

**Comparative evaluation of diabetic neuropathy symptoms score (DNS), diabetic neuropathy examination score (DNE) and Toronto score with vibration perception threshold (VPT) and nerve conduction studies (NCS) in type 2 diabetic patients**

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**Background and Aims:** Current level of evidence for optimal screening is limited. Many advances have taken place in detection of diabetic polyneuropathy with respect to symptoms and examination scores, electrophysiological and quantitative sensory testing. This study was an attempt to determine the prevalence of various forms of diabetic neuropathy in the lower extremities and to compare and validate DNS, DNE, Toronto score with VPT and NCS in patients with type 2 diabetes. **Materials and methods:** Detailed history regarding neuropathic symptoms in both lower limbs and clinical examination was done in 317 randomly selected type 2 diabetic patients. Clinical neuropathy was diagnosed when any two of following three are present: neuropathic symptoms, decreased distal sensations, or decreased ankle reflexes. All underwent DNS, DNE, Toronto scoring and VPT. Seventy-four randomly selected patients underwent nerve conduction studies in bilateral tibial, peroneal and sural nerves. Sensitivity and specificity of clinical examination, DNS, DNE, Toronto scores and VPT was calculated using NCS as the gold standard. **Results:** The prevalence of polyneuropathy by clinical criteria, DNS, DNE, TORONTO and VPT was 46%, 41%, 41.6%, 42.3% and 52.4% respectively. In a subset analysis of 74 patients in whom NCS was done, sensitivity and specificity of clinical criteria, DNS, DNE, TORONTO and VPT was 67% and 95%, 65% and 70%, 61% and 100%, 63% and 100% and 76% and 95% respectively. Prevalence of neuropathy by NCS was 73% of which 23% were asymptomatic. The mean peroneal and tibial motor amplitudes were 1.4 mV and 2.8 mV and corresponding conduction velocities were 36.7 and 34.6 m/s and respectively, while the mean sural sensory amplitudes and conduction velocity was 3.8  $\mu$ V and 31.3 m/s respectively (p value <0.05). **Conclusion:** VPT is the most sensitive screening tool (compared to NCS) in detecting diabetic polyneuropathy. Detailed clinical examination and VPT can be used as a substitute for NCS in the diagnosis of diabetic polyneuropathy.