STUDY OF URINARY PODOCIN AS MARKER OF LUPUS NEPHRITIS ACTIVITY

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OBJECTIVES

Podocyturia may be a noninvasive practical means of assessment and monitoring of glomerular disease clinical activity .We aimed to evaluate the value of urinary podocin as a marker of clinical activity and progression of lupus nephritis .

METHODS

A cross sectional study will include 45 adults with systemic lupus Erythematosus (SLE) patients were recruited from Ain Shams University Hospital, Cairo, Egypt. Patients were divided into three groups: Group (I) Ten patients without clinical or laboratory evidence of lupus nephritis(LN), Group (II) Fifteen patients with evident active LN before starting the Immunosuppressive induction regimen and Group (III) Twenty patients with LN with remission either partial or complete. Patients with diabetes mellitus, uncontrolled hypertension, fever or acute infection, heart failure or Malignancy were excluded. Score of SLE activity and renal activity score were assessed by Systemic Lupus Activity Measure (SLAM) Index. The SLAM covers symptoms that occurred during the previous month. Laboratory investigations included (C.B.C, serum creatinine, blood urea and serum albumin. ANA, Anti DNA titer, C3 and C4, Urine analysis and Urinary Albumin /creatinine ratio. Urinary podocin quantification by enzyme-linked immuno-sorbent assay (ELISA) using kit supplied by SunLong Biotech Co., LTD (GongShu District, Hangzhou, Zhejiang, China, Catalogue Number: SL1430Hu) .

RESULTS

45 patients with mean age 27.71 ± 6.77 year, 43(95.6%) were females, mean of serum creatinine 0.84 ± 0.24 mg/dl, SLAM renal score activity was zero in group I, 2.07 ± 0.46 in Group II, 0.25 ± 0.44 in group III, Urinary Podocin (ng/ml) mean was (2.29 ± 0.71, 37.20 ± 14.38, 10.58 ± 2.30)(P=<0.001) in patients groups consecutively, with significant decrease of urinary Podocin in LN patients after remission vs high level in patients with active LN (figure 1) . Highly significant positive correlation between urinary Podocin and SLAM score of SLE activity (r = 0.852, P = <0.001)(Figure 2), SLAM -Renal score (*r* = 0.854, P = <0.001), urinary Albumin /Creatinine ratio (mg/g) (*r* =0.895, P=<0.001) and Anti DNA ds titer (r = 0.736 ,P<0.001).Highly significant negative correlations of urinary Podocin and C3 (*r* = -0.803,P=<0.001), C4(*r* = -0.760, P=<0.001) and GFR (*r* = -0.759, P=<0.001). Agreement (sensitivity, specificity) for urinary Podocin to diagnose severe SlAM score activity in SLE with Cutoff <11 ng/ml , Sensitivity 100%,Specificity 75.86%,PPV=46.15 ,NPV=100.0.

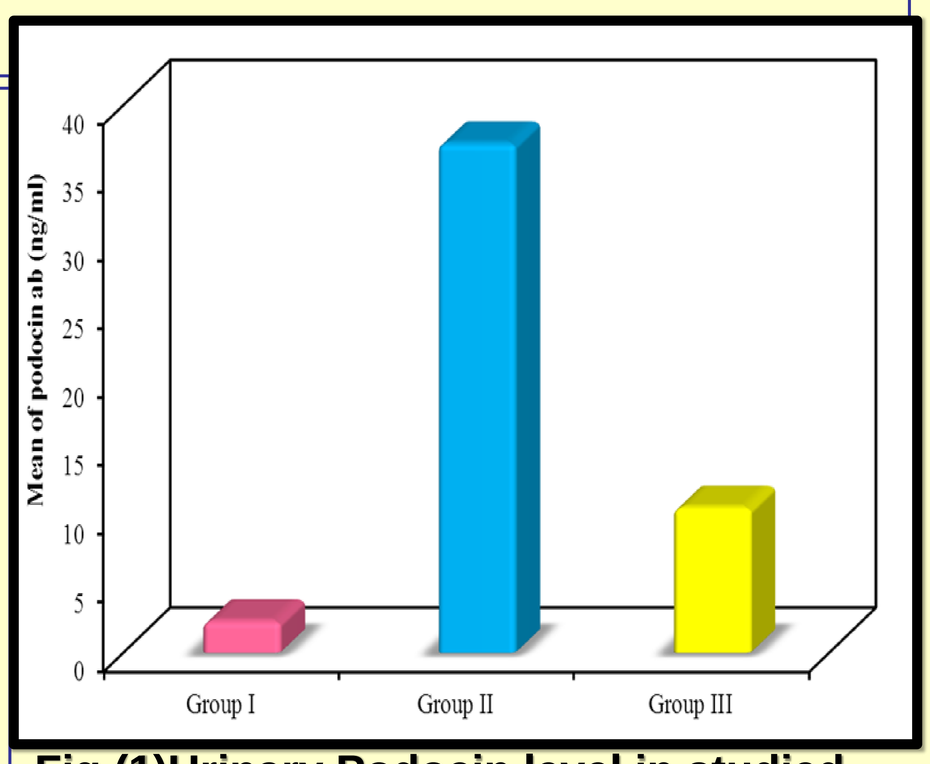

Fig.(1)Urinary Podocin level in studied groups .

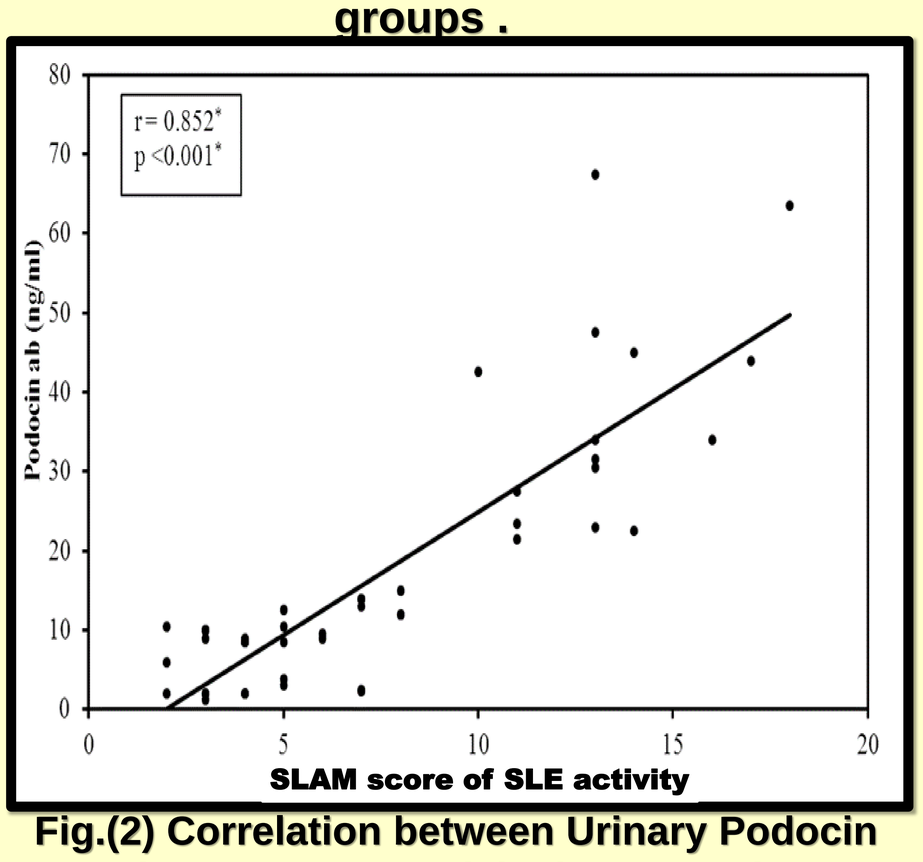

Fig.(2) Correlation between Urinary Podocin and SLAM score activity in SLE patients (n=45)

CONCLUSIONS

Urinary Podocin is significantly correlated to renal and non renal activity of SLE with highly sensitivity and specificity and may be considered as a prognostic marker in lupus nephritis patients

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