STUDY OF SERUM OSTEOINDUCTIVE FACTOR AS AN EARLY MARKER OF NEPHROPATHY IN PATIENTS WITH TYPE 2 DIABETIS

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Introduction

Diabetic nephropathy (DN) occurs in 40% of patients with diabetes mellitus (DM) diagnosed clinically by presence of albuminuria and\or reduced eGFR in the absence of signs and symptoms of other primary cause of renal damage.

Since serum creatinine concentration not depends only on GFR but many additional factors such as muscle mass, sex, age, diet and pharmacological treatment. So, we in need for novel biomarker of decreased GFR without increased albuminuria before the kidneys are irreversibly damaged.

Serum osteoinductive factor (OIF) belong to small leucine rich repeat proteoglycans (SLRP) family and it is a secretory protein.

Recent studies suggest that OIF may play a direct role in DN through the development of renal fibrosis and atherosclerosis of renal arteries.

Aim of the work

Our study aimed to asses serum OIF as a marker of early DN in patient with type 2 DM and its correlation with albuminuria and eGFR in different stages of the disease.

Patients and Methods

This study included 90 patients divided into 3 groups with different degrees of albuminuria.

Patients with previous renal transplantation, on dialysis, on acute exacerbation of obstructive pulmonary disease, on acute bacterial infections, admitted to ICU, with congestive heart failure, with acute hepatitis, with malignancies, with past history of acute kidney injury (AKI), with persistent microscopic hematuria were excluded.

The included cases were subjected to full history taking and clinical examination including body mass index, vital signs and examination of chest and heart.

Laboratory investigation included complete urine analysis, fasting plasma glucose, glycated hemoglobin, lipid profile, serum creatinine, urinary albumin to creatinine ratio and serum OIF.

Results

Table (1): Comparison between the three studied groups according to serum osteoinductive factor

Serum osteoinductive Factor	Group A (n = 30)	Group B (n = 30)	Group C (n = 30)	F	p
Min. –Max.	1.30 ç2.70	0.90 ç2.20	1.0 ç1.90	31.612	<0.001
Mean ± SD.	1.98± 0.34	1.50± 0.33	1.38± 0.24		
Median (IQR)	1.90 (1.70ç2.20)	1.50 (1.30ç1.70)	1.30 (1.20ç1.40)		
Significance	p_1<0.001, p_2<0.001, p_3=0.270				

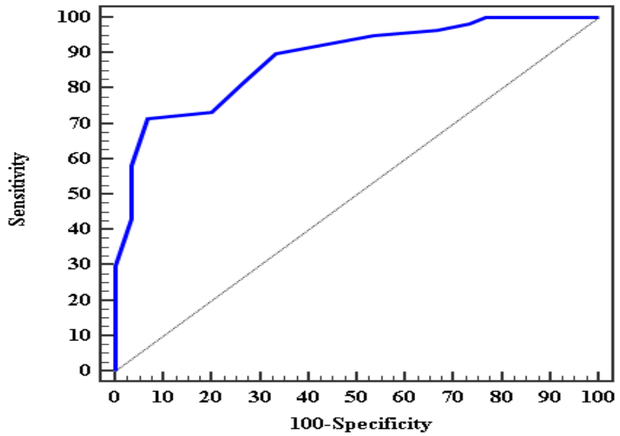

Figure (1): ROC curve for serum osteoinductive factor to discriminate moderate and sever patients (n = 60) from normal (n = 30)

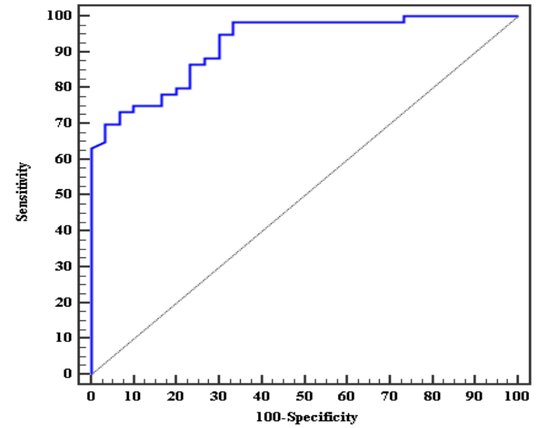

Figure (2) : ROC curve for eGFR CKD EPI with Serum osteoinductive factor to discriminate moderate and sever patients (n=60) from normal (n = 30)

Conclusion

Based on the previous findings serum OIF exhibited high sensitivity 81.87 and specificity 73.33 for detecting of microalbuminuria, beside low level of OIF related to progression of D.N.