Relation Between Vascular Endothelial Growth Factor-A and the Severity of Diabetic Peripheral Neuropathy in Patients with Type 2 Diabetes Mellitus

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Abstract

Background:

Diabetic peripheral neuropathy (DPN) is a common microvascular complication in patients with type 2 diabetes mellitus (T2DM). Vascular endothelial growth factor (VEGF) is an essential growth factor for vascular endothelial cells. We aimed in this study to investigate the relation between VEGF-A serum level and the degree of DPN.

Methods:

This study was conducted on 81 patients with T2DM. Full neurological examination was performed and the diagnosis of DPN was made based on combined clinical and electrophysiological assessed severity score (EPHAS). VEGF-A levels were measured using enzyme-linked immunosorbent assay (ELISA).

Results:

Based on the combined assessment, 67 patients were diagnosed with peripheral neuropathy of whom 32 patients had subclinical neuropathy whereas 35 patients were confirmed cases of DPN.

Patients with DPN had longer duration of DM and higher values of HbA1c. Patients with subclinical DPN had significantly higher serum VEGF-A level compared to patients with confirmed DPN which was ($p<0.001$). VEGF-A levels did not show significant difference between patients with DPN and patients without DPN ($p=0.07$).

Conclusion:

DPN is a common finding in the studied sample of patients T2DM. Longer duration of DM and poor glycemic control may be risk factors for development of DPN. Low VEGF-A may cause progression of DPN in patients with T2DM.

Keywords:

Type 2 diabetes, Diabetic neuropathy, microvascular complications, VEGF-A