KSN 2020
FULLY VIRTUAL MEETING

Abstract Type : Poster
Abstract Submission No. : PO-1484

Diagnostic and predictive value of GDF-15 in diabetic nephropathy

Md Sarfaraj Hussain[1], Zeba Sarfaraj[2]
[1]Department of Pharmacognosy, RV Northland Institute, India
[2]Department of Nephrology, Jamia Millia Islamia, India

Objectives: Evidence from published studies raised doubt on microalbuminuria as a predictive marker for the development and progression of kidney disease in T2DM subjects. So, in this study we are exploring the predictive potential of growth differentiation factor-15 (GDF-15) for the early detection of DKD.

Methods: This was an observational study conducted at Hakeem Abdul Hameed Centenary Hospital (HAHC), New Delhi, India. Study period was 1.2 years. The study protocol was approved by the Institutional Ethics Committee. Patients were classified on the basis of estimated glomerular filtration rate (eGFR) and urine albumin creatinine ratio. Receiver operating characteristic (ROC) curve was plotted to assess the diagnostic potential of the marker, sensitivity and specificity was also calculated. All the analysis was performed using SAS v9.4.

Results: A total of 90 patients completed the study. Patients were grouped as normoalbuminuria (30 patients), microalbuminuria (30 patients), and macroalbuminuria (30 patients). Mean age of the patients was 58.5 ± 11.20 years. GDF-15 levels were significantly elevated in type 2 diabetes mellitus (T2DM) patients with macroalbuminuria as compared to T2DM patients with microalbuminuria and normoalbuminuria (p = 0.0154). The patients with poor kidney function (Stage IV-V CKD) have higher levels of GDF-15. Correlation analysis showed GDF-15 levels were positively correlated with age, serum creatinine, and very-low-density lipoprotein cholesterol. While, negative correlation (r = -0.441) was observed between GDF-15 biomarker and eGFR (p = 0.0001). The ROC analysis of GDF-15 yielded an AUC of 0.776 (95% CI: 0.677 to 0.875; p = <0.0001). The findings were statistically significant which suggested GDF-15 biomarker can be utilized in the diagnosis of DKD. The sensitivity and specificity of GDF-15 in the diagnosis of DKD were 0.93 and 0.87.

Conclusions: In DKD patients GDF-15 level increases as the eGFR decreases. ROC curve also confirms the diagnosis and prediction potential of GDF-15 in DKD.