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Rapid Clearance of Erythrodermic Psoriasis with Acitretin in an Unstable Case of Psoriasis under Treatment with Secukinumab

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Abstract

Erythrodermic Psoriasis (EP) is a rare, severe and disabling form of psoriasis in children and adults. Clinical characteristics of this subtype of psoriasis include a diffuse erythema involving at least 75% of the body surface area, oedema, itch, scaling, hair loss, onychodystrophy, palmoplantar keratoderma and furthermore systemic findings. The triggers of erythrodermic psoriasis are an abrupt extraction of anti-psoriatic drugs such as methotrexate and topical steroids, systemic illness (e.g. HIV, infections), ultraviolet burns, drug reaction, abuse of alcohol, and emotional stress. Erythrodermic psoriasis may occur in association with life-threatening complications such as superinfections and sepsis from skin pathogens such as Staphylococcus aureus and Streptococcus species, hypovolemic shock and acute kidney injury secondary to skin fluid loss, severe anemia, acute respiratory distress syndrome, hydroelectrolytic abnormalities and protein loss. Despite the plethora of treatment options for plaque psoriasis the management of erythrodermic psoriasis remains a challenge. Here we report a case of complete and rapid resolution of erythrodermic psoriasis with acitretin, demonstrating its efficacy for controlling the occurrence of erythrodermic flares, in a patient with moderate-to-severe plaque psoriasis effectively treated with secukinumab until then. Even today, in the era of biological agents, acitretin still remain a valuable treatment option for resistant and difficult to treat erythrodermic psoriasis.

Abbreviations

EP: Erythrodermic Psoriasis; PASI: Psoriasis Area Severity Index; BSA: Body Surface Area; DLQI: Dermatology Life Quality Index; NAPSI: Nail Psoriasis Severity Index

Introduction

Erythrodermic Psoriasis (EP) is a rare, severe and disabling form of psoriasis in children and adults with an estimated prevalence among psoriatic patients ranging from 1%-2.25% [1]. This subtype of psoriasis presents with distinct clinical characteristics, which include a diffuse erythema involving at least 75% of the body surface area. Other authors argue that there must be affected at least 90% of the body surface area [2-4]. EP can manifest with oedema, itch, scaling, hair loss, onychodystrophy, palmoplantar keratoderma and furthermore systemic findings [1,4,5]. The pathogenesis of EP is not well understood; although, numerous studies advocate that the disease is associated with a predominantly T helper 2 (Th2) phenotype [6,7]. The triggers of erythrodermic psoriasis are an abrupt extraction of anti-psoriatic drugs such as methotrexate and topical steroids, systemic illness (e.g. HIV, infections), ultraviolet burns, drug reaction, abuse of alcohol, and emotional stress [1,2]. EP may occur in association with life-threatening complications such as superinfections and sepsis from skin pathogens such as Staphylococcus aureus and Streptococcus species, hypovolemic shock and acute kidney injury secondary to skin fluid loss, severe anemia, acute respiratory distress syndrome, hydroelectrolytic abnormalities and protein loss [2,3,5,8]. The management of this condition is based on the use of anti-inflammatory, immunosuppressive and biologic agents following the supportive care [3].

Acitretin is a second-generation retinoid used in the treatment of severe resistant psoriasis. Experts support the use of acitretin as a first-line therapy in stable cases of erythrodermic psoriasis, although it typically works slowly [4]. We report a case of complete and rapid resolution of EP with acitretin, demonstrating its efficacy for controlling the occurrence of erythrodermic flares, in a patient with moderate-to-severe plaque psoriasis effectively treated with secukinumab until then (PASI 100).

Case report

A 34-year-old man with generalized erythema and extensive scaling presented to our dermatology department. The patient had a 20-year history of moderate-to-severe plaque psoriasis vulgaris (baseline PASI score 29.0), without concomitant arthritis, and was successfully treated with secukinumab in the last year (PASI score 0). He did not have any other new drug exposures and did not use topical medications other than moisturizers, in the last 3 months

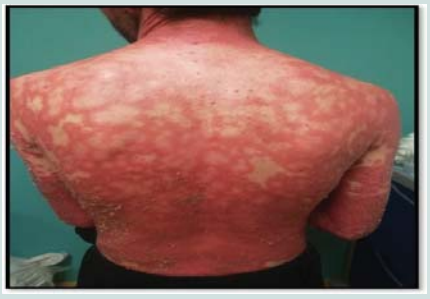

Figure 1: Erythroderma affecting the whole body. Generalized erythema and extensive scaling, before treatment with acitretin.

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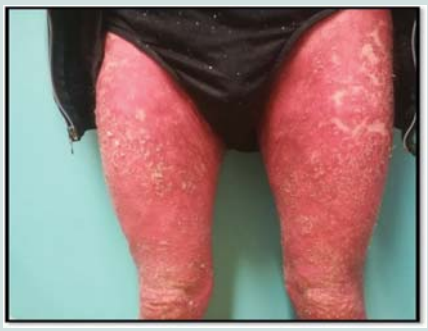

Figure 2: Erythroderma affecting the whole body. Generalized erythema and extensive scaling, before treatment with acitretin.

Figure 3: Extensive erythema and psoriatic nail disorders (onycholysis) on the fingernails.

before and during the episode. Upon evaluation, he was tachycardic and febrile (38 ºC). On physical examination, the involved Body Surface Area (BSA) was approximately 90% with a Psoriasis Area and Severity Index (PASI) score of 40.7 accompanied by psoriatic nail disorders especially onycholysis on his finger and toenails (NAPSI score 30.0) (Figure 1-3). Mucosal involvement and Nikolsky sign were absent. This condition had an important impact on his quality of life (DLQI score was 20.0). Cardiovascular, respiratory, neurological, lymphatic and musculoskeletal investigations were normal. Our clinical differential diagnosis included drug-induced erythroderma, erythrodermic psoriasis and cutaneous T-cell lymphoma; less likely was any other cause of erythroderma. There was no evidence of atopic dermatitis from the history and clinical examination. Laboratory evaluation was significant for leukocytosis (12,850/μL) with neutrophilia (9,690/μL), elevated C-reactive protein (8.3 mg/dL) and erythrocyte sedimentation rate (25 mm/h). Eosinophils (1.4%), serum calcium (6.9 mg/dL) and total serum IgE levels (15 UI/ml) were normal. Urine culture revealed a clear finding of urinary tract infection with Pseudomonas aeruginosa. The initial management of our patient's conditions included a discontinuation of secukinumab, fluid resuscitation and antibiotic treatment for the urinary tract infection. Punch biopsy demonstrated acanthosis, mild spongiosis and hyperkeratosis. Perivascular infiltrates in the derma consisted of lymphocytes, macrophages and fibroblasts. Clinical, laboratory, and histological findings were suggestive of the diagnosis erythrodermic psoriasis. Administration of systematic treatment with acitretin 25 mg per day was decided. At 2 weeks, a clinical improvement was observed. Erythema, scaling and itching showed an excellent and rapid response, significantly reducing the mean PASI score from baseline to 16.1. Within 5 weeks of acitretin therapy, complete clearance of all the skin was achieved (Figure 4 and 5), with a PASI score of 0 (PASI 100). In addition, an important amelioration on his impact quality of life (DLQI score: 2.0) was notable. Nail dystrophy and onycholysis delayed recovery and fully recovered 12 weeks after the start of acitretin (Figure 6). The patient remains clear of psoriasis lesions with ongoing acitretin therapy after 16 weeks, with a tapering of acitretin while transitioning to the precedent biologic agent.

Discussion

Erythrodermic psoriasis is a dermatologic emergency, may be associated with serious morbidity and mortality [1,9]. Unfortunately, the management of EP is difficult due to limited available data leading to the choice of appropriate treatment. The initial approach to the management of EP should include fluid, nutritional and electrolyte replacement; impaired thermoregulation; keep the skin moisture with wet dressings, oatmeal baths, emollients and low-potency topical steroids; treatment of secondary infections [10]. It is important to mention that the decision about the optimal treatment regimen is difficult and should be dictated by complete evaluation of the severity of disease and each individual patient's underlying comorbidities.

According to a consensus guideline of the National Psoriasis Foundation Medical Board, regarding the appropriate management of EP, conventional systemic therapies, such as cyclosporine, methotrexate, and acitretin, were used as first-line therapy in unstable cases (cyclosporine) and in more stable cases (methotrexate/

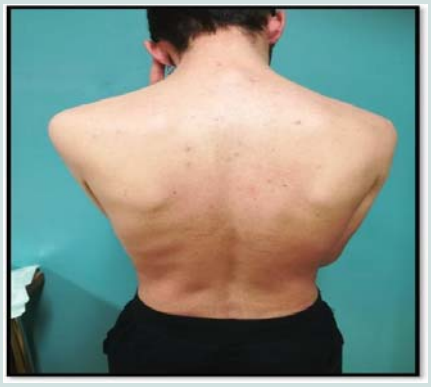

Figure 4: Clearance of erythrodermic psoriasis 5 weeks after onset of treatment with acitretin 25 mg/d.

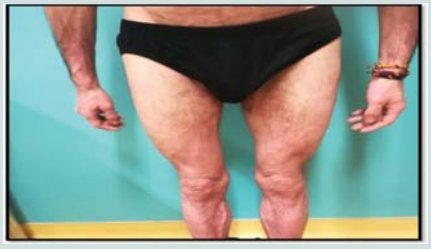

Figure 5: Clearance of erythrodermic psoriasis 5 weeks after onset of treatment with acitretin 25 mg/d.

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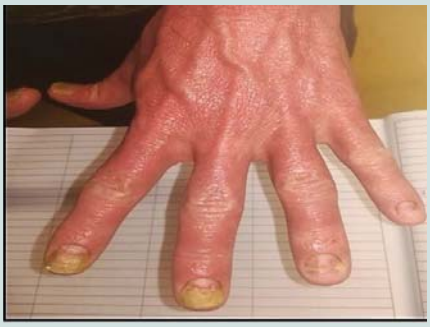

Figure 6: Complete clearance of skin psoriasis but delayed recovery of nail dystrophy and onycholysis 5 weeks after onset of acitretin 25 mg/d.

acitretin) [10-12]. A meta-analysis of 12 patients receiving 25-35 mg/day of acitretin proves the efficacy of this systemic agent in EP. In 83.3% of the cases achieved an important improvement of EP [13]. Mycophenolate mofetil is another immune suppressant that was used successfully in two patients with severe EP [14].

The TNF-α inhibitors agents reviewed in EP, with satisfactory results, include etanercept, adalimumab, infliximab, and golimumab [10,15,16]. According to a multicentre national retrospective study of 28 patients, in the French Psoriasis Group network, representing 42 flares of erythrodermic psoriasis used successfully anti-TNFa alongside ustekinumab (anti-IL12/23) and efalizumab (Mab IgG1) [16]. Review of the literature suggests that infliximab and ustekinumab may be decided on as first-line therapy, as a result of the rapidity of clearance and the excellent safety profile [3,17]. Ixekizumab, an anti-IL-17A monoclonal antibody, confirmed a high level of efficiency in management of EP in accordance with an open-label study in a small number of patients in Japan [18]. Another anti-IL-17 agent, secukinumab may therefore also be an effective and safe option in the treatment of this severe disease [19,20]. A case series and a case report have been published regarding the use of alefacept and panitumumab (anti-EGFR antibody) in EP, respectively. Both, exhibited significant therapeutic effects on skin symptoms in the erythrodermic psoriasis patients [21,22].

Conclusion

Erythrodermic psoriasis is a severe variant of psoriasis and the choice of appropriate treatment remains a challenge. Over the years, biologic agents have revolutionized the management of erythrodermic psoriasis, giving us alternative therapeutic options. On the other hand, however, traditional systemic therapies, with their oral route of administration and low cost, form an important ally in the treatment of this rare and potentially lethal form of psoriasis. Even today, in the era of biological agents, acitretin still remain a valuable treatment option for resistant and difficult to treat erythrodermic psoriasis.

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