

Serum Level of Fetuin-A as A Biomarker for Vascular Complications and Severity of Insulin Resistance in Individuals with Type 2 Diabetes

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Abstract:

Background:

Fetuin-A is a hepatokine which has the capacity to prevent vascular calcification. Moreover, it is linked to the induction of metabolic dysfunction, insulin resistance and associated with increased risk of diabetes. yet, It has not been clarified whether fetuin-A associates with risk of vascular complications in patients with diabetes.

Objectives:

We examined the relationship between serum fetuin-A, severity of insulin resistance (IR) and vascular complications in patients with type 2 diabetes mellitus (T2DM).

Methods:

In this cross sectional study we tested 160 type 2 diabetic patients ; 80 patients with at least one of vascular complications and 80 patients without any vascular complications recruited from Endocrinology and metabolism unit, Internal Medicine Department, Tanta University Hospitals .Patients evaluated for diabetic vascular complications (nephropathy, retinopathy , peripheral neuropathy and peripheral arterial disease) .Serum fetuin-A levels were measured by enzyme-linked immunosorbent assay (ELISA), and the IR was assessed by [homeostasis model assessment–insulin resistance (HOMA-IR)].

Results:

lower fetuin-A levels were associated with higher risk of vascular complications among type 2 diabetic patients and serum Fetuin-A had significant sensitivity 97.68% as a diagnostic marker to vascular complications among type 2 diabetic patients especially diabetic nephropathy (P=0.0001) with cut off value of 556.40 with +ve predictive values of 91.66% and -ve predictive values of 64.46%. Also, low serum fetuin A level can be considered as a significant predictor and risk factor for vascular complications among type 2 diabetic patients.

Higher serum fetuin-A levels are associated with severity of IR as assessed by HOMA-IR and it positively correlated with HOMAIR but without statistical significance.

Conclusion:

lower serum fetuin A level can be used as a diagnostic biomarker and a significant predictor and risk factor for vascular complications among type 2 diabetic patients.