

Abstract #1750.docx

ELECTROPHYSIOLOGICAL EVIDENCE OF THE UPPER AND LOWER MOTOR ABNORMALITIES IN DIABETIC PATIENTS WITH COMPRESSIVE CERVICAL MYELOPATHY.

Introduction/Aim

Cervical compressive myelopathy (CCM) is one of the most prevalent and increasingly observed neurological disorders during and after middle age. Diabetes mellitus (DM) is one of the most frequent comorbidities in those ages, which may impact in determining the severity of CCM. The aim of this study to assess a function of the motor pass way in diabetic patients with CCM and to investigate a correlation between the electrophysiological parameters and clinical symptoms.

Materials and Methods

Motor evoked potentials following transcranial magnetic stimulation and compound muscle action potentials and F-waves following electrical stimulation of the ulnar and tibial nerves at the wrist and ankle were measured from the abductor digiti minimi muscle and abductor hallucis muscle in 19 diabetic patients with CCM (CCM-DM group), 84 patients with CCM (CCM group), and 24 normal subjects. The peripheral conduction time (PCT) and the central motor conduction time (CMCT) was calculated. The Japanese Orthopaedic Association (JOA) score was obtained.

Results

PCT, and CMCT parameters in the CCM-DM and CCM groups were significantly longer than those in the control group. The PCT in the CCM-DM groups were significantly longer than those in the CCM groups, despite no significant differences were detected in the CMCT parameters between the CCM-DM and CCM groups. The JOA scores in the CCM-DM were significantly lower than those in the CCM group. In the CCM-DM group, The JOA scores did not correlated with the CMCT parameters, although the JOA scores related to the CMCT in the CCM group.

Conclusion

Our results suggest that CMCT and PCT parameters reveal abnormalities in the upper and lower motor neuron in DM patients. CMCT parameters did not correlate with the JOA score, suggesting that the JOA score may respond to impairments in the corticospinal tract as well as peripheral nerve in diabetic patients with CCM. These electrophysiological studies may be useful for screening motor pathway function for CCM in DM patients.