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Rapid clearance of erythrodermic psoriasis with apremilast

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Abstract

Background: Apremilast is a new immunomodulatory drug, a small molecule inhibitor of PDE4, which down-regulates the expression of multiple pro-inflammatory cytokines, such as tumor necrosis factor alpha, interleukin 17, interleukin 23.

Main observations: We describe a case of a 54-year-old man with erythroderma in the course of psoriasis (PASI=49), with contraindications to other psoriasis therapies, in whom total clearance of skin lesions was achieved by day 20 after therapy with apremilast at a dose of 30 mg bid (ΔPASI = 100). The patient had a history of prior use of cyclosporine, methotrexate and adalimumab. His comorbidities included obesity, fatty liver and hypercholesterolemia.

Conclusion: In this case of erythroderma in the course of psoriasis apremilast led to total clearance of all cutaneous lesions. (*J Dermatol Case Rep*. 2017; 11(2): 29-31)

Introduction

Apremilast, a phosphodiesterase-4 selective inhibitor, is approved for the oral treatment of medium to severe plaque psoriasis. At week 16, 31,3% of the patients achieve 75% reduction from baseline PASI score.[1,2]

Discontinuation of psoriasis treatment and several triggers such as infections may lead to erythrodermic psoriasis which consists a serious and possible fatal form of psoriasis.[3] We report a case of a patient with psoriasis who developed severe to nearly erythrodermic form due to discontinuation of adalimumab and septicemia, who achieved total and rapid clearance by day 20 with the use of Apremilast, as monotherapy.

There is only one case report in the literature where apremilast showed fast response in erythrodermic psoriasis but was early discontinued due to cardiologic issues.[4]

Case report

A 54-year-old male obese patient, smoker, with a 25 year history of psoriasis, with comorbidities such as hypercholesterolemia and fatty liver presented with severe psoriasis (PASI 49) and fever lasting for 2 weeks (Fig. 1).

Previous treatments for his psoriasis included cyclosporine, methotrexate and adalimumab. Two months before his admission to the hospital and while on adalimumab, he started anti-Tuberculosis chemoprophylaxis with rifampicin and isoniazid, due to a positive Mantoux test (*0.8 cm*). The last 2 weeks, he became feverish (37,8°C), adalimumab was discontinued leading to exacerbation of his psoriasis and was admitted to the hospital for further investigations. He developed generalized plaque psoriasis and was nearly erythrodermic with severe scaling, PASI 49. Other agents such as immunosuppresants and immunomodulators as well as acitretin were contraindicated due to his medical history.

Apremilast was administered and showed great response rate with rapid clearance (absolute PASI:0, ΔPASI 100) by day 20 (Fig. 2). He preserved this score with slight fluctuation at week 12, (PASI:4,8). Further clinical deterioration (PASI:16,8) was noticed the following months (3rd to 6th) while his ΔPASI was still greater than 50. Due to absolute PASI score deterioration, patient was switched to a biologic agent.

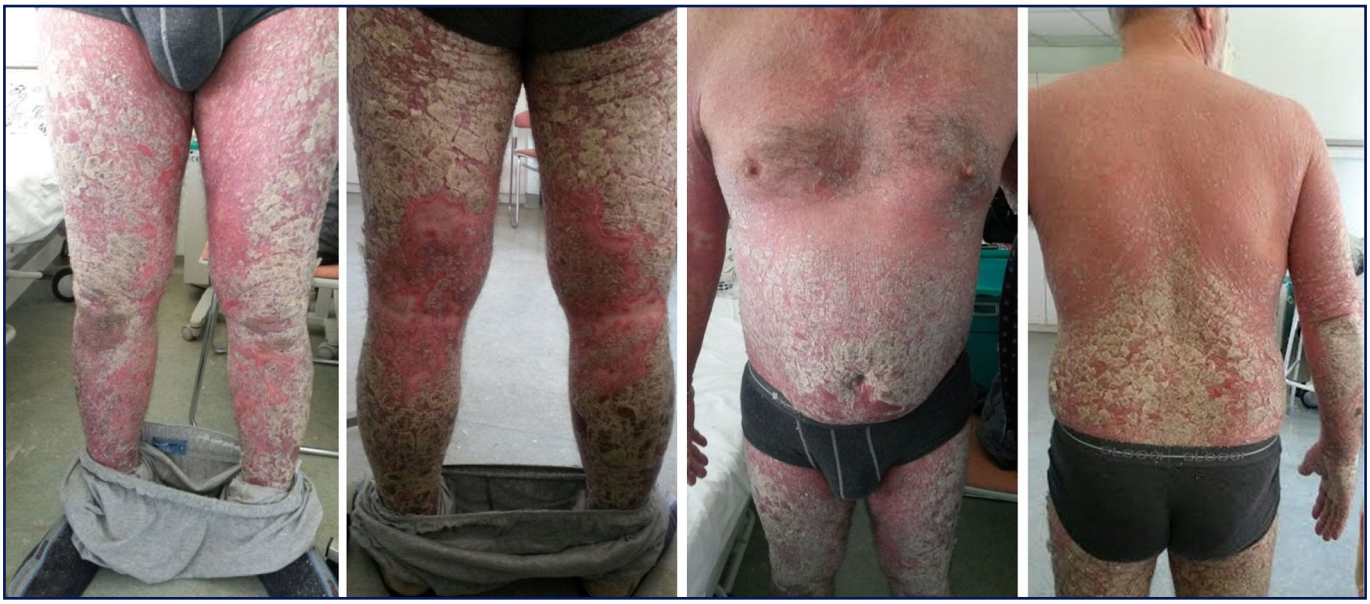

Figure 1
Patient at the time of admission to the hospital.

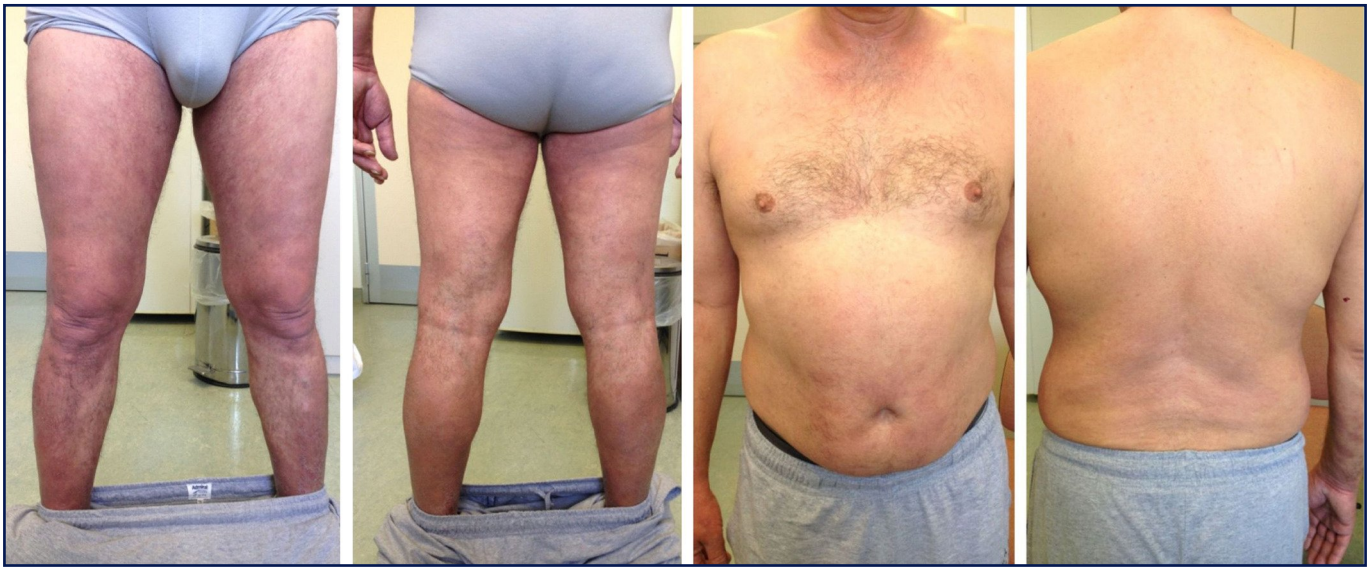

Figure 2
Patient at day 20 with the use of apremilast in monotherapy.

Discussion

Treatment discontinuation of plaque psoriasis or infections are acting as triggering factors for Erythrodermic Psoriasis. This is a rare, serious and possibly fatal form of psoriasis and treatment with classical systemic or biologic agents is based on small case series and reports.[5,6]

Apremilast downregulates the production of pro-inflammatory cytokines, while upregulating anti-inflammatory cytokines. More specifically c-AMP, which acts intracellularly as a secondary messenger following immune cells stimulation, controls immunological homeostasis with an effect on increasing pro-inflammatory cytokines, especially TNF-a, IFN-γ, IL-6, IL-22, IL-23 and IL-17. Apremilast degrades c-AMP to AMP and therefore alters the immune response of the activated immune cell.[7] In our patient, discontinuation of the anti-TNFa agent used for his psoriasis as well as his febrile state acted as triggers for activation of immune cells and overexpression of pro-inflammatory cytokines. We speculate that his psoriasis initially cleared very rapidly, probably because apremilast controlled the immunological homeostasis which led to ΔPASI 100. However the production of cytokine IL-17

(implicated in psoriasis' mechanisms), might escape regulating control and lead to skin psoriasis deterioration.[7,8] According to this assumption the patient was switched to anti-IL-17 agent, which controlled the disease.

Conclusion

We report the case of a patient with severe plaque psoriasis deterioration (due to septicemia and treatment discontinuation) to nearly the rare erythrodermic form, where apremilast showed total clearance by day 20 and sustained this result for the first two months. Gradual deterioration over a period of 4 months (PASI: 16,8 at 6th month) led to change of treatment to a biologic agent. However his ΔPASI from baseline was still considerably greater than 50.

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