

The association of A-wave and neuropathic pain: a cohort finding in leprosy neuropathy under steroid treatment during reaction type 1 and 2

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ABSTRACT

Objective: Neuropathic pain (NP) is a well recognized feature of leprosy neuropathy that affects approximately 60% of patients during the course of the disease. However, suspicious cases of NP are diagnosed using clinical criteria solely. In the present study it was sought for an association between A-waves and NP, by means of conventional nerve conduction studies.

Methods: In a clinical trial to assess steroid treatment, 28 ulnar nerves, 19 with type 1 reaction (T1R) and nine type 2 (T2R), were followed-up during six months. Clinical characteristics of pain complaints, the duration of symptoms including a visual analogue scale for pain intensity (VAS) and sensory and motor nerve impairment were applied. Complete motor nerve conduction studies of the ulnar nerve were performed, as well as long latency responses (F and A waves). The presence of A-wave was checked in samples of 20 F-waves at each nerve assessment. The clinical and the neurophysiologic findings were compared, in order to note the positive and negative concordances between neuropathic pain symptoms and A-wave before and after steroid treatment.

Results: Both reactions presented high frequency of A-wave, the parameters concordances before and after steroid treatment in both reactions. The presence of A-wave and pain and its absence without pain in both reactions types were also statistically significant ($p=0.0025$). In the T2R group double correlation was observed, positive before (44%) and negative after treatment (88.9%) of the nerves with statistical significance ($p=0.002$).

Conclusions: The presence of A-waves showed correlation with pain complaints of neuropathic characteristics in leprosy patients during reactions T1R and T2R and more strictly concordances in T2R nerves. The results suggest that such responses observed during nerve leprosy reactions share similar mechanisms of impulses ectopic generation among the small fibers dysfunction seen in patients with NP of other etiology.

Key words: A-wave, neuropathic pain, leprosy

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