

## CN-macroEMG does not provide additional support for diagnosing inflammatory myopathies

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We read with interest the article by ElZamarany *et al.* on a case-control study of the use of concentric needle macroelectromyography (CN-macroEMG) in 26 patients with Inflammatory Myopathies (IM) and 20 healthy control subjects.<sup>1</sup> The study concludes that CN macroEMG provides optimal results in the diagnosis of IM and can be helpful in the follow-up of IM patients.<sup>1</sup> The study is impressive, but some points should be discussed.

The first point is that the objectives of the study were not specified.<sup>1</sup> We should know whether the study was conducted to calculate the sensitivity and specificity of the method for diagnosing IM, or simply to document that CN-macroEMG may be abnormal in patients with IM. If the aim was to calculate sensitivity/specificity, we should know which gold standard for the diagnosis of IM was used to compare it with the CN-macroEMG findings.

The second point is that factors determining the CN-macroEMG signal were not sufficiently included in the analysis.<sup>1</sup> The CN-macroEMG signal depends not only on the type of underlying IM (polymyositis, dermatomyositis, immune-mediated necrotizing myositis, overlap syndromes, including anti-synthetase syndrome), but also on the muscle examined, the treatment used for IM, and the stage or duration of the disease.<sup>2</sup> As long as these influencing factors are not sufficiently taken into account in the analysis of the data, the results may remain unreliable.

The third point is that EMG is generally of limited importance for the diagnostic evaluation of IM. The diagnosis of IM is usually made on the basis of medical history, symptoms and signs, blood tests, the determination of myositis-associated and myositis-specific antibodies, a muscle MRI with contrast agent, and a muscle biopsy. What criteria and methods were used to diagnose IM in the 26 patients included in the study?

The fourth point is that it is unclear why patients with viral myositis were included in the analysis.<sup>1</sup> Viral myositis is classified as infectious myositis, not idiopathic IM. Therefore, these patients should be excluded from the evaluation.

The fifth point is that we disagree with the view that IM is generally characterized by weakness of the proximal

muscles.<sup>1</sup> Although certain muscle groups may be predominantly affected in some patients, muscle weakness in IM can generally occur in all striated muscles.<sup>3</sup> We also disagree with the view that IM is generally associated with muscle pain. IM is known to cause muscle weakness without myalgia.<sup>4</sup>

Finally, due to the unequal group sizes (26 vs. 20), it is not possible to match the study group with the control group in terms of age and gender.

Overall, CN-macroEMG is of limited value for the diagnostic evaluation of IM. To assess whether it has additional benefits over CN EMG, it should be compared with this technique or a gold standard in terms of its sensitivity and specificity in homogeneous groups of IM.

### Conflict of interest

The author declares that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

### Ethical approval and consent to participation

Not applicable.

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### Availability of data and material

All data are available from the corresponding author.

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## Macro-EMG and inflammatory myopathies

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