

Sympathetic Skin Response and Reaction Times in Chronic Autoimmune Thyroiditis; An Overlooked Electrodiagnostic Study

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Abstract : Chronic autoimmune thyroiditis (AIT) may result in a wide spectrum of reversible abnormalities in the neuromuscular function. Usually, proximal muscle-related symptoms and neuropathic findings such as mild axonal peripheral neuropathy have been reported. Sympathetic skin responses are useful in evaluating sudomotor activity of the unmyelinated sympathetic fibers of the autonomic nervous system. Neurocognitive impairment may also be a prominent feature of hypothyroidism, particularly in elderly patients. Electromyographic reaction times as a highly sensitive parameter provides. Objective data concerning cognitive and motor functions. The aim of this study was to evaluate peripheral nerve functions, sympathetic skin response and electroneuromyographic (ENMG) reaction times in euthyroid and subclinically hypothyroid patients with a diagnosis of AIT and compare to those of a control group. Thirty-five euthyroid, 19 patients with subclinical hypothyroidism and 35 age and sex-matched healthy subjects were included in the study. Motor and sensory nerve conduction studies, sympathetic skin responses recorded from hand and foot by stimulating contralateral median nerve and simple reaction times by stimulating tibial nerve and recording from extensor indicis proprius muscle were performed to all patients and control group. Only median nerve sensory conduction velocities of the forearm were slower in patients with AIT compared to the control group ($p=0.019$). Otherwise, nerve conduction studies and sympathetic skin responses showed no significant difference between the patients and the control group. However, reaction times were shorter in the healthy subjects compared to AIT patients. Prolongation in the reaction times may be considered as a parameter reflecting the alterations in the cognitive functions related to the primary disease process in AIT. Combining sympathetic skin responses with more quantitative tests such as cardiovascular tests and sudomotor axon reflex testing may allow us to determine higher rates of involvement of the autonomic nervous system in AIT.

Keywords : sympathetic skin response, simple reaction time, chronic autoimmune thyroiditis

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