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Measuring the Level of Vitamin D Concentration in Patients with Psoriasis

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Abstract

Psoriasis is a multifactorial inflammatory derma disease characterized by complex pathogenic mechanisms. The role of immunity, genetics and environmental factors has a significant impact on the disease and its severity. The significant role for vitamins D in the involvement of several systemic diseases and skin conditions, such as psoriasis, has emerged recently through its clear effect in modulating immune mechanisms and chronic inflammation mechanisms. Numerous researches and extensive studies have demonstrated the prominent role of keratinocyte proliferation and its impact on their differentiation, the cutaneous immune system, the regulation of skin flora and an infection's reaction. This study's objective was to compare the level for vitamins D in the serum of psoriasis sufferers with that of healthy individuals group of non-psoriasis controls, and to find out the potential for an effective connection between vitamin D and the disease's clinical symptoms. Methods: The current study included 195 persons (80) healthy people served as the control group, and (115) with psoriasis patients, all of whom were from Babylon Governorate, during a period of three months. ELISA test kits were used to determine the concentration for vitamins D. Results: Serum for vitamins D levels in the patients' group were significantly lower. than the control group, and a significant decrease at the probability level (P≤0.05). Conclusions: In the current study, it was revealed Patients with psoriasis reported reduced serum for vitamins D levels compared to control group had.

Keyword

keratinocytes, vitamin D, manifestations.

Psoriasis has been known as chronic and common inflammatory skin disease and several factors are involved in its events and varying severity, including immunological, both genetic and environmental components, all of which Perform a "effective" role in the pathogenetic mechanism. in its causes and pathogenesis [1]. The characteristic lesions consist of well-defined erythematous and vascular plaques appearing mainly on the extensor and scalp surfaces and follow a clinical course with remissions and exacerbations of the disease. Although it is known as a skin disease that may sometimes affect the joints, Increasing studies have shown that psoriasis is characterized by the association of multi-system inflammation associated with many pathologies such as dyslipidemia, blood sugar, cardiovascular events, seizures, etc [2].There are many treatment options available for the treatment of psoriasis, and the treatment is chosen individually for each patient, but all these treatments are not specific and are unable to bring about a complete cure, but rather their goal is to achieve a long remission of the disease, and many of them have important side effects, which limits their use Discovering more about the precise immunopathogenetic mechanism of psoriasis will open more prospects for developing new therapies and expanding the treatment options currently available. Vitamin D, known as the sunshine vitamin, has in recent years garnered increasing attention from clinicians, public health professionals and researchers [3]. Leaflets on vitamin D have

tripled, due to the re-emergence solid evidence that 1,25-di-hydroxy vitamin D [1,25((OH)) 2D3] is a significant contributor to vitamin D insufficiency as a global health issue., a hormonally effective form of vitamin D, occurs many extrastructural bioresponses including protection from many autoimmune diseases and inhibition of the development of many tumors. Studies confirm a link between vitamin D deficiency and psoriasis, which increases in severity in winter as A small amount of sunshine brightness reaches the skin [4]. Psoriasis does not directly result from a vitamin D deficiency. dry skin and little sunlight are among the most stimulating for the appearance of psoriasis attacks. Vitamin D deficiency is one of the factors contributing to psoriasis, and the healthy rate of vitamin levels is 20-30 (ng/ml) [5]. Vitamin D supplements can be taken orally, whether for those with psoriasis or non-infected people at a dose ranging from 004 to 1000 IU. It is worth mentioning that mushrooms, milk and its products, egg yolks, tuna, sardines and mackerel are among the most important foods rich in vitamin D [6]. Over recent decades it has become increasingly clear that vitamin D's effects are unlimited, including on keratinocytes, on the functions immune systems, both innate and adaptive, and on its complex interaction with other hormones. Vitamin D has many effects modulating immune functions and anti-inflammatory and thus its role in autoimmune diseases[7,8]. Another important effect for vitamins D is its role in derma and skin diseases, as it regulates the proliferation, differentiation, and programmed cell death of epidermal cells. On the innate and acquired skin immune system cells, it also exerts a variety of effects. So, it plays a role in inflammatory and immune skin diseases such as psoriasis, eczema, vitiligo, systemic sclerosis, and systemic lupus erythematous [9]. As well as in skin infections, it also plays a significant part in controlling the hair follicle's development cycle and controlling the functions of the sebaceous glands, and it also shows photo protective effects and promotes wound healing and tissue repair [10].

Materials and methods

Samples were collected from the Dermatology Consultancy Unit at Imam Sadiq Teaching Hospital in the province of Babylon over a period of three months. The study included 195 people (115) patients suffering from psoriasis and (80) healthy individuals who were clinically diagnosed as healthy, showed no symptoms and were used as a monitoring group for the study, The two groups ranged in age from 18 to 60 years. 5 ml of venous blood was withdrawn [11], The level for vitamins D in the two groups was investigated by assay of the enzyme-linked immunosorbent according to the manual procedures of the company (MyBioSource), Used statistical analysis (using SAS version 9.2) to examine data results(SAS institute inc., Cary, North Carolina, USA) employing t tests for data analysis.

Result

The findings of the present investigation revealed a substantial ($P<0.05$)

reduction in a group's average vitamin D content average serum for vitamins D level was significantly lower in individuals with psoriasis compared to a healthy group, (7.15±191.81) pg/ml in patients and (25.76±641.99) pg/ml among the control group. The average age of psoriatic patients was (21.17 ± 60.80) years, while the control group was (18.01 ± 40.77) Years, there was no discernible difference between the two groups in ($P =.06$). , as shown in table 1.

Table 1: Show averages of vitamin D and Age for patients and control group.

Sig	SD±Mean	Sample	
0.05	7.15±191.81	patients	Vitamin D (Pg/ml)
	25.76±641.99	Control	
0.06	21.17±60.80	Patients	Age (years)
	18.01±40.77	Control	

Discussion

In light of creation of a larger database on the origins of psoriasis and how vitamin D and its analogs are used to treat it, and the progress in comprehending how vitamin D affects skin conditions like psoriasis. recent articles published in the medical literature have supported this hypothesis [12,13], Most studies have shown this context, but not all that indicates low vitamin D in psoriasis patients, and so far there is no one prove the existence of a clear causal relationship to this compared to this ongoing rise of research from throughout the world on the prospect significance for vitamins D, The etiology of psoriasis includes variations in its receptors and serum levels. [14]. Many studies found high prevalence rates. However, the global prevalence vitamins D deficiency is not yet known, with data lacking for many countries as well as in many spatial groups, especially children, infants, adolescents, and pregnant women [15]. The current study agreed with what was indicated by the research of where In our research, vitamin D levels for

psoriasis patients decreased by comparing it with the control group, which showed the normal level, which is above 20 (ng/mg) [16]. The research attributed that the reason for the decrease in vitamin D in patients is due to the concept of Interplay between keratinocytes, immune cells, and cytokines released by these cells, including the innate immune system's cells (IFN-producing plasma dendritic cells, TNF- α producing dendritic cells, IL-23, IL-12, Macrophages, and Neutrophils) and adaptive immune system cells (T cells CD4+ especially Th17 subsets, its producing TNF- α , interleukin-6, interleukin-17A, interleukin-17F, interleukin-21, interleukin-22, and Th1 its producing IFN- γ, IL-2, TNF- α and T regular cells Treg) and vascular alterations may contribute to Effect on keratinocyte receptors and inhibition of vitamin D binding, which in turn results in a decrease in vitamin D absorption [17,18,19]. While other Patrick Benjamin Wilson used information from NHANES, a population-based survey of health and nutrition, will be used to research in the United States in 2013. between 2003 and 2006 demonstrated that patients with psoriasis do not have reduced vitamin D levels. compared to those lacking the condition. [20,21] . that is not consistent based on the findings of our investigation or any of the aforementioned studies. Note that this research analyzed the data of a large sample of the general population and not only hospital patients. On the other hand, it relied on selecting psoriasis patients by questioning the patient if he had previously been told that he had psoriasis. psoriasis by a healthcare provider regardless of whether an active infection was present at the time of the study.

Conclusion

According to the current study, Vitamin D levels were decreased in psoriasis patients than the control group, and depending on age there is no statistical difference between the two groups within the study samples.

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