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CLINICAL CASE REPORT

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High Dose Vitamin D Therapy & Anti-inflammatory Diet

(Psoriasis Vulgaris)

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ABSTRACT

This clinical case describes the successful treatment of psoriasis vulgaris in a patient through a multifaceted approach including dietary modifications, vitamin D supplementation, and probiotics. Initial laboratory findings revealed an ANA (+) result, lipid abnormalities, and a deficiency in cholecalciferol and calcitriol. The patient was prescribed 60,000 IU of cholecalciferol with necessary cofactors, leading to partial improvement in symptoms after five months. The dose was increased to 100,000 IU D3, and probiotics were added to the regimen. After nine months of treatment, complete remission of psoriasis was observed, with laboratory findings showing significant improvements in calcifediol and calcitriol levels, normal Ca+ levels, and lower PTH. These results demonstrate the potential benefits of a comprehensive approach to managing psoriasis, addressing underlying nutritional deficiencies, dysbiosis and lifestyle factors.

INTRODUCTION

Psoriasis is a chronic inflammatory skin condition that affects around 2-3% of the world's population [1]. It is characterized by thick, scaly patches of skin that are often red and itchy. The condition can be mild or severe, and it can have a significant impact on a person's quality of life.

One of the key biomarkers involved in psoriasis is the overproduction of pro-inflammatory cytokines, such as tumor necrosis factor-alpha (TNF-α), interleukin (IL)-6, IL-17, and IL-23 [2]. These cytokines play a crucial role in the development of psoriasis by inducing the proliferation of keratinocytes and promoting inflammation in the skin.

Another important biomarker in psoriasis is the activation of T cells, particularly CD4+ T helper (Th) 1 and Th17 cells. These cells produce cytokines such as interferon-gamma (IFN-γ) and IL-17 [3], which stimulate the production of pro-inflammatory cytokines and lead to the recruitment of immune cells into the skin.

Histopathologic findings showed hyperkeratosis, parakeratosis, acanthosis, and elongation of the rete ridges. Presence of epidermal thickening due to the proliferation of keratinocytes with significant infiltration of T cells and dendritic cells (Figure 1.0).

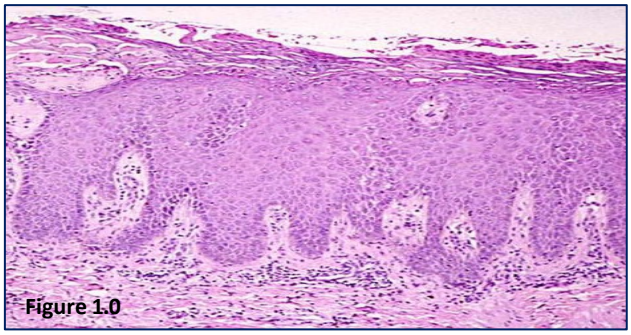


Figure 1.0

HIGH DOSE VITAMIN D (HDVD) THERAPY & AID

High dose vitamin D (HDVD) therapy has shown to be effective in treating a variety of autoimmune conditions, including psoriasis [4]. The therapy involves taking very high doses of vitamin D3, which is taken in the form of cholecalciferol. The therapy is typically used in combination with other cofactors that enhance and support the immune system.

However, **''The LGS (Leaky Gut Syndrome) Protocol''** created by *Dr. Eduardo Beltran* is an adaptation of many different protocols which follow somewhat similar recommendations found in the **Coimbra protocol**, based on a high-dose vitamin D therapy developed by *Dr. Cicero Galli Coimbra* in Brazil [4].

Much can be attributed to the findings of Dr. Coimbra, regarding the presence of single nucleotide polymorphisms (SNPs). More than 80% of our patients that have consulted and undergone genetic testing in our practice have vitamin D genes polymorphisms *(CYP2R1, CYP27B1, VDBP and VDR)* [5] and SNPs genes that participate in the methylation cycle (*MTHFR and MTR)* [6].

However, the LGS protocol is designed to not only address genetic polymorphism but to fix underlying gut issues that affect microbiome diversity. Almost every single patient encountered in our practice has a certain degree of dysbiosis, SIBO, SIFO or the presence of biofilms. The protocol consists in introducing an anti-inflammatory diet (AID) [7] that is free from *gluten, dairy, lectins, and sugar, and highly processed carbohydrates.*

The LGS protocol also introduces supplements that enhance phase 1 and 2 of liver metabolism with **R-Alpha Lipoic Acid, Mg+, K2 (MK7), B1,B2,B4,B5,B6, B9 & B12.** These last two must be in their methyl form. Enterocyte tight junction integrity is obtained with compounded formulas that contain; **L-Glutamine, Licorice & Aloe vera extract** [8,9,10].

Mitochondrial support is done by using a compounded mix of **CoQ10, L-Carnitine, D-Ribose, & Magnesium complex** [11,12,13]. Use of **Royal Jelly** ha recently been incorporated into the protocol since it has shown to improve stem cell function and patients refer feeling better on it. *More than 25 supplements are compounded and taken on a daily basis on the LGS Protocol.*

In case of severe dysbiosis, SIBO, SIFO or in the presence of biofilms antimicrobial herbs or biofilm disruptors are utilized such as **oregano oil** [14], **berberine** [15], **garlic** [16], **licorice, juniper** and many others.

Two vitamin D3 dosage modalities are incorporated into the protocol. A physiologic dose of **200IU/kg/day** is prescribed when high dose vitamin D criterias are not met.

Therapeutic high dose recommendations starts at **500 IU/kg/day**. This starting dose was established after noticing when patients improved their gut health. **When dysbiosis is fixed HDVD requirements tend to be less.**

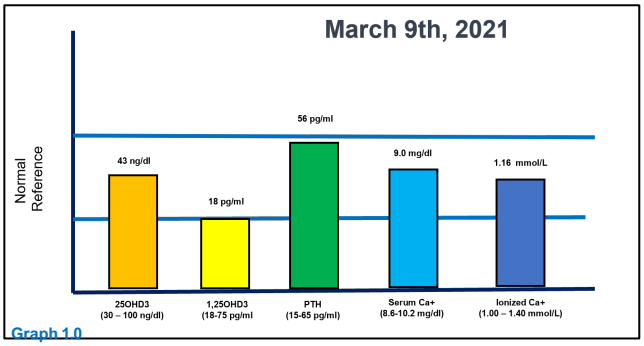
CLINICAL CASE

The following case report is of a 67-year-old female patient with a history of ***psoriasis vulgaris***. The patient was diagnosed with psoriasis 11 years ago and had a history of hypertension, depression, and anxiety. She previously consulted 5 dermatologists and was prescribed oral methotrexate, topical corticosteroid creams without any considerable improvements. She was also a heavy smoker, consuming one pack of cigarettes per day, and her diet consisted of foods that contained gluten, dairy, lectins, and sugar, as well as highly processed foods.

The patient reached out to Dr. Eduardo Beltran through her daughter, who is a dentist in São Paulo, Brazil. She had heard about the LGS protocol from other patients and was interested in ‘‘giving it a try’’. During the initial Tele-consult on March 1st, 2021, the patient was informed that she would need to undergo a strict anti-inflammatory diet, as well as high-dose vitamin D therapy with cofactors and other supplements.

The patient's dermatologic lesions were compatible with **psoriasis vulgaris** and were confirmed by histopathology. Her **PASI score was 28**, indicating severe disease activity (Fig1.0). The patient was informed that smoking could affect the treatment and that it was highly recommended for her to gradually reduce smoking consumption. A minimum of 2.5 liters of water consumption was required to be on the LGS protocol.

Initial laboratory findings on **March 9th, 2021**, showed a positive antinuclear antibody titers, **ANA (+),** Cholecalciferol of 25OHD3: 43 ng/ml, Calcitriol of 18 pg/ml, Serum Ca+: 9.0 mg/dl, Ionized Ca+: 1.16 mmol/L, and PTH: 56.90 pg/ml (Graph 1.0). The patient's lipid panel was abnormal, with elevated LDL and TGs and normal HDL. Her liver enzymes and kidney function were normal.



Graph 1.0

In this graph 25OHD3 (calcifediol) shows apparent misleading sufficiency, but when compared to 1,25OHD3 (calcitriol) we notice an important deficiency alongside with elevated PTH and normal calcium levels. Measuring both vitamin D metabolites are always necessary in order to identify any possible hidden vitamin D deficiency, resistance or underlying genetic polymorphisms.

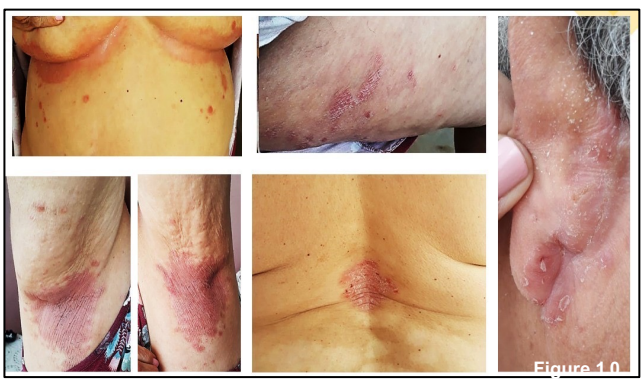


Figure 1.0

In this image we can observe skin lesions that are raised, red, with scaly plaques. These plaques were present through out the whole-body affecting scalp, trunk, armpits, upper and lower extremities. Plaques were itchy, painful, and sometimes cracked and bled. The scalp was red and extremely irritated and presented constant desquamation. PASI score of 28.

A prescription of **60,000 IU of cholecalciferol / day** was given. After a five-month follow-up in (August, 2021) the patient showed partial signs of improvement (Figure 1.1), Patient was advised to continue working on her diet and increase her dose to **100,000 IU D3**. *Probiotics were also added to her regimen.*

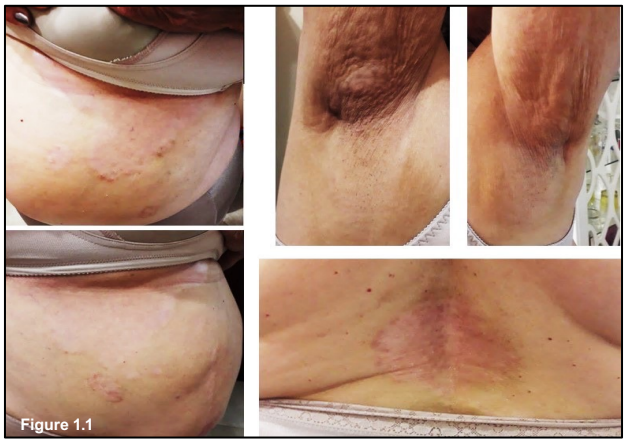
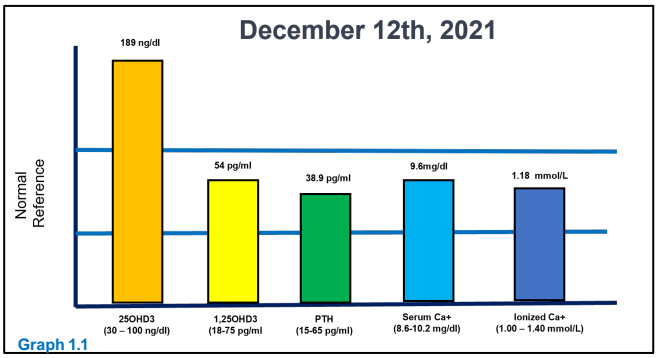


Figure 1.1

The following images were taken after a 5 month follow-up. Patient was initially prescribed 60.000 IU/day of D3. Here we can clearly observe partial clinical improvement of the skin lesions. Patient referred feeling somewhat better and that plaques were less irritated and with less desquamation. Dosage was increased to 100.000 IU of cholecalciferol. No signs of vitamin D toxicity were noted during the first 5 months of treatment.

Soon after nine months of treatment, signs of ***complete remission*** were observed on December 12th, 2021 (Figure 1.2). Laboratory findings showed Cholecalciferol of 189 ng/dl, Calcitriol of 54 pg/ml, Serum Ca+: 9.6 mg/dl, ionized Ca+: 1.18 mmol/L, and PTH 38.9 pg/ml (Graph 1.1), **ANA was normal.**



Graph 1.1

In this graph we can appreciate an elevated 25OHD3 (calcifediol) above normal reference values. 1,25OHD3 (calcitriol) is now found to be within optimal reference values. When comparing both vitamin D metabolites we can clearly see a large discrepancy between both metabolites which are suggestive of a possible genetic polymorphism. There was a considerable decrease in PTH levels which suggests overturning of the vitamin D resistance. Calcium levels were normal. No vitamin D toxicity was induced with 100.000 IU of cholecalciferol.

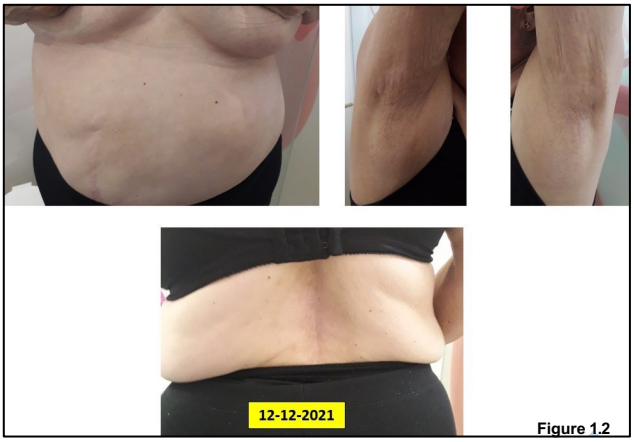


Figure 1.2

The following images were taken after a 9 month follow-up. Here we can clearly observe complete clinical remission and absence of any skin lesions. PASI score of 0. Patient was extremely satisfied with the results and was able to lose approximately 20 kg on the diet. The dosage was eventually reduced to 50.000 IU of cholecalciferol a day. Lipid panel and her ANA titers are still normal. No signs of vitamin D toxicity were ever noted until now. Patient continues doing periodic annual check-up and is back to having a normal life. She is still on the diet.

DISCUSSION

Vitamin D is essential for the proper functioning of the immune system, bone health, and overall wellbeing. The conversion of cholecalciferol to calcitriol is critical for vitamin D activation, and any polymorphism affecting this process can lead to suboptimal vitamin D status, despite supplementation. Therefore, it is crucial to measure both calcifediol and calcitriol to evaluate vitamin D status accurately. In this case, the laboratory findings suggest a polymorphism affecting the conversion of cholecalciferol to calcitriol, leading to suboptimal vitamin D status despite supplementation.

Psoriasis is a chronic inflammatory disease that that not only affects the skin, but is highly consistent with having an altered microbiome diversity. Abnormal lipid profiles in psoriasis patients can be suggestive of ongoing leaky gut syndrome, which is characterized by increased gut permeability, allowing toxins to enter the bloodstream and trigger an inflammatory response. Lipoproteins and lipopolysaccharide binding proteins increase to eliminate endotoxins, which are produced by gut bacteria, leading to systemic inflammation. **An anti-inflammatory diet can help reduce the entrance of endotoxins, exotoxins and mycotoxins, ultimately reducing inflammation and improving psoriasis symptoms.**

CONCLUSION

In conclusion, the presented clinical case highlights the benefits of HDVD therapy associated with an anti-inflammatory diet in the management of psoriasis. It is important to always investigate the causes of vitamin D resistance and underlining infections to ensure that patients receive appropriate treatment.

The laboratory findings in this case were suggest of vitamin D polymorphisms affecting the conversion of calcifediol to calcitriol which can lead to suboptimal vitamin D status despite supplementation. Therefore, individualized vitamin D supplementation based on each patient's unique needs is crucial.

Most importantly, the patient did not show any signs of vitamin D toxicity as long as they followed the protocol under medical guidance. The use of an anti-inflammatory diet can reduce significantly the entrance of endotoxins and mycotoxins, ultimately reducing inflammation and improving psoriasis symptoms.

The LGS protocol presented in this case provides an excellent alternative for treating autoimmune diseases when compared to conventional standards.

Overall, this case highlights the importance of a personalized approach to psoriasis management that includes vitamin D supplementation, dietary changes, and the investigation of underlying causes of vitamin D resistance and infections. With appropriate management, complete remission of psoriasis symptoms can be achieved.

NOTES

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The author has declared that no competing interests exist.

HUMAN ETHICS

Consent was obtained by all participants in this study

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