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TREATMENT FOR VITILIGO WITH A COMPOUNDED FORMULATION CONTAINING TOPICAL ANTI-INFLAMMATORY DRUGS: CASE REPORT

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ABSTRACT

Introduction: Vitiligo is a dermatological condition that causes white spots on the skin due to the loss of melanocytes. Classified as an autoimmune disease, it is associated with genetic and environmental factors, and oxidative stress. It occurs predominantly in people aged between 10 and 30 years, affecting the self-esteem and quality of life of patients. Objective: This study aimed to follow a patient using a manipulated formulation containing topical anti-inflammatory drugs, regarding the improvement in the pigmentation of the spots. Case Report: The volunteer presented vitiligo spots in the eye ~]area and eyelid, leading to self-esteem problems because they are very visible spots. The formulation containing topical anti-inflammatory drugs was manipulated at a Compounding Pharmacy in the city of Maringá (PR) and delivered to the volunteer, with instructions for use for application once a day directly on the spots, always at night, after cleaning the affected region. The students were monitored weekly, through photos and the application of a questionnaire to the volunteer. The treatment was carried out for 30 days, without any complications, discomfort or skin irritation. The patient reported having undergone the treatment without interruption,

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and, after the total treatment time, there was a significant improvement in pigmentation. In the questionnaire applied, the volunteer reported that there was an improvement in the appearance of the spots, and the result can be observed in the weekly photos. This research was approved by the Ethics Committee for Research with Human Beings of Uningá (CEP/Uningá), under protocol number 6,950,683.

Keywords: Autoimmune Disease. Magistral Pharmacy. Corticosteroids.

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INTRODUCTION

Vitiligo is a disorder characterized by skin depigmentation. It is a disease that is characterized by the selective loss of melanocytes that causes non-squamous white spots (Picardo et al., 2015; Taieb et al., 2008).

This process is also known as hypochromia, which has as its concept the decrease or absence of pigmentation in melanocytes, which are cells responsible for the production of melanin in the skin. Hypochromia spots are noticed in photo-exposed areas, such as the face, the back of the hands, and near body orifices. It has a symmetrical distribution, and can cause leukotrichia, which is the graying of hair, such as eyebrows, eyelashes, and pubic hair. One factor that can cause depigmentation is damage to the skin, when the affected region is healed, it regenerates without pigmentation (Barona et al., 1995; Abdi, 2023).

In recent years, there have been significant advances in understanding the pathogenesis of vitiligo. It is currently classified as an autoimmune disease, related to genetic and environmental factors, and oxidative stress (Ezzedine et al., 2012a; Picardo et al., 2015; Marchioro et al., 2022).

The main factors that lead to the disease are associated with genetic problems. This is an easily diagnosed pathology due to its characteristic manifestation and due to the correlation with the carrier's emotional factors (Alshiyab et al., 2018; Simons et al., 2020).

Vitiligo can cause discomfort and embarrassment to the sufferer due to the appearance and aesthetics of the skin, especially considering that the age group where the first symptoms manifest occurs between 10 and 30 years old, which is the phase of adolescence and youth. It is important to highlight that 25% of patients report the onset of symptoms before the age of 10 years, approximately 50% before the age of 20, and about 70-80% before the age of 30 years (Ezzedine et al., 2012a; Lee et al., 2015).

The treatment of vitiligo can be done in different ways, such as phototherapy, surgeries and topical therapies, immunosuppressive agents, and vitamin D supplementation. However, the demand for treatment of the disease currently remains below expectations because it is not efficient for all patients, so the therapeutic option to be chosen will depend on the severity of the disease and the patient's response (Zubair and Hamzavi, 2020).

Topical anti-inflammatory drugs have been investigated as a therapeutic option for the treatment of vitiligo. These medications, such as betamethasone and salicylic acid, work

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by reducing local inflammation and can help stop the destruction of melanocytes, the cells responsible for producing melanin. Studies have shown that the application of topical corticosteroids can result in repigmentation in some patients, especially when used in combination with other therapies, such as phototherapy. Although efficacy may vary between individuals, the topical approach is considered a less invasive option with fewer side effects compared to systemic treatments (Ezzedine et al., 2012b; Picardo et al., 2015).

METHODOLOGY

PREPARATION OF THE CREAM

The topical formulation used in the present study was developed and manipulated in a magistral pharmacy in the city of Maringá, Brazil, according to the description below:

Salicylic acid -------- 3%

Betamatasna---------- 0,5%

Stimutex®---------- 1%

Nutriomega® 3,6,7 and 9-------- 5%

Creme Olivem®---------- qsp 100%

The formulation was prepared by incorporating the active ingredients into the base cream.

CASE REPORT

A 31-year-old mechanical engineer was diagnosed with vitiligo at the age of 21. He has no history of altered TSH, no changes in blood pressure, diabetes, cholesterol, slightly altered triglycerides, sedentary patient, sleeping 6 hours a night, no reports or health complaints. 11 years ago he had vitiligo triggered by stress, with the eye region being the first to be affected.

RESULTS

During the 30-day follow-up, weekly evaluations of the efficacy of topical anti-inflammatory facial cream in the treatment of vitiligo in a volunteer patient were performed. The treatment consisted of daily application of the cream to the patient's eye and eyelid blemishes. The photographic records (Figure 1) revealed that, after four weeks of continuous application, there were significant changes in skin pigmentation. The white spots

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typical of vitiligo were reduced, with evidence of improved pigmentation and recovery at the edges of the lesions. A transition from white to light pink was observed in the affected areas.

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Figure 1. Photos of the eye and eyelid region of the patient treated with dermatological cream containing anti-inflammatory drugs

A – Photo before the start of treatment (right side of the patient); B – Photo before the start of treatment (patient's left side); C – Photo after 30 days of treatment (right side of the patient); D – Photo after 30 days of treatment (patient's left side). Image Source: The authors.

DISCUSSION

Vitiligo is a complex, multifactorial condition where the loss of melanocytes results in skin depigmentation. The evolution of the understanding of its pathogenesis, currently classified as an autoimmune disease, allows the exploration of new therapeutic options.

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The identification of genetic and environmental factors, and oxidative stress as disease triggers highlights the need for personalized approaches for each patient, considering the variability of clinical presentation and response to treatment. The social stigma associated with vitiligo, especially in young individuals, reinforces the importance of effective and accessible interventions, aimed not only at repigmentation, but also at the emotional well-being of those affected (Castro et. al., 2012; Carvalho et al., 2024).

Available treatments for vitiligo include phototherapy, topical therapies, and surgical interventions, each with its advantages and limitations. The choice of treatment should consider the severity of the disease, the characteristics of the patient and his willingness to follow the therapeutic regimen. While phototherapy has shown promising results, its effectiveness may be limited by factors such as the location of lesions and the frequency of sessions. Therefore, the search for alternatives, such as the use of topical anti-inflammatory drugs, is essential, since they have fewer side effects and can be administered in a more practical way on a daily basis (Zubair and Hamzavi, 2020; Nascimento et al., 2024).

The results obtained with the cream containing salicylic acid and betamethasone in the treatment of vitiligo in the case presented here reveal a promising potential for this approach. The observation of repigmentation in the affected areas, with a transition from white to light pink, suggests that the combination of active ingredients may have contributed to the restoration of melanin. The reduction of local inflammation and the protection of melanocytes are mechanisms that may explain the observed efficacy. This study corroborates the existing literature that advocates the use of topical corticosteroids, which may be even more effective when associated with other treatments, such as phototherapy (Ezzedine et al., 2012b; Picardo et al., 2015; Nudelmann and Farias, 2021).

However, it is important to consider that the response to treatment can vary significantly between patients. The effectiveness observed in a single case does not guarantee similar results in other individuals, due to factors such as age at disease onset, extent of lesions, and genetic predisposition. Additional studies, with larger samples and controlled methodologies, are needed to validate the efficacy and safety of this formulation in different patient profiles. Continued research in this field is essential for the development of more effective treatments that meet the needs of patients and improve the quality of life of those affected by vitiligo (Gao et al., 2019).

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CONCLUSION

Vitiligo represents a significant clinical challenge, both because of the complexity of its pathogenesis and because of the emotional impact it has on patients, especially among young people. Advances in the understanding of the disease, combined with new therapeutic options such as topical anti-inflammatory drugs, offer hope for a more effective and personalized approach to treatment.

The case presented here highlights the potential of the combination of salicylic acid and betamethasone in skin repigmentation, suggesting that this strategy may be a valuable addition to existing therapies. However, it is crucial to conduct further research with larger sample sizes to confirm these findings and improve interventions. The focus should always be on developing treatments that not only promote repigmentation, but also improve patients' quality of life by holistically addressing the physical and emotional aspects of vitiligo.

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