

Association between vitamin D deficiency and disease activity in Paraguayan patients with systemic lupus erythematosus

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Abstract

Objective

To identify the association between vitamin D (VD) concentrations and the activity of systemic lupus erythematosus (SLE) and determine a supplementation dose that allows patients to maintain adequate levels of VD.

Methods

Longitudinal, observational study. Serum levels of 25-hydroxy-VD were measured in 100 Paraguayan SLE patients from the Hospital de Clínicas between 2016 and 2018. To analyze the response to different doses of VD supplementation, 50 patients received 1000 IU/day and the other 50 patients received 2000 IU. SLE disease activity measured by SELENA-SLEDAI was scored before and after supplementation.

Results

The mean age was 27.5 \pm 9.8 years, 88.9% of patients presented mild disease activity and 11.1% presented moderate to severe activity. The mean VD concentration was 30.8 \pm 11.8 ng/mL. A total of 34% of patients presented VD insufficiency and 13% VD deficiency. There was an inverse relationship between VD concentrations and SLE disease activity ($p = 0.03$). Increasing levels of serum VD are associated with supplementation of 2000 IU/day ($p = 0.0224$).

Conclusion

SLE activity was associated with low levels of VD. In our cohort, SLE patients required a supplementation dose equal to or greater than 2000 IU/day to increase their serum VD.