Association of Plasma Fetuin-A Levels and Peripheral Vascular Disease in Type 2 Diabetic Patients

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OBJECTIVES

Diabetes is a risk factor for both PAD and PAD-associated mortality. In patients with peripheral arterial disease, diabetic patients have worse arterial disease and a poorer outcome than nondiabetic patients. 1 Fetuins are blood proteins made in the liver more abundant in fetal blood. Fetuin A is regarded as an inhibitor of systemic calcification 2. So we aimed at assessing the relationship between plasma fetuin-A levels and peripheral vascular disease in type 2 diabetes mellitus.

METHODS

This cross sectional study was conducted on 50 subjects aged from 50 to 65 years old divided into Group 1: 20 T2DM patients with PVD. Group 2: 20 T2DM patients without PVD. Group 3: 10 healthy subjects as control group. They were subjected to full clinical history, thorough clinical examination, laboratory investigations including fasting and 2-hour postprandial blood glucose level, HbA1c, measurement of plasma fetuin-A level using ELISA and arterial doppler ultrasound on peripheral vasculature for assessment of ankle peak systolic velocity (APSV).

RESULTS

On comparing the diabetics with PVD (Group 1) with diabetics without PVD (Group 2): There was a highly statistical significant decrease in plasma Fetuin-A level (P<0.001) as well as in APSV (P<0.001) in group (1) but there was no statistical significant difference as regard weight, height, BMI, FBG (P=0.724), PBG (P=0.781), and HbA1c (P=1.000).

On the three studied groups: There was a highly significant increase in weight and BMI, FBG and PBG in group (1) (diabetics with PVD) and group (2) (diabetics without PVD) when compared with group (3) (control) (P=0.001) While there was a highly significant decrease in plasma fetuin-A level (133.690 32.083 ng/ml) and APSV (19.00 2.714 cm/s) in diabetics with PVD when compared with diabetics without PVD (248.395 75.296 ng/ml) (81.450 5.031 cm/s) and also when compared with control (310.760 106.876 ng/ml) (117.600 17.264 cm/s) respectively (P<0.001) While there was no statistical significant difference between group (2) (diabetics without PVD) and group (3) (control) as regard fetuin-A level (P=0.065).

CONCLUSIONS

These results postulate an association between lower plasma fetuin-A level and peripheral vascular disease in type 2 diabetic patients.

References
