

Letter to the Editor

High frequency of vitamin D insufficiency in polymyalgia rheumatica and giant cell arteritis: preliminary results

Dear Editor,

Polymyalgia rheumatica (PMR) and giant cell arteritis (GCA) are relatively common chronic systemic rheumatic inflammatory diseases that affect adults older than 50 years old. PMR is a disease associated with synovitis of proximal large joints, tenosynovitis, and bursitis¹, and GCA presents temporal artery involvement with increased risk of blindness. Furthermore, PMR patients may have overt GCA, and on the other side, half of the patients with GCA have symptoms of PMR². Vitamin D deficiency is associated with the presence of several autoimmune diseases^{3,4}. However, no study has assessed the association of vitamin D deficiency with PMR and GCA's clinical and consequent laboratory manifestations. This study aimed to evaluate the frequency of vitamin D deficiency and insufficiency in sera from patients with PMR and GCA and correlate them to the disease's possible laboratory manifestations.

This study included eight patients with PMR and GCA, who fulfilled the criteria for these conditions^{5,6}. The clinical, demographic, and laboratory data were collected from the patient charts. The exclusion criteria used were supplementation with calcium and vitamin D, immobilization during the last six months, renal failure, intestinal malabsorption problems, and bisphosphonate use. 25-hydroxyvitamin D (25OHD) levels were measured by an electrochemiluminescence assay (Elecsys Vitamin D total II, Roche Diagnostics, Switzerland) with a coefficient of variation < 5.5%. 25OHD values \leq of 30 ng/ml were indicative of insufficiency, and less than 10 ng/mL were considered deficiency³. C-reactive protein (CRP) was measured by nephelometry and erythrocyte sedimentation rate (ESR) by the modified Westergreen method. JASP statistical program was used. Results are expressed as mean \pm standard deviations, median (range), or percentages, and Spearman correlation was also calculated. Significant results were set as $p < 0.05$.

The mean age of all PMR/GCA patients was 73.4 ± 8.1 years; 88% were female, and 88% Caucasian. The average disease duration was 3.9 ± 2.8 years. Temporal arteritis was observed in one (13%) patient. Systemic hypertension was reported in 63% of the patients, diabetes mellitus in 25%, arrhythmia in 25%, and sigmoid cancer in one patient. ESR mean values were 38.3 ± 27.4 mm/1st hour, and CRP had a median value of 12 mg/dL (1.98-85.7 mg/dL). The mean value of 25OHD among all patients was 24.4 ± 5.7 ng/mL. Importantly, the frequency of 25OHD insufficiency was 100% and deficiency 13%. No significant correlation was observed between vitamin D and age ($\rho = -0.270$, $p = 0.558$), vitamin D and CRP ($\rho = 0.234$, $p = 0.613$), and vitamin D and ESR ($\rho = -0.182$, $p = 0.696$).

The present study demonstrated a very high vitamin D insufficiency frequency involving all patients with PMR and GCA. This frequency is very high in comparison to healthy young adults (36%)⁶ and also in Brazilian studies that showed that 42 to 65% of the Brazilian population have low 25OHD levels^{7,8}. This study had a significant advantage in including only patients with exclusive PMR and GCA, excluding those with any other rheumatologic autoimmune disease.

Possible explanations for the frequent vitamin D insufficiency observed in PMR and GCA include age, low solar exposition, and malnutrition that are commonly observed in older people. Besides the fact that several autoimmune diseases, such as SLE and many other autoimmune conditions, may present vitamin D deficiency⁹, it is conceivable to believe in the existence of autoantibodies against vitamin D, which may be implicated with its serum levels to be reduced^{10,11}.

We have some limitations in this study: first, the small number of participants. Indeed, the present results will need to be confirmed in more extensive studies; second, we did not evaluate the seasons when vitamin D was measured, and it is well known the influence of climate on this hormone.

In summary, the present study demonstrated, for the first time, a very high frequency of vitamin D insufficiency in patients with PMR and GCA. However, future studies are needed to confirm the present results in larger cohorts and evaluate the vitamin D supplementation role in these conditions.

Conflict of Interest

The Authors declare that they have no conflict of interests.

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