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ELECTROMYOGRAPHY EVALUATION IN PATIENTS AFTER COVID-19

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Abstract

Introduction. Living in the time of the SARS-COV-2 pandemic push us researchers and physician to find new weapons to better fight against it. We already know that the virus affects a variety of human systems, being responsible for respiratory, digestive, cardio-vascular, cutaneous, but also neurological manifestations such as ageusia, anosmia, amnesic changes, myalgia, and paresthesia. Electromyography (EMG) is regarded as the gold standard for diagnosing neuropathy and also is useful for myopathy track. Our aim is to objectify the specific effects of SARS-CoV-2 on peripheral nerves and muscles using EMG.

Material and Method. 13 Patients with recent sequelae after Corona Virus Disease (COVID) 19 such as fatigue and myalgia of both calves were submitted to electrophysiological examinations, nerve conduction studies (NCS) and electromyography (EMG).

Results. NCS shows, as common elements, the presence of a partial or complete conduction block on several nerves, slightly prolonged latency of the tibial nerve and rare or absent F-waves, all suggesting a demyelinated polyneuropathy due to SARS-COV-2. Motor demyelinating neuropathy features mainly of the tibial nerves but also the peroneal, median, and ulnar nerves were objectified. The short duration and low amplitude of the motor unit action potential with early full recruitment on interference pattern on EMG, typical for myopathy, suggest a direct action of COVID 19 on muscular fibers, especially in the lower limbs.

Conclusion. NCS and EMG findings suggest a direct action of COVID-19 on nerves and muscles. SARS -COV-2 demyelinating polyneuropathy and elements of myopathy could be new pathological entities to be considered in the COVID-19 management. More studies are required in order to confirm these electrophysiological findings.

Key words: COVID-19, SARS-COV-2, nerve conduction studies, electromyography, neuropathy, myopathy, Motor Demyelinating Neuropathy