ABSTRACT

Title: Evaluation of subclinical neuropathy in type 1 diabetes mellitus

Background: Type 1 diabetes mellitus is caused by cell mediated autoimmune destruction of β-cell in susceptible individuals along with some insulin resistance. About 60 to 70% of people with diabetes have some form of neuropathy. This includes the central neuropathy affecting the visual pathway and the peripheral neuropathy affecting the peripheral nerves. Aim: To evaluate the subclinical central and peripheral neuropathy in type 1 Diabetes mellitus patients. Objectives: (i) To evaluate the subclinical central neuropathy by visual evoked potentials. (ii) To evaluate the subclinical peripheral neuropathy by sensory sural nerve conduction study. (iii) To compare the findings between 3 groups of type 1 diabetic patients with different disease duration. Materials and methods: Patients Diagnosed to have type 1 DM with duration <5 years, 5-10 years and 10-15 years were included in the study, each group with 20 cases. Age and sex matched controls were included in the study. VEP P100 latency and amplitude and sensory sural nerve conduction velocity and amplitude were recorded. Results: The delays in P100 latencies were highly significant in 5-10 years and 11-15 years of diabetic groups and the reduction in mean amplitude values were highly significant in 5-10 years and 11-15 years of diabetic groups when compared to controls. The decrease in mean conduction velocity and amplitude of sural nerve was highly significant in 11-15 years diabetic group when compared to control group. Conclusion: the changes in VEP and sensory Sural nerve conduction occur in type 1 diabetic patients much before the development of overt or clinically apparent central neuropathy and peripheral neuropathy and these changes are related with the duration of disease.

Keywords: Type 1 diabetes mellitus, VEP, Sensory Sural nerve conduction.