difference between all groups and the control, between group 1 and group 2, between group 3 initial and follow up and between group 3 a and group 3 b. Urinary annexin V showed highly significant decrease after subsidence of activity more in the sensitive group. Significant positive correlation between urinary annexin V and urinary protein/creatinine ratio but not with serum albumin was found in all studied groups. Using ROC curve, a cut off value for urinary annexin V at 3.15 ng/mg creatinine (sensitivity of 77.8% and specificity 63.6%) was found for steroid resistance.

Conclusions: Urinary annexin V may be used as a non invasive marker for prediction of steroid resistance in newly diagnosed children with NS.