Assessment Of Serum Obestatin, In Patients with Type 2 Diabetes Mellitus in Correlation with Diabetic Microvascular Complications

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Abstract

Background:

Type 2 diabetes mellitus (T2DM) is a complicated persisting chronic disease. Obestatin, is anorexigenic gut hormone associated with atherosclerosis, increased insulin resistance, and metabolic syndrome. This study aimed to examine serum obestatin levels in Egyptian patients with T2DM in addition to explore their associations with diabetic microvascular complications.

Methods:

This case control study enrolled 60 patients with T2DM and 40 controls. The enrolled subjects were subjected to history taking, complete physical & neurological examination, anthropometric measurements., fundus examination, and Routine laboratory investigations.

In addition to measurement of fasting serum insulin level (FSI), UACR and estimation of GFR, by MDRD formula. Insulin Resistance (HOMA-IR) was calculated by Insulin Homeostasis Model Assessment .and, Serum obestatin level was measured by ELISA.

Results:

Among 60 Egyptian patients with T2DM, patients with microvascular complications were 30 patients; 21 patients had DPN, 18 patients had retinopathy and 21 patients had DKD. Serum obestatin level was significantly lowered in patients with T2DM compared to controls subjects (4.1±0.45 vs. 2.8±0.47 pg/ml; P <0.001) and in diabetic patient with microvascular complications in comparison to those without complications (2.67±0.45 vs. 3.071±0.39 pg/ml; P <0.001). As regards the comparison between serum obestatin in patients with DKD. Microalbuminuria had significantly lowered levels of serum obestatin (2. 7±0.36 pg/ml) compared to patients with macroalbuminuria (3.67±0.47 pg/ml) P <0.001. Serum obestatin significantly negatively correlated with duration of diabetes and cardiometabolic risk factors. The main independent parameters associated with lowered serum obestatin levels are waist circumference and HBA1c. Serum obestatin level at cutoff value < 3.94, 3.4, 3.26 (pg/ml) may be considered as a marker for detection of diabetes, microvascular complication and DKD respectively with high sensitivity and specificity.

Conclusions:

The serum obestatin levels were significantly lower in patients with T2DM more specifically in patients with microvascular complications. Among patients with diabetic microvascular complications patients with macroalbuminuria had significantly higher values of serum obestatin compared to normoalbuminuric patients, and serum obestatin level at certain cut of value can be used as marker for detection of diabetes and microvascular complications especially DKD.

Keywords:

T2DM, HOMA-IR, Insulin resistance, microvascular. obestatin.