

LETTER TO THE EDITOR

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Comment to “Diabetic peripheral neuropathy: the potential role of vitamin D deficiency” by Oraby et al.

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To the Editor,

We read with great interest the article by Oraby and colleagues [1] regarding the correlation of diabetic peripheral neuropathy and vitamin D deficiency. In this case-control study on 25 patients with diabetic peripheral neuropathy and 25 healthy controls, the authors performed a clinical assessment aimed at evaluating the degree of diabetic neuropathy through the Michigan Neuropathy Screening Instrument (MNSI), followed by a neurophysiological assessment in those with neuropathy. In addition, they measured the serum 25-OH vitamin D and defined the level of serum vitamin D as sufficient, insufficient, and deficient (more than 30 ng/mL, between 20 and 30 ng/mL, and below 20 ng/mL, respectively). Interestingly, they observed a significantly lower vitamin D plasma level in patients with diabetic neuropathy than in healthy controls ($p = 0.008$). Subsequently, the authors performed a subgroup analysis observing a lower value of serum vitamin D in female patients and in patients with a MNSI score above 4 ($p = 0.03$ and $p = 0.006$, respectively). However, the correlation analysis between vitamin D levels and the degree of peripheral neurologic impairment showed no significant difference.

We believe that this study allows a few interesting considerations. The burden of diabetes all over the world is widely recognized, as it is estimated that its prevalence is around 400 million people and figures predict a constant increase in its incidence [2]. Due to the complexity of its pathophysiology, its impact on neurological impairment

ranges from acute conditions as coma [3] or electrolytic disturbances [4] to a chronic peripheral neuropathy [5] which, although not immediately life-threatening, leads to a consistent drop in the patient's quality of life. In this context, a growing evidence is suggesting an important role of vitamin D deficiency. In this particular regard, the findings of Oraby and colleagues are coherent with those of Abdelsadek and colleagues [6] which on a cohort of 80 patients enlightened the role of vitamin D deficiency in the development of diabetic neuropathy. They elegantly demonstrated not only that patients with neuropathy had lower levels of Vitamin D, but also that low vitamin D levels are an independent risk factor for the development of diabetes-related peripheral damages (OR 0.941 [0.856–0.976]; $p = 0.007$) [6]. In this context, the immunoregulatory and anti-inflammatory activity of vitamin D might play a role, as well as in other inflammatory disorders such as rheumatoid arthritis [7, 8].

Despite these interesting results [1, 6], the road to reach a full comprehension of the pathophysiological role of vitamin D in diabetic neuropathy development is still long. In the presence of many confounders, the single weight of vitamin D deficiency on the development of such complication still needs to be clarified. Moreover, since the different strategies of antidiabetic therapy might significantly affect vitamin D values [1], the role of a therapeutic vitamin D regimen either as a prevention or as a treatment should be specifically investigated.

In conclusion, these two studies add important pieces to the diabetes-related neuropathy issue. As the line is drawn, a multicenter randomized controlled trial might help to complete the puzzle.

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Authors' contributions

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