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VITAMIN D LEVELS AND ASSOCIATION WITH DISEASE ACTIVITY IN PARAGUAYAN SLE PATIENTS

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Background: Systemic Lupus Erythematosus (SLE) is a systemic inflammatory disease associated with genetic, environmental, hormonal and immunological factors. Vitamin D levels are nowadays considered as one possible factor associated with disease activity. Therefore, previous studies have analyzed vitamin D to the severity of SLE.

Objectives: To assess the Vitamin D status in paraguayean SLE patients and its association with disease activity.

Methods: An observational Trial has been performed on individuals diagnosed with SLE. Epidemiological, clinical and biochemical data have been recorded for each patient to study the association between vitamin D concentrations, the phospho-calcium metabolism parameters and disease activity. Quantitative determination of Vitamin D was perform using chemoluminescence ARCHITEC assay. Vitamin D status was interpreted as follows: deficiency ≤ 20 ng/ml and insufficiency 21-29 ng/ml. The statistical association tests were performed using linear (SLEDAI activity index) and logistic (Inactive/Mild vs Moderate/Severe) regressions. The epidemiological, clinical and biochemical variables were used as explanatory variables in these models. This study is a preliminary analysis of a trial supported by CONACYT (Paraguay) to investigate the role of vitamin D in patients diagnosed with SLE.

Results: We included 77 SLE patients, of whom 94.8% (73/77) were female. The average age of patients at the time of the study was 30.7 ± 10.3 years. All patients received calcium supplements associated with vitamin D. The average vitamin D concentration was 32.2 ± 12.10 ng /ml. 29.9% (23/77) of patients had vitamin D insufficiency and 13.0% had vitamin D deficiency. 94.8% (73/77) of the population had normal serum calcium and the total population had a normal phosphoremia. As for the dosage of PTH, it was found that 27.3% (21/77) have high values of PTH. 20.8% (16/77) of the patients had positive anti-DNA. Low C3 complement was observed in 30/77 (39%) and low C4 in 50/77 (64.9%) patients.

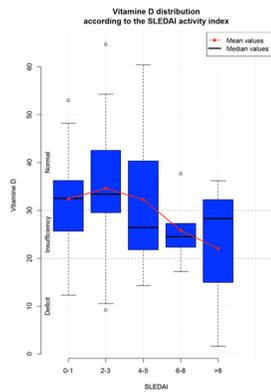
The mean value of SLEDAI at the time of the study was 2.32 ± 2.83 . When we study the distribution of vitamin D concentration according to the disease activity (SLEDAI) a clear pattern is observed linking lower vitamin D concentrations with higher disease activity (Figure 1). Patients with lower vitamin D concentrations are more likely to have higher disease activity (OR 0.93, 95%CI 0.88-0.99; P-Value=0.059). The means and standard deviations of vitamin D depending on the SLEDAI activity index are provided in Table 1.

Table 1. Mean and standard deviation of each patient group according to the ranges of SLEDAI activity index.

SLEDAI	Mean	Standard deviation
0-1	32.41	9.61
2-3	34.59	13.37
4-5	32.28	14.38
6-8	25.8	7.61
>8	22.03	18.13

Image/graph:

Figure 1. Distribution of vitamin D depending on the SLEDAI activity index



Conclusions: In this preliminary study of Paraguayan SLE patients, Vitamin D deficiency was frequent despite treatment with supplements. In addition, a clear association between SLEDAI and Vitamin D values was observed. The final analysis in a larger patient cohort will have to confirm these findings and clarify relation with disease activity.

References: 1.- Eloi M, Horvath DV, Ortega JC, Prado MS, Andrade LE, Szejnfeld VL, de Moura Castro CH. 25-Hydroxivitamin D Serum Concentration, Not Free and Bioavailable Vitamin D, Is Associated with Disease Activity in Systemic Lupus Erythematosus Patients. PLoS One. 2017 Jan 13;12(1)

Disclosure of Interest: None declared