The Relation Between Diabetic Peripheral Neuropathy and Coronary Heart Diseases in Type 2 Diabetic Patients

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Background:

Diabetes mellitus is a well-known cardiovascular risk factor in developed countries. Diabetic peripheral neuropathy (DPN) is a popular, incapacitating, and di ressing complication that occurs in nearly 30–50% of patients with diabetes. The prevalence of CAD in the diabetic population ranges from 9.5% to55%, whereas in the general population, it is considered to be 1.6–4.1%. Type 2 diabetes mellitus is a chief risk factor a ecting CAD.

Objective:

The aim of the udy is to assess the degree and severity of diabetic neuropathy in correlation with the degree and severity of coronary heart disease in type 2 diabetic patients.

Patients and Methods:

prospective, cross-sectional udy Conducted in the inpatient of Specialized Medical Hospital, Mansoura University for 2 years. The udy was conducted on 118 type 2 diabetic patients. Patients were divided into 2 groups: A 66 patients with cardiac ischemia on coronary angiography. This group was divided into 3 groups according to Gensini score (GS) : Mild ischemia: GS < 20 ,Moderate ischemia: GS = 20-48 ,Severe ischemia: GS > 48.A 52 patients with normal coronary angiography.

Nerve Conduction Studies: was performed in the electrophysiology lab at Mansura Specialized Medical Hospital using VikingQue ® (Nicolet®, Natus Neurology, USA). We udied 4 motor nerves bilaterally (Peroneal, Tibial, Median and Ulnar nerves). For each motor nerve, we recorded compound motor action potential amplitude, di al latency and conduction velocity. We udied 3 sensory nerves bilaterally (Sural, Median and Ulnar nerves).For each sensory nerve, we recorded sensory nerve action potential amplitude and peak latency.

Results:

The udy shows a ati ically signi cantly higher GS, Non-zero GS, and coronary lesion ≥ 70% and a ati ically signi cantly lower EF% in those with abnormal NCS while the majority of those with normal NCS have no involvement of coronary vessels.

Conclusion: There is a rong association between CAD and DPN and its severity. So, DPN can be used as a predictor of myocardial ischemia in clinical practice especially silent myocardial ischemia

Keywords:
DPN diabetic peripheral neuropathy, GS gensini score, CAD coronary artery disease, EF ejection fraction, NCS nerve conduction studies