

Association between Vitamin D Deficiency and Psoriasis: A Case-Control Study

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ABSTRACT

Vitamin D is essential for many reasons, including maintaining healthy bones and teeth. It may also protect against a range of diseases and conditions, such as diabetes. Despite its name, vitamin D is not a vitamin, but a prohormone, or precursor of a hormone. Vitamins are nutrients that the body cannot create, and so a person must consume them in the time of diet. However, the body can produce vitamin D.

Vitamin D has several roles in the body. It assists in: promoting healthy bones and teeth, supporting immune, brain, and nervous system health, regulating insulin levels and supporting diabetes management, supporting lung function and cardiovascular health, influencing the expression of genes involved in cancer development.

Psoriasis is a skin disease that causes red, itchy scaly patches, most commonly on the knees, elbows, trunk and scalp. Psoriasis is a common, long-term disease with no cure. It tends to go through cycles, flaring for a few weeks or months, then subsiding for a while or going into remission. Treatments are available to help you manage symptoms. And you can incorporate lifestyle habits and coping strategies to help you live better with Psoriasis.

Many treatments for autoimmune diseases can be expensive and associated with adverse effects. In contrast, a simple intervention such as correction of vitamin D levels could have a great effect on patients affected by psoriasis. However, the controversy in the literature about whether or not serum vitamin D deficiency is associated with psoriasis[9,10] requires further study with an

appropriately large sample size to establish and confirm the relationship.

This multicenter, case-control study was conducted in three major hospitals in Makkah, Saudi Arabia: King Abdulaziz General

Hospital, Hera General Hospital, and King Faisal General Hospital. The required sample size was calculated using the statistical software Epi Info ver. 3.01, based on a confidence interval of 95%, alpha value of 5%, and a worldwide prevalence of vitamin D deficiency of around 2%. consecutive patients aged ≥ 16 years with active psoriasis who attended the outpatient clinics of the three study hospitals; no phototherapy of any kind received in the previous three months; and no oral or topical vitamin D or its derivatives taken in the previous three months. The participants' serum vitamin D (25(OH) D) levels were obtained by collecting 5 ml of blood at the time of the interview; this was kept at -20°C until the analysis. Serum vitamin D deficiency was defined as serum 25(OH)D <20 ng/ml (50 nmol/l), as per the recommendations of the Endocrine Society.

Of the 136 participants in this study (68 psoriasis patients and 68 controls), 133 (98%) were from Makkah city and 114 (84%) were of Saudi nationality. There were 75 (55%) male and 61 (45%) female participants.

The issue of whether vitamin D deficiency contributes to the pathogenesis of psoriasis remains unsettled, with scant data available in the literature. An early cross-sectional study of vitamin D serum levels in patients with psoriasis by Gisondi et al. compared 145 patients with psoriasis to 112 patients with rheumatoid arthritis (RA) and 141

healthy controls and found significantly lower serum levels of 25(OH) D in both the RA and psoriatic patients than in the controls, especially during winter months, but no significant difference between the RA and psoriasis groups. The psoriasis patients presented with a 2.5 times greater risk of 25(OH)D deficiency than the controls. Further research is required to explain the discrepancy in the results of these studies the reaction with the anesthesia. The most likely cause is mutation in ryanodine receptor gene.

Keywords: Psoriasis; Vitamin D; Adalimumab; Etanercept