

Association of Psychometric Indices and Normal Electrodiagnostic Studies in Referral for Suspected Carpal Tunnel Syndrome

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Abstract. *Background/Aim:* The aim of this study was to investigate psychometric indices and their association with electrodiagnostic studies (EDX). *Patients and Methods:* A total of 100 patients referred for EDX testing of the upper limbs were prospectively enrolled. *Demographic data, laboratory test results, referral physician specialty, main symptom, WHODAS 2.0-12 item version, Hospital Anxiety and Depression Scale (HADS), Boston Carpal Tunnel Questionnaire (BCTQ) and a Numeric Rating Scale (NRS) indicating the extent of their discomfort were collected. Results:* Normal EDX results were elicited from 56% of patients. Only the presence of numbness in the right hand, pain in the left hand and older age were significantly associated with an abnormal EDX result. The more depressed and anxious the patients were, the more they scored on psychometric scales. *Conclusion:* The large prevalence of normal EDX studies raises the issue of unnecessary referrals. A proportion of patients are referred only according to their reported symptoms. Psychological factors affect the way a person expresses physical

discomfort, leading to unnecessary EDX referrals and inevitably with normal results.

Nerve conduction studies and needle electromyography (EMG) are invaluable electrodiagnostic (EDX) tools in the diagnosis of neuromuscular disorders. EDX studies are considered an extension of the clinical examination (1) but not a substitute for careful history-taking and physical examination. Several studies have reported the issue of a high prevalence of normal results from EDX studies, ranging from 35% to 69% of cases (2-12). The appropriateness of the request for EDX has already been addressed, focusing mainly on the source of the referrals, whether the referring physician is a general practitioner or a specialist, a neurologist or an orthopedic (12) and even more so when the referring neurologist is a neuromuscular expert or a non-neuromuscular neurologist (7). Some studies suggest that when referrals are issued by specialists, they are more appropriate and the initial suspicion is confirmed to a greater extent than when issued by general practitioners (2, 13, 14), while other studies suggest that the referral source is not significantly related to the EDX outcome (3-5, 10, 15). The above findings are inconclusive and contradictory and may lead to decisions which prevent general practitioners from referring patients for EDX studies (7, 14).

In all relevant published studies, a high proportion of non-diagnostic, but symptomatic referrals, such as numbness, pain and weakness, are mentioned, ranging from 30% to 68% (2, 4, 5, 10-12, 15), a rate similar to that of normal EDX results. Therefore, a symptomatic referral may indicate the difficulty of the referring physician to correlate symptoms to diseases.

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