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PREVALENCE OF VITAMIN D DEFICIENCY AND INSUFFICIENCY AND ASSOCIATED FACTORS, IN HEALTHY UNIVERSITY STUDENTS LIVING IN ASUNCIÓN.

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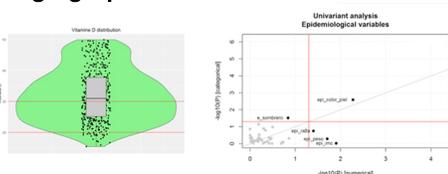
Background: The last decade, there has been a renewed interest in the study of the metabolism and biological action of vitamin D. Vitamin D deficiency and insufficiency is a real public health problem in the world due to its association with multiple diseases which entails significant morbidity and mortality with the consequent economic impact on society. This is the first study of this magnitude carried out with the support of CONACYT (Paraguay) to determine the presence of low concentrations of vitamin D in healthy population of university students living in Asuncion.

Objectives: To determine the prevalence of vitamin D deficiency and insufficiency and associated factors, in healthy university students living in Asunción.

Methods: It is an observational, cross-sectional, pilot study that consists of determining vitamin D concentrations and other parameters of phospho-calcium metabolism. Among the possible epidemiological factors analyzed were race, skin color, daily sun exposure, exercise habits, weight, height and use of sunscreens. A descriptive analysis will be performed and for the analysis of factors associated with vitamin D deficiency and insufficiency, linear and logistic regression models will be used. Vitamin D will be studied in two ways: quantitative and stratified comparing the 'normal' group (> 30ng / dl) against 'insufficiency' (<30 ng / dl) and 'deficit' (<20 ng / dl).

Results: A total of 531 patients were included, with a mean age of 22.2 ± 3.09 . 67.7% of the students were female. 84.4% were of Hispanic. Of the total number of individuals, 47.9% reported some physical activity at least three times a week, 81.2% of the students reported sun exposure on a daily basis. The mean values of vitamin D were $38.89 \text{ ng / dl} \pm 14.86$. Regarding the distribution of vitamin D dosage in the study population, it was observed that 61.77% of the students had values of normal concentration of vitamin D, and 38.23% had low concentrations of vitamin D, as can be seen in figure 1. In relation to the association of vitamin D deficiency or insufficiency and parameters of phospho-calcium metabolism, the multivariate analysis identified a very significant association with high PTH values ($p = 6.67 \times 10^{-9}$, OR 1.04 CI: 1.03-1.05). Quantitative analysis of vitamin D showed significant associations with the values of PTH ($\beta = -0.2$, $p = 3.7 \times 10^{-8}$) and phosphatase ($\beta = 0.1$, $p = 1.4 \times 10^{-3}$). When analyzing the epidemiological variables, only the dark color of the skin was related to vitamin D deficiency and insufficiency (OR 1.38 95% CI 1.12-1.70, $p = 0.003$) as shown in Figure 2.

Image/graph:



Conclusions: In this pilot study, low levels of vitamin D were observed in healthy students living in Asunción, Paraguay, a subtropical country, mostly referring to normal sun exposure and not using sunscreen. It was observed that vitamin D deficiency is associated with dark skin color and that high levels of PTH are associated with low levels of vitamin D. However, this percentage is lower than that reported in other similar studies conducted in the region.

References: Manson JE. Vitamin D Deficiency - Is There Really a Pandemic? N Engl J Med. 2016;375(19):1817-1820

Disclosure of Interest: None declared