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Diabetic Neuropathy Diagnosis - from Bedside to Nerve Conduction Studies

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Early diagnosis of diabetic peripheral polyneuropathy is important because of the significant associated increase in morbidity and mortality. Different tools are used for the diagnosis. Although nerve conduction studies (NCS) is the single, standard, most accurate and objective method for the diagnosis of polyneuropathy in diabetics, yet it is complex, expensive, time consuming and not widely available in every diabetes clinic. The aim of this study was to evaluate the role of Diabetic Neuropathy Symptom Score (DNSS), Diabetic Neuropathy Examination Score (DNES) and 10g Semmes Weinstein Monofilament Examination (SWME) in diagnosis of diabetic peripheral neuropathy in correlation to the parameters of Nerve Conduction Studies. Subject and Method: the study was carried out on 50 patients with type 2 diabetes mellitus in addition to 15 healthy subjects matched for age and sex as a control group. All patients and healthy individuals were subjected to history taking, general and neurological examination, DNSS, DNES, SWME and NCS. Results: Patients mean age was 45.6±8.5Y, duration of DM 7.78±2.95Yand BMI 31.4±2.89kg/m². Peripheral neuropathy was diagnosed in 35 patients (70%) according to DNSS, in 36 patients (72%) according to DNES, while in only 27 patients (54%) by 10g SWME. Nerve conduction study revealed that 90% of patients (n=45) have evidence of peripheral neuropathy. The most frequently affected nerve, among this group, was the sural nerve followed by common peroneal nerve with the posterior tibial nerve as the least affected site. The parameters of NCS of all examined nerves were significantly correlated with the duration of DM, DNSS, DNES and A1c% . From this study, it is concluded that NCS is the most accurate and objective method for diagnosing of all cases of polyneuropathy. Subclinical polyneuropathy is not uncommon and could be only diagnosed by NCS. When DNSS, DNES and SWME are used in combination, better result is given in diagnosis of polyneuropathy in correlation to NCS.