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Case Report

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# Effective Anti-IL-17 response in psoriasis affecting hard-to-treat places with previous immunobiological failure

## Abstract

Psoriasis is a chronic inflammatory systemic disease that predominantly presents with skin, nail and joint manifestations. It can be a disabling disease, both due to the skin lesions and the presence of the articular form. The article aims to report a case of successful treatment of har-to-treat places os psoriasis with an immunobiological drug and reforce the importance of the dermatologist in evaluating and monitoring together with the rheumatologist stands out in patients with seronegative axial arthritis.

**Keywords:** psoriasis, psoriatic arthritis, skin diseases, biologicals, dermatologic agents

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**Abbreviations:** PsA, psoriatic arthritis; PASI, psoriasis area severity index; AAS, acetylsalicylic acid; NSAIDs, non-steroid anti-inflammatory drugs; DLQI, dermatology life quality index

## Introduction

Psoriasis is a chronic inflammatory systemic disease that predominantly presents with skin, nail and joint manifestations. It can be a disabling disease, both due to the skin lesions and the presence of the articular form, which constitutes psoriatic arthritis. Skin involvement is characterized by the appearance of erythematous scaly plaques, of varying dimensions, with well-defined edges and varying degrees of scale accumulation. Its most common presentation is in the form of plaques (called psoriasis vulgaris), symmetrical and located preferentially on the extensor surfaces of the knees, elbows, scalp and lumbosacral region. However, the entire integument can be affected. Other clinical forms may occur in isolation or overlapping and may or may not be associated with psoriatic arthritis, such as gout (guttate), inverted (flexor), palmoplantar, pustular, erythrodermic and ungueal arthritis.[1]

Psoriatic arthritis (PsA) is a systemic inflammatory disease associated with psoriasis, belonging to the group of spondyloarthritis, characterized by generally negative rheumatoid factor serology, skin and nail involvement (psoriasis), peripheral joints, axial skeleton (spondylitis or sacroiliitis), enthesitis (inflammation of the insertion of tendons, ligaments and joint capsule to bone surfaces) and dactylitis ("sausage finger").[2,3]

The diagnosis of psoriasis is based on clinical presentation, possibly requiring a skin biopsy for confirmation, in atypical cases or in cases of diagnostic doubt. The treatment of cutaneous psoriasis is listed in stages, according to the degree of involvement, interference in the sociocultural aspect and the availability of therapeutic arsenal in the region where the patient lives.

## Case report

Female patient, 55 years old, sedentary, with chronic hepatitis B using tenofovir under follow-up with a hepatologist, with a history of angioedema with AAS and NSAIDs, being treated for spondylitis with anti-TNF alpha for 3 years by a rheumatologist, referred for evaluation of skin changes. In her past medical history, she reports that inflammatory pain began in the lumbosacral region, with some morning stiffness, when she began the treatment with anti-TNF alpha (monoclonal antibody) with her rheumatologist for seronegative axial arthritis, having the diagnosis of ankylosing spondylitis. At the time, she achieved good results, with inflammation control until then. In consult, she reported that 5 months ago, plaques with a more hyperkeratotic and scaly appearance appeard in the plantar regions, bilaterally, in addition to detachment and changes in the toenails. Due to the low index of affected body surface area (PASI = 2.0), the rheumatologist himself opted in the first instance for topical treatment with salicylic acid + betamethasone in association with anti-TNF alpha already in use, which in addition to being the first stage of treatment biological for PsA, it is for cutaneous psoriasis. The patient did not have a good response, so she was referred to the dermatology service.[4,5]

When consulted with the dermatologist, she presented a lack of satisfactory improvement in her plantar and nail lesions. On physical examination, she presented erythematous plaques with hyperkeratosis and scaling on the soles of her feet, in addition to onycholysis and hyperkeratosis affecting more than 50% of her toenails.

 

Because the diagnosis is based on clinical criteria, the initial signs and symptoms that led to the diagnosis of psoriasis were:

I. Previous history of axial rheumatological involvement

II. Characteristic cutaneous involvement with a predominance of plantar pattern

III. Characteristic nail involvement.

Then, it was decided to optimize topical therapy, prescribing Urea + LCD + Clobetasol for plantar plate injuries, in addition to the combination of calcipotriol + betamethasone for nails, also associated with anti-TNF alpha. With no response after 4 weeks of treatment, she reported in consultation the emergence of complaints of peripheral joint pain, and ultrasonographic study was performed with signs of tendinopathies. Now, when setting goals for the patient, the improvement in quality of life was taken into account due to the embarrassment of injuries, difficulty in walking and joint pain. Therefore, in dermatology the metrics used were PASI and DLQI, which scored 2.0 and 22, respectively.[6,7]

Taking into account the lack of services that offer phototherapy in the state of Mato Grosso, Brazil, the hepatologist's contraindication to the use of methotrexate due to chronic hepatitis B, there was a decision in common with the rheumatologist to change the biological medication to an effective option across all affected domains. After carrying out blood biochemistry laboratory tests, serology for infectious diseases and tuberculosis screening, as recommended in the Psoriasis Consensus 2020, of the Brazilian Society of Dermatology. A humanized IgG4 monoclonal antibody with high affinity and selective binding to IL-17A was then started, thus reducing the inflammatory process and symptoms of psoriasis. Prescribed your loading dose of 160mg in week zero, followed by 80mg every two weeks until week twelve.[7]

During the return consultations, a favorable evolution was observed for the patient, already in week four showing a reduction in plantar lesions, and with the beginning of lightening of the nail lesions. Joint pain was reduced, as expected (Figures 1 – 4). Follow-up was then carried out, and already in week twelve, the patient showed significant lightening of the plantar lesions, reaching PASI 90, with significant improvement in the nail lesions, even though they are difficult to control.[8,9]

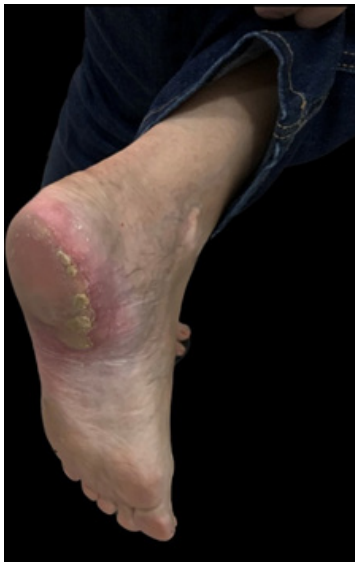

**Figure 1** Week zero of the use of anti-IL-17.

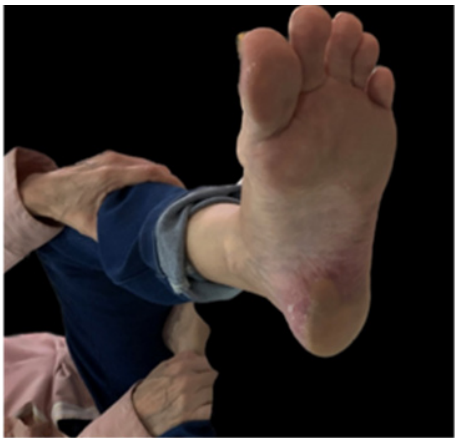

**Figure 2** Week four of the use of anti-IL-17.

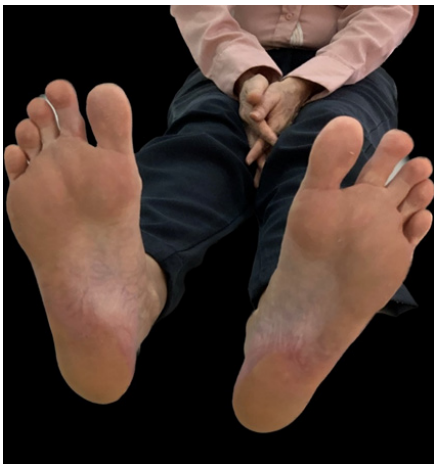

**Figure 3** Week twelve of the use of anti-IL-17.

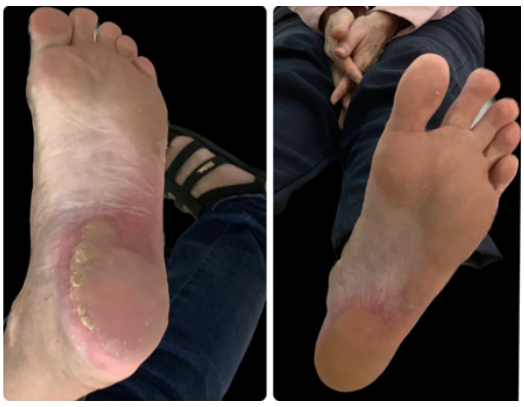

**Figure 4** Comparison of week zero to week twelve of the use of anti-IL-17, from the left to the right, respectively.

## Results and discussion

Brazilian epidemiological studies indicate that PsA is the second most common spondyloarthritis in the country, with a prevalence of 13.7%, which is higher than 33% in the population previously affected by psoriasis. In 75% of cases, PsA manifests itself after the appearance of skin lesions; with simultaneous onset in 10% of patients; and in 15%, PsA may precede psoriasis. Nowadays, there is a wide range of therapeutic arsenal, enabling the doctor to analyze and indicate the best individualized treatment for each patient profile. Therefore,

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with this in mind, were opted for the treatment with a drug proven to be effective in the treatment of psoriasis, with excellent responses in psoriatic arthritis, and an excellent safety profile in patients with other comorbidities. In addition to its rapid action, allowing good control of lesions in a shorter period of time when compared to other drugs, such as anti-TNF alpha, patients reach PASI 90 in 12 weeks or less, as can be seen in clinical practice, maintaining a sustained response over the course of months to years. In the case of special areas where psoriasis can affect, it is the medication that has the largest number of scientific studies that prove the effectiveness of sustained long-term action.[10–14]

## Conclusion

Therefore, in the case presented, the importance of the dermatologist in evaluating and monitoring together with the rheumatologist stands out in patients with seronegative axial arthritis who present skin lesions after a certain period of treatment. Topical treatment is often able to control specific lesions restricted to the skin. However, when joint involvement or special areas are observed, even with a low level of affected surface, but refractory to previous treatments, the indication of systemic therapy becomes the best option.

## Acknowledgments

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## Conflicts of interest

Authors declare there is no conflict of interest.

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