

INTEREST AND LIMITS OF ELECTROMYOGRAPHY IN THE DIAGNOSIS OF LOWER LIMBS RADICULOPATHIES:

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Introduction/Background:

Radiculopathies are a frequent cause of consultation leading to neurophysiologic exploration, namely electromyography (EMG), with a prevalence of 1,2 % to 43 % (Konstantinou & Dunn, 2008) . The main objective of our study is to analyse the indications and limits of neurophysiologic explorations in the diagnosis of root neuropathy. We analysed the results of EMG for the diagnosis of radiculopathies in comparison to anamnesic features and clinical findings.

Material and Method:

We retrospectively studied the consecutive characteristics of 67 EMG studies realized from 2010 to 2015 in the laboratory of neurophysiology of Saint-Etienne university hospital. We especially looked for root neuropathy of the lower limb involving L3,L4,L5 and/or S1. A concordance between the proposed diagnosis and the electromyographic diagnosis was studied in a statistical study including non-parametric tests. Two levels of statistical significance were retained: $p < 0,05$ and $p < 0,01$.

Results:

The EMG examination was abnormal in 73,2% of patients tested, with characteristics features of root neuropathy in 61,2%. Correlation with clinical findings was positive in 49,3% of cases. Statistical significance was reached between root neuropathy on EMG findings and clinical assessment ($p < 0,01$). EMG sensitivity is limited for the diagnosis of root neuropathy (figure 1). The clinical findings consistent with a radiculopathy does not preclude an EMG confirmation of a root neuropathy. This lack of sensitivity in our study is compatible with the findings of others. Dillingham & al draw similar conclusions in their study.

Conclusion:

Our study, compatible with the findings of others and the medical literature shows that EMG is a specific tool in the diagnosis of root neuropathy but has a low sensitivity. Proper clinical examination is the best way to draw appropriate conclusions from the EMG analysis. This was shown in studies by Camdessanché & al (2006) and Inal EE & al (2013) in upper limbs pain investigation.

Keywords: electromyography, radiculopathies

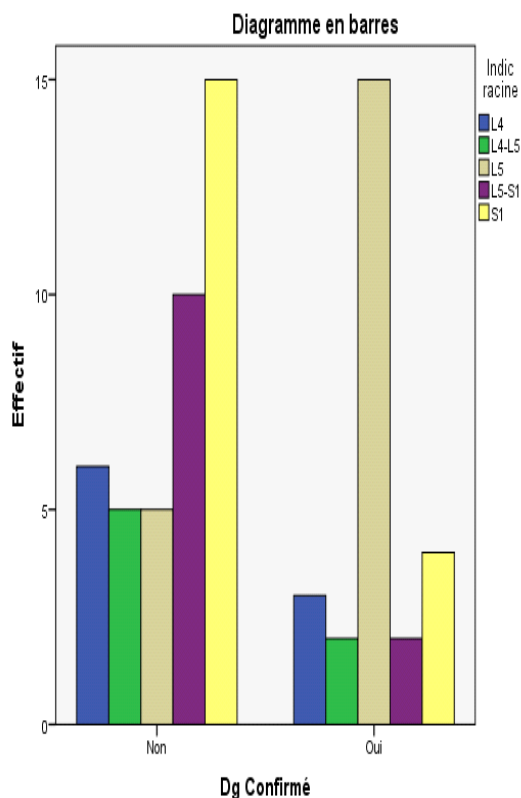


Figure 1: ENMG confirmation based on suspected root involvement.

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