ABNORMAL ELECTROMYOGRAPHY IN MULTISYSTEM ATROPHY (MSA)

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Introduction: Motor neuron degeneration is not a characteristic clinical feature in multisystem atrophy (MSA), however anterior horn cell degeneration was found in autopsy. There were only single electromyographic studies considered peripheral motor neuron signs in MSA.

The aim of study was to estimate subclinical involvement of peripheral neuron in EMG in MSA patients.

Material: The material consisted of 52 patients with clinically probable MSA (the mean age 60.6yrs; M-67%). The patients were divided into two subgroups- with predominant cerebellar signs (MSA-C) and predominant parkinsonian signs (MSA-P).

Methods: Nerve conduction studies on ulnar, peroneal and sural nerve and electromyography of interosseus dorsal and tibial anterior muscle were performed.

Results: Pathological results in neurography were present in 22 patients with MSA (42.3%). Decreased amplitude of compound muscle action potential (CMAP) in ulnar (45%) and peroneal nerve (25%) were the most frequent abnormalities in conduction study. The significant lower amplitude values of CMAP were found in MSA-P comparing to MSA-C. Neurogenic abnormalities in skeletal muscles as a chronic reinnervation were found in 48% of patients and equally in MSA-P as in MSA-C.

Conclusion: In MSA subclinical axonal abnormalities of peripheral nerves parameters are frequent. The changes are more often observed in patients with MSA-P than in MSA-C. The neurogenic changes in the muscles (reinnervation) were found in over half of patients with MSA what could confirm the degeneration of anterior horn cells and/or secondary involvement of peripheral nerve axons.