

Circulating Fibroblast Growth Factors 21 and 23 as Biomarkers of Progression in Diabetic Nephropathy in Type 2 Diabetes with Normoalbuminuria

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Diabetic nephropathy (DN) is a progressive kidney disease. Previous studies reported that microalbuminuria might not be a sufficient marker to identify diabetic patients at risk of kidney disease progression. Fibroblast growth factors 21 (FGF21) and 23 (FGF23) may play an important role in the DN development and progression. We aimed to assess levels of FGF21 and FGF23 in patients with type 2 diabetes (T2D) with normoalbuminurea, to determine their association with other biochemical parameters and to verify their role as contributing factors to development of DN. The present study included 30 T2D patients with normoalbuminurea (urinary albumin excretion, UAE; less than 30 mg/ 24 hours), and 30 sex and age matched healthy individuals as a control group. Levels of FGF21 and FGF 23 were measured by ELISA. We observed significant increase in FGF21 ($P=0.019$) and in FGF23 ($P=0.000$) levels in patients compared with controls. There was a positive correlation between FGF21 and FGF23 and between each of them and other biochemical parameters: cholesterol, triglycerides, LDL cholesterol, FBS, creatinine, HA1C and UAE. Negative correlation was found between both of FGF21 and FGF23 and GFR. We concluded that elevated serum FGF21 and FGF23 levels may be useful biomarkers for predicting kidney disease progression, especially in the early stages of DN.