Erythrodermic Psoriasis Successfully Treated with Anti IL-17: A Case Series

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ABSTRACT Erythrodermic psoriasis (EP) is a very rare but extremely severe subtype of chronic plaque psoriasis. Its pathogenesis still remains unknown, and current therapeutic strategies frequently end in failure. Erythrodermic psoriasis often requires hospitalization in order to control any kind of possible serious complications. Treatment of EP is a challenge for clinicians because international guidelines are lacking.
Nevertheless, Th17 has been shown to be the second-most predominant T-cell type after Th2 in EP lesions. There is a growing body of evidence supporting the safety and efficacy of biologics in rapidly achieving near-total clearance of EP, particularly within the IL-17 class. Herein we report a series of 5 cases of EP successfully treated with anti-interleukines 17: Ixekizumab and Secukinumab.

KEY WORDS: psoriasis, erythrodermic psoriasis, treatment, anti IL-17

INTRODUCTION

Erythrodermic psoriasis (EP) is a very rare but extremely severe subtype of chronic plaque psoriasis, affecting 1.00-2.25% of patients with psoriasis (1). Its pathogenesis still remains unknown, and current therapeutic strategies frequently end in failure. In this condition, the skin becomes diffusely red, tending to purple, shiny, with marked desquamation and exudation. Erythema and edema are widespread, covering more than 90% of the body surface and can lead to high risk of multi-organ failure and death (2) due to fluid and protein loss.

Predominance of the Th2 immune response and dysregulation of angiogenesis have been proposed to be implicated in the pathogenesis of EP, although this has not yet been fully elucidated (3).

Nevertheless, Th17 has been shown to be the second-most predominant T-cell type after Th2 in EP lesions (4,5).

Elevated mRNA expression of several pro-inflammatory cytokines was observed, among which IL-17A was present in all the clinical subtypes, with the highest expression in chronic plaque psoriasis and in severe clinical manifestations, like EP (6).

Treatment of EP is a challenge for clinicians because international guidelines are lacking.

The efficacy of biologic drugs in EP treatment has been demonstrated, but only sporadically as case reports or small case series, because erythroderma, as a severe condition, is often listed as an exclusion criterion in clinical trials (2).

Tumor necrosis factor-inhibitors have been shown to have excellent efficacy in achieving improvement (3).

A growing body of evidence supports the safety and efficacy of biologics in rapidly achieving

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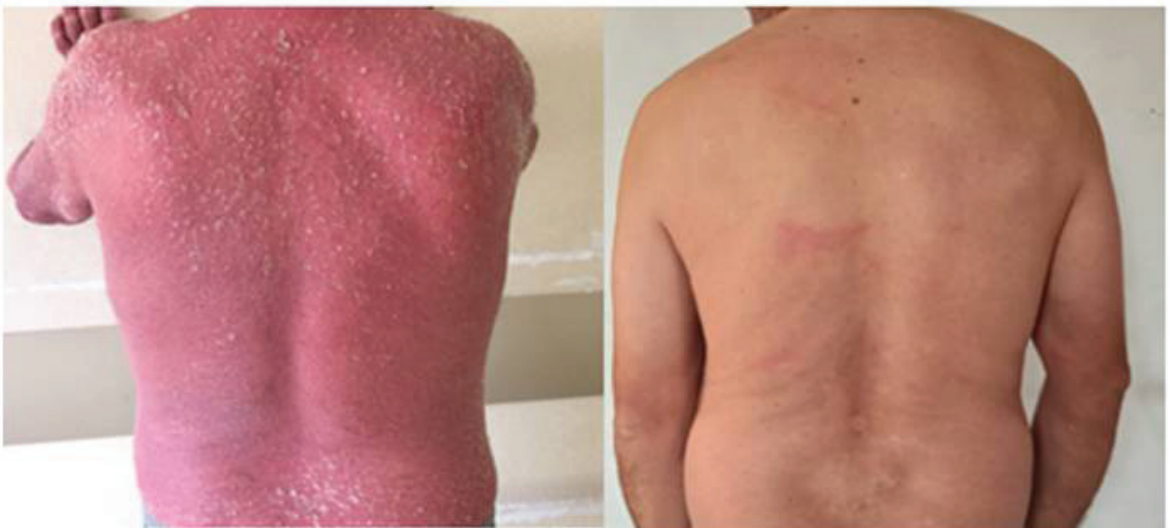

Figure 1. Shoulder and back detail, before and after therapy.

near-total clearance of EP, particularly within the IL-17 class. Secukinumab, ixekizumab, and brodalumab achieve almost complete clearance of EP symptoms after 8 to 12 weeks of treatment (3,4).

Herein we report a series of 5 cases of EP successfully treated with ixekizumab and secukinumab.

CASE 1

A 52-year-old man with a long history of severe plaque psoriasis, hypertension, and dyslipidemia was admitted for a severe, generalized erythematous rash. On first clinical examination, exfoliative erythroderma with confluent, erythematous, scaling rash from head to toe was found (PASI 42). Mucosal involvement and Nikolsky sign were absent.

Conventional treatment based on intravenous fluids, empiric antibiotics, topical steroids, and emollient moisturizer were started, but with poor clinical benefit.

As the screening for biologic therapy was negative, treatment with secukinumab was introduced, with significant improvement observed after twelve weeks (PASI 22).

At present, the patient has been undergoing monthly secukinumab treatment and has maintained a reduced PASI score (PASI 6) for 52-weeks of follow-up. No relapse as well as no significant adverse events have been observed throughout the course of treatment (Figure 1).

CASE 2

A 30-year-old man affected by recalcitrant plaque psoriasis for 10 years was admitted to our Dermatology department with PASI 30. Screening was carried out in order to start therapy with anti IL12 / 23, that quickly resulted in significant clinical improvement: PASI 0 reached after 6 months.

After one year of therapy, the patient arbitrarily decided to interrupt the treatment and the follow-up, due to clearance of psoriasis. However, he was hospitalized for the onset of psoriatic erythroderma associated with axillary lymphadenopathy (PASI 47).

Infectious disease screening was re-performed and therapy with an anti-IL-17A drug (ixekizumab) was started, with a significant improvement both in the clinical condition (PASI 5) as well as in quality of life.

Unfortunately, the improvement was followed by exacerbation of psoriasis associated with herpes zoster infection in the lumbar region, which was promptly treated with acyclovir 800 mg 5 times a day for 7 days.

Blood tests were performed again. Due to the finding of HIV positivity, therapy with ixekizumab was discontinued and HAART therapy was started.

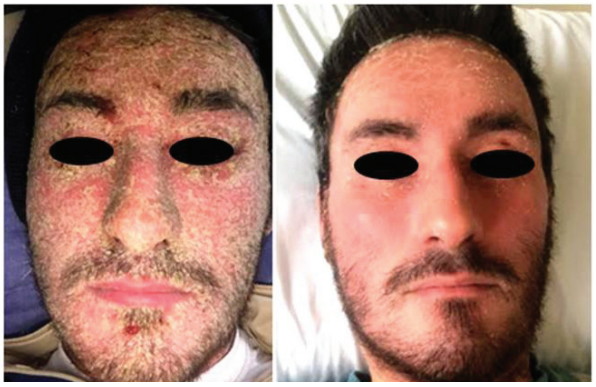

Figure 2. Face detail, before and after therapy.

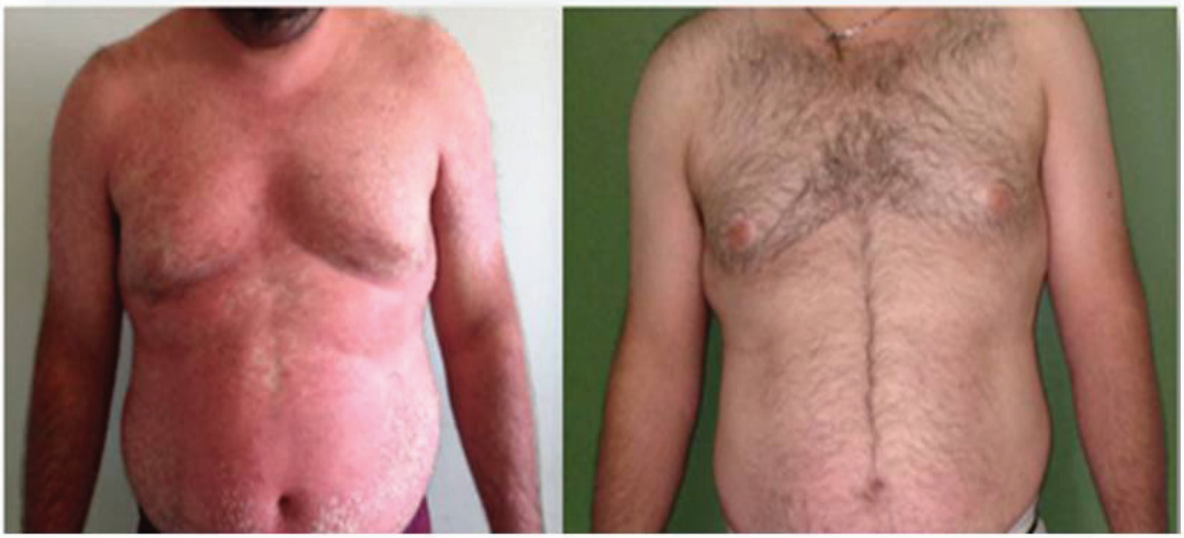

Figure 3. Trunk detail, before and after therapy.

After 6 months, given the stability of the viral load and CD4 levels, therapy with ixekizumab was resumed, with monthly control of the CD4 count and viral load.

The patient rapidly achieved a significant improvement in skin lesions. After 48-weeks of therapy, the patient is in good clinical condition with overall stable CD4 levels, maintaining a stable PASI (Figure 2).

CASE 3

A 26-year-old man, suffering from a mild form of cutaneous psoriasis, reported sudden worsening of his erythrodermic status (PASI 32) that was preceded by intense emotional stress. The patient was screened for biologic therapies, and meanwhile systemic therapy with prednisone 25 mg/day was initiated in combination with topical steroids.

Since the screening results were within the reference values, treatment with ixekizumab was started.

Clinical examination after 4 weeks found a notable improvement (PASI 12) with the resolution of erythroderma.

The patient is currently continuing the ixekizumab therapy with no adverse events and with steady improvement of skin appearance (PASI 6 at week 12) (Figure 3).

CASE 4

A 37-year-old man with a 1-year history of moderate-to-severe plaque psoriasis was referred to our department for a flare-up of a skin lesion (PASI 39), joint tenderness, and swelling on both hips and both thumbs.

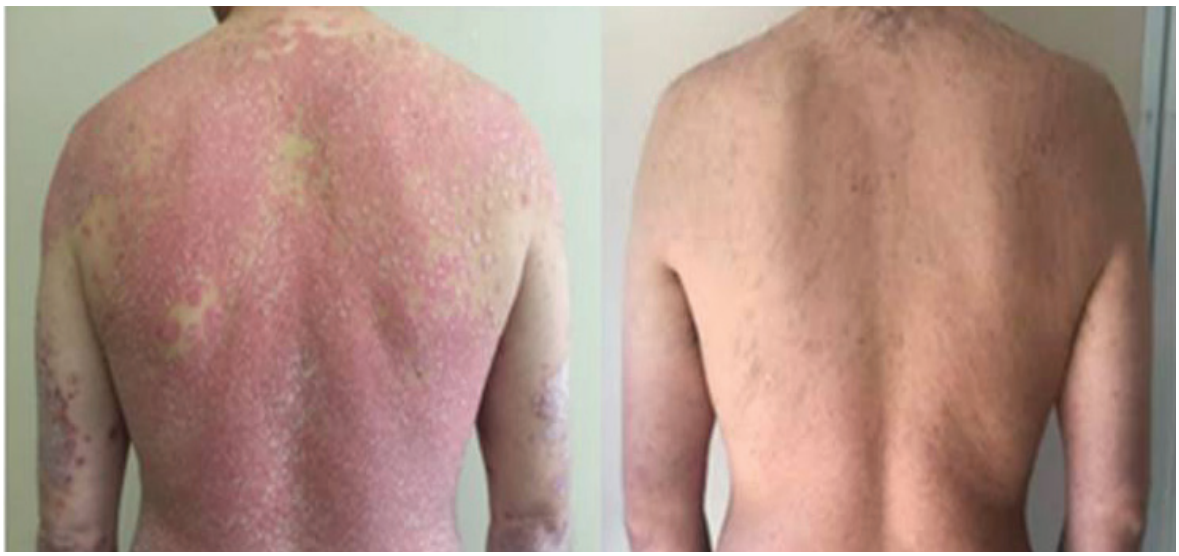

Figure 4. Shoulders and trunk detail, before and after therapy.

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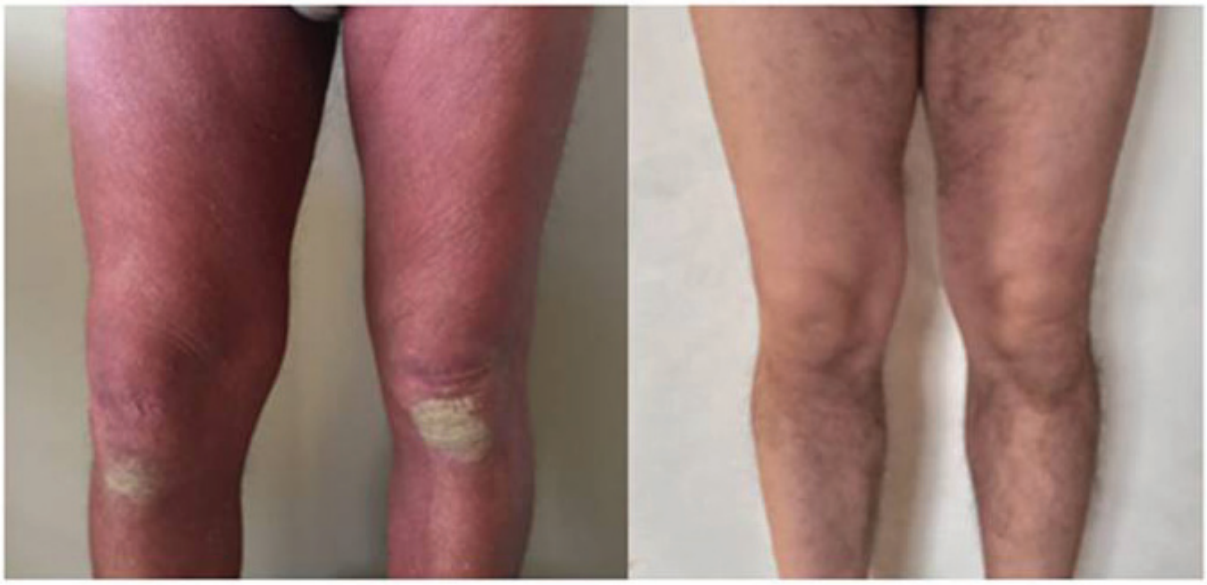

Figure 5. Legs detail, before and after therapy.

He was diagnosed with EP and psoriatic arthritis, with poor clinical response to previous treatment.

The patient was administered ixekizumab subcutaneously. Fast improvement was observed: just 4-weeks after the first dose, the PASI score decreased to 18.

Constant improvements were observed thereafter: the patient's PASI scores were 12 and 4 after the second and third injections, respectively. Itching, burning sensations, and joint symptoms decreased.

After 12 months of follow-up, both the patient's PASI score and quality of life continue to improve, so much so that he decided to get a tattoo. No significant adverse events have been observed (Figure 4).

CASE 5

A 54-year-old man presented with a major complaint of deteriorating symptoms of psoriasis as the first manifestation of the disease. His medical and surgical histories were unremarkable.

Physical examination revealed erythrodermic skin on approximately 90% of the whole body. A punch biopsy was performed, which confirmed EP.

Combination treatment with prednisone and acitretin was consequently administered. Within 5 days, PASI decreased from 32 to 28.

Blood tests were performed, and therapy with etanercept 50 mg/day was stared, with only partial benefit. After 12-weeks of therapy, the patient complained of a worsening of palmar squamous symptoms. Thus, etanercepet was interrupted and secukinumab 300 mg monthly was started after the induction period.

Already after 5-weeks of the induction period, the erythrodermic status was resolved with the continuous therapeutic benefit (PASI 4) devoid of any kind of side effect (Figure 5).

DISCUSSION

EP is a rare subtype of psoriasis characterized by generalized erythema of the entire body with scaling. Its mortality risk has been recently reported with rates of 15% and 9% (7,8).

The management of EP is difficult and has not been well-standardized.

Theoretically, the role of IL-17 and its interaction with other cytokines in severe cases of psoriasis is well-known, and it could explain the efficacy in the use of anti-IL17 in EP treatment (9).

There are little data available in the literature regarding anti IL-17 treatment of EP, because the drug is relatively new and there is a lack of support from drug trials as EP represent the exclusion criterion for these trials.

We report these real-life experiences in order to highlight the role of ixekizumab and secukinumab in EP management, in particular their rapid efficacy, maintenance over time, and absence of adverse effects.

CONCLUSION

The arrival of biologic drugs has marked a revolution in the management of moderate to severe psoriasis and its comorbidities, allowing a personalized therapeutic approach. However, registration studies do not report data on the treatment of erithrodermic form,

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as EP itself is the exclusion criterion for this studies. Hence, a collection of more real-life data is necessary to strengthen the clinical experience in terms of speed of action, efficacy, safety and maintenance of clinical results in absence of adverse events, to possibly draft guidelines in the future.

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