



Potential Significance of Altered Spinal Excitability in Patients With Primary Fibromyalgia

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Dear Editor,

I read with great interest the article by Thabit et al.¹ reporting on their electrophysiology study showing increased spinal excitability in patients with fibromyalgia (FM). However, some points may need to be discussed further in order to obtain a better understanding of that report.

The main strength of the study is that the authors investigated H-reflexes both in the upper and lower extremities and evaluated numerous pain-related variables using various indexes. They found no correlation between the parameters of H-reflexes and pain-related variables. They conclude that the elevations in the Hmax/Mmax ratios were not confined to the site of maximum pain; however, the pain indexes were not evaluated in distinct locations, and so I wonder how they were able to draw that conclusion. Although measures were elevated in both the upper and lower extremities, we do not know if there was a particular elevation specific to the location of the pain. The results of the study of Ge et al.² are important in this regard. Those authors specifically investigated the H-reflexes at myofascial trigger points (MTrPs) using monopolar needle electrodes, and found a lower H-reflex threshold and higher H-reflex amplitude at the MTrPs than at non-MTrPs.² Together their results showed that the H-reflex pathway is involved at myofascial MTrPs. We think that investigating this parameter (H-reflex) in FM subjects in multiple muscles and comparing these results with pain indexes involving the myotome that is rather specific to these reflex arc may be revealing. Besides, the demonstration of the possible presence of H-reflexes in other muscles that are generally silent in healthy subjects would also contribute substantially to understanding the reported findings.

The authors indicate that FM cannot be based on the presence of altered spinal excitability alone, and that other factors and neurological substrates may play additional roles in its pathogenesis. On the other hand, the impaired mechanisms underlying elevations in H-reflex also cannot fully explain the central sensitization (CS) theory in FM. Although the finding of elevated H-reflexes indicates the existence of alterations in this pathway, how the disturbance in this arc is associated with FM pathophysiology remains to be elucidated. We do not know if the elevation in the H-reflex is the main problem leading to CS in FM, or if it represents an electrophysiological sign of other conditions that are coincidentally found in FM, such as depression or anxiety, or whether elevation of the H-reflex is instead a compensatory pathway. Besides, we do not know that if the increased H-reflex responses in this patient group are related to a greater density or excitability of muscle spindle afferents, as has been hypothesized previously,² or if they are related to alterations at the level of spinal pathways. Investigating these reflex responses following a treatment period may provide useful data for answering the above-mentioned questions. FM is normally treated using a multidisciplinary regimen that includes a combination of pharmacological and nonpharmacological interventions.³ However, the mechanisms of action of many of these methods (including also complementary therapies) remain unclear. Future electrophysiological studies that include obtaining follow-up data after treatment may provide insight into the reversible mechanisms of the disease, the mechanisms of

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action of these therapies, and potential targets for future treatment-based approaches.

Finally, there is also a large amount of evidence in the literature for H-reflex responses also being altered in other neurological conditions, such as spinal cord injury, diabetic neuropathy, musculoskeletal pain, and patellofemoral pain.² Therefore, understanding whether this reflex is helpful in diagnosing FM requires FM to be compared with other neurological conditions. Elevation of this reflex may represent a more-comprehensive and insensitive pathology that is present in various neurological diseases. However, considering that no currently available laboratory data support a diagnosis of FM,⁴ the results of this study¹ are certainly dramatic and show potential promise for clinical applications. Future studies focusing on the features of the H-reflex in FM subjects may contribute substantially to revealing unknown aspects of this mysterious disease.

Ethics Statement

Not applicable.

Availability of Data and Material

Data sharing not applicable to this article as no datasets were generated or analyzed during the study.

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Conflicts of Interest

The author has no potential conflicts of interest to disclose.

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