

Vitamin D levels and dermatologic comorbidities in patients with rosacea

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★ Introduction

Vitamin D is a highly relevant micronutrient in the proper functioning of multiple organs, as well as being involved in the regulation of the skin barrier by modulating the expression of skin structural proteins such as filaggrin and involucrin. Deficiency of this vitamin has been extensively studied in the pathophysiology of inflammatory skin diseases including atopic dermatitis, however there are few studies on the relationship with the development of rosacea. The aim of this study is to evaluate the behavior of vitamin D levels in patients with rosacea and dermatological comorbidities.

★ Results

The mean vitamin D level was 21.45. We did a one sample T test to compare our mean to the standard normal value (25-hydroxyvitamin D equal or greater to 30) and we found an important statistical difference ($p<.001$). We found a statistically significant difference in the mean of vitamin D levels between sex, in men the mean was 12.76 while in women it was 24.60 ($p<.001$). On the other hand, no significant association was found between vitamin D levels and the phototype of the patients ($p=.63$). A weak correlation was found between the age of the patients and vitamin D with an $r=0.18$ ($p=.001$).

The dermatological comorbidities found in patients with rosacea were seborrheic dermatitis 37 patients (13.54%), CBC 29 (10.7%), contact dermatitis 12 (4.5%), alopecia 8 (3%), atopic dermatitis 7 (2.6%), CEC 6 (2.2%), acne 5 (1.9%), lichen planus 3 (1.1%), psoriasis 3 (1.1%), urticaria 3 (1.1 %), melasma 2 (0.7%), vitiligo 2 (0.7%), granuloma annulare 1 (0.4%), hidradenitis suppurativa 1 (0.4%), melanoma 1 (0.4%). In addition, no statistically significant association was found between comorbid dermatosis and levels of vitamin D ($p=.11$).

★ Conclusions

Interest in the role of vitamin D in the development of different skin diseases has been increasing, taking into account its function as an immunomodulator and regulator of cell growth and proliferation. The levels in our population are similar to those described in the literature, and similarly low levels have been described in other dermatoses such as atopic dermatitis, psoriasis, hidradenitis suppurativa and vitiligo. This highlights the need to determine vitamin D levels in patients with rosacea as part of the initial evaluation. Furthermore, we consider it relevant to perform future studies with different populations to confirm both the role of vitamin D in the development of rosacea and other probably associated inflammatory dermatoses, as well as the behavior of serum levels of this vitamin, which in our study did not show statistical significance when analyzed in the presence of more than one dermatosis. Additionally, we consider it important to determine the impact of treating deficiency/insufficiency as part of the management of chronic inflammatory dermatoses, such as rosacea.

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★ Materials and Methods

A cross-sectional study was carried out, where 270 patients with a diagnosis of rosacea who consulted a dermatological center in Bogotá, Colombia were evaluated. The information was collected from 2016 to 2021. Vitamin D levels were classified as standard normal value was defined as equal or higher than 30, insufficient 20- 30 and deficient less than 20 ng/ ml. Variables such as vitamin D values, sex, phototype and presence or absence of dermatologic comorbidities, data recorded in the medical records, were evaluated. Data analysis was performed using statistical packages in Rstudio software through a univariate and bivariate analysis.

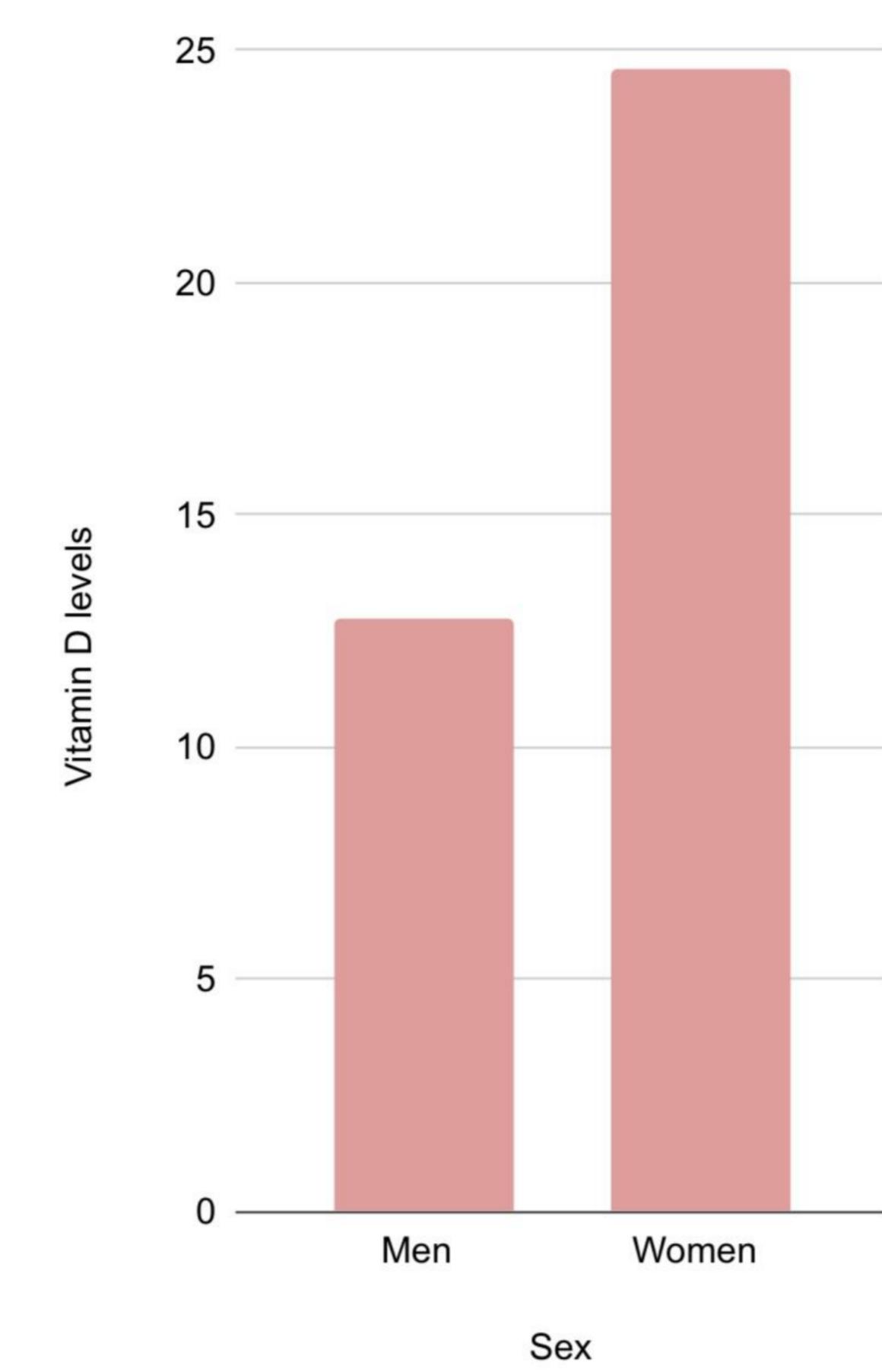


Figure 1: Vitamin D values according to sex.

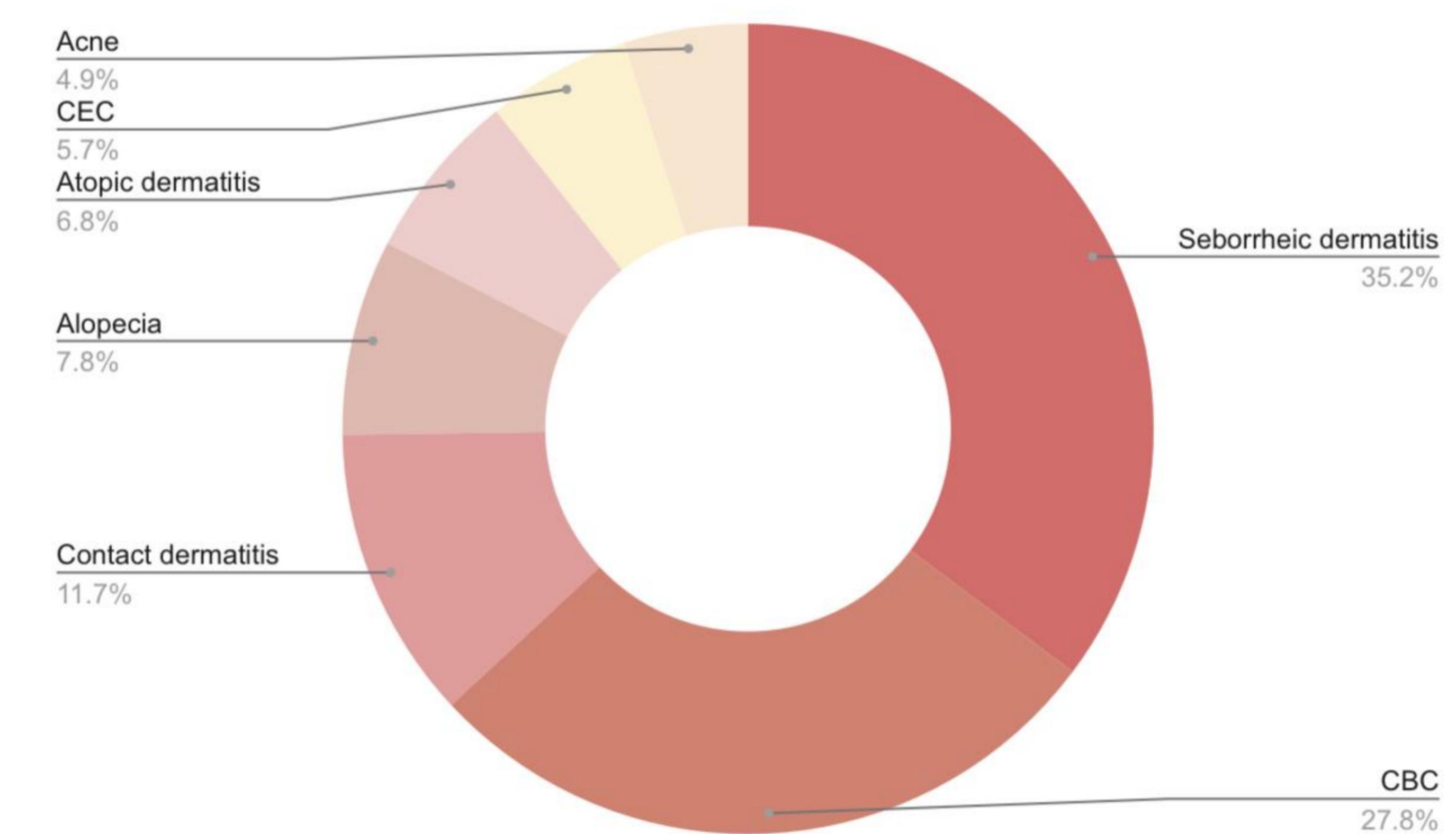


Figure 2: Percentage of dermatological comorbidities in patients with rosacea.