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Apremilast monotherapy for palmoplantar pustulosis: Report of three cases

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Abstract

Palmoplantar pustulosis or palmoplantar pustular psoriasis is chronic skin conditions, characterised by eruptions of sterile pustules on an erythematosquamous background. High-quality data on the treatment of palmoplantar pustulosis are limited, and none is accepted as being effective in general. Apremilast is a small molecule inhibitor of phosphodiesterase 4 approved for the treatment of plaque psoriasis and psoriatic arthritis. We report three cases of palmoplantar pustulosis treated with apremilast monotherapy. Our three cases, as well as previous reports, demonstrate the potential for apremilast to be beneficial for a subset of patients with palmoplantar pustulosis or palmoplantar pustular psoriasis.

Keywords

Psoriasis, therapy, apremilast

Introduction

Palmoplantar pustulosis (PPP) or palmoplantar pustular psoriasis (PPPP) affects the palms and/or the soles and is characterised by eruptions of sterile pustules on an erythematosquamous background.[1] Whether PPP and PPPP are two entities or different presentations of the same disease is still a matter of debate. Treating PPP can be challenging and patients often fail multiple therapies. Apremilast is a systemic agent that inhibits phosphodiesterase 4 and is approved for the treatment of plaque psoriasis and psoriatic arthritis.[1] We report three cases of PPP treated with apremilast monotherapy.

Case report

Patient 1 was a 51-year-old woman who presented with numerous small pustules on her palms and feet on and erythematous background (Figure 1). Biopsy was performed, and histopathology was compatible with PPP – subcorneal pustular dermatitis with large subcorneal neutrophilic pustule and mostly superficial mixed-cell (mostly neutrophilic) infiltrate in the dermis. Complete response was observed after 1 month of apremilast 30 mg bid and is still ongoing after 2 years. No adverse effects were reported.

Patient 2 was a 70-year-old woman with more than 20-year history of PPP (Figure 2 left). After apremilast 30 mg bid was introduced, complete response was observed after 3 months and is still ongoing after year and a half. Sometimes, she experiences scaling of her feet. No adverse effects were reported.

Patient 3 was a 58-year-old man with a history of plaque type psoriasis and psoriatic arthritis (Figure 2 right). He received multiple treatments such as topical corticosteroids (TCS), methotrexate, ustekinumab and adalimumab. When receiving adalimumab, arthritis was in remission; however, plaque on his left palm persisted. He was then lost to follow-up for 3 years. Later, he presented with erythema, scaling and numerous pustules on his left palm and third and forth finger of his right hand. Apremilast 30 mg bid was introduced, and partial response was observed after 3 months. After 9 months, new pustules were observed and arthritis got worse; therefore, treatment with apremilast was stopped. No adverse effects were reported. Selected patient characteristics are presented in Table 1.

Discussion

Palmoplantar subtypes of psoriasis, both pustular and nonpustular, are associated with more impaired quality of life than are other types of psoriasis.[2] There are growing treatment options for plaque psoriasis; however, many different treatments have been used for PPP and none is accepted as being effective in general. High-quality data on the treatment of PPP are limited. Improved understanding of the PPP pathogenesis has led to advances in treatment options, and targeted therapies for PPP have been evaluated or are under

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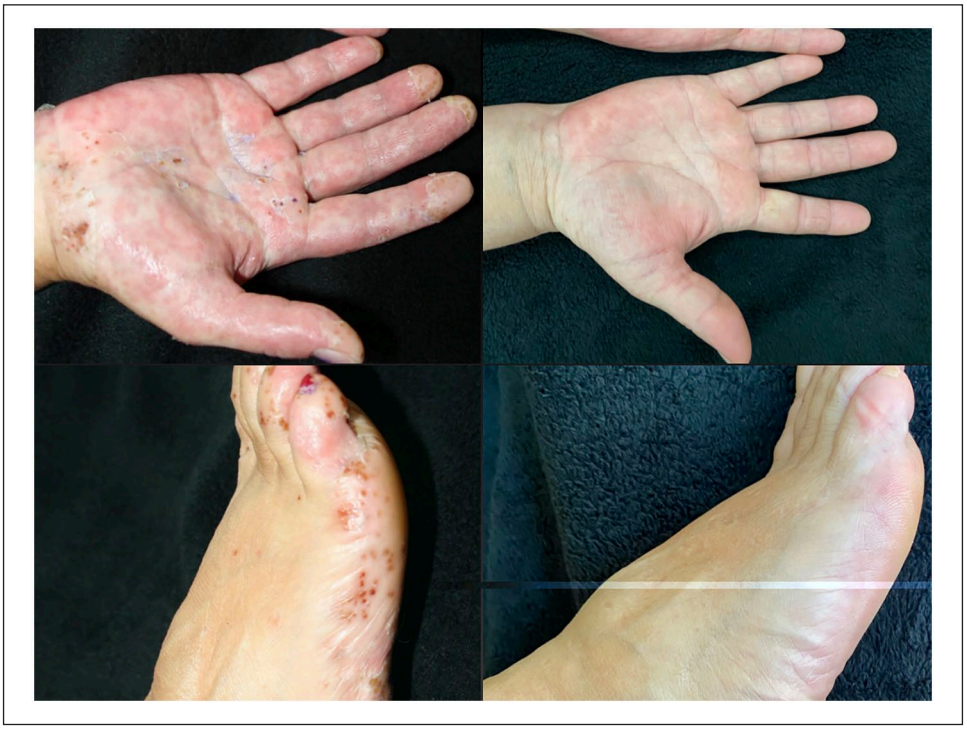

Figure 1. Hands and foot of a first case 10 days after treatment with topical corticosteroids and acitretin (left) and hands and foot of a first case 2 years after apremilast therapy (right).

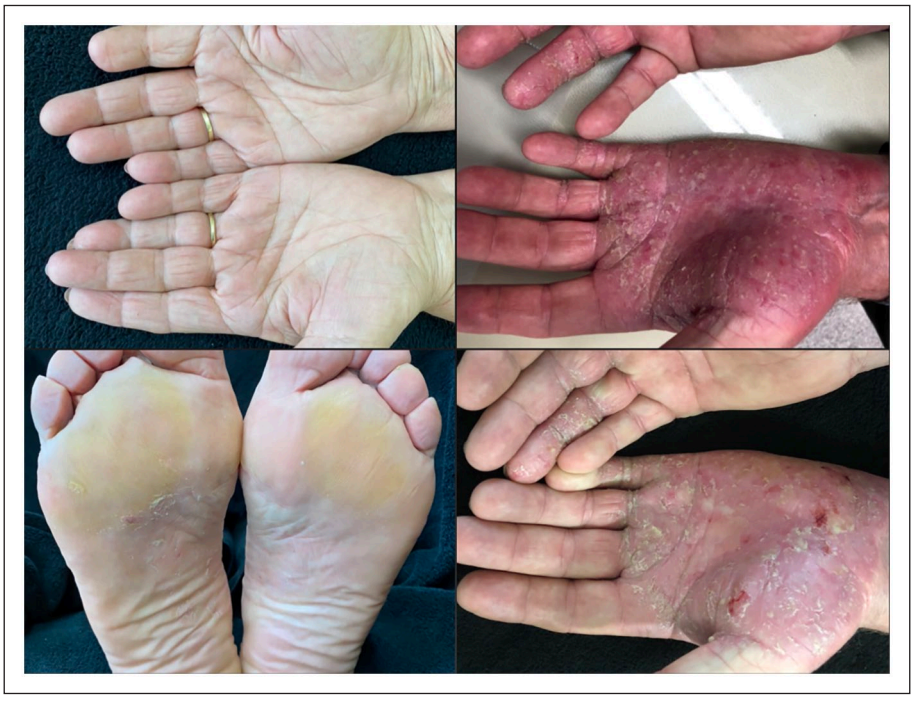

Figure 2. Hands and feet of a second patient 1.5 year after apremilast therapy (left) and hands of a third case before apremilast therapy (upper right) and 3 months after apremilast therapy (lower right).

evaluation against more than 12 molecules in ongoing clinical trials. Targets include CXCR2 (interleukin (IL)-8 receptor type B), granulocyte colony-stimulating factor receptor, IL-1 receptor, IL-8, IL-12, IL-23, IL-17A, IL-17 receptor, IL-36 receptor, phosphodiesterase-4 and tumour necrosis factor-α.[2]

Table 1. Selected patient characteristics.

Age, gender	Smoker	Psoriasis family history	Other psoriasis types	Previous therapy	Co-morbidities	BMI	Apremilast response	Apremilast duration
51 years, F	Y	Positive	N	TCS, acitretin	None	32.8	Clear	2 years (ongoing)
70 years, F	Past	Negative	N	TCS, MTX, acitretin	None	30.8	Almost clear	1.5 year (ongoing)
58 years, M	Past	Negative	Y	TCS, MTX, UST, ADA	CAD, PsA, DM, AH	24.7	Moderate	9 months (stopped)

F: female; M: male; Y: yes; N: no; TCS: topical corticosteroids; MTX: methotrexate; CAD: coronary artery disease; UST: ustekinumab; ADA: adalimumab; PsA: psoriatic arthritis; DM: diabetes mellitus; AH: arterial hypertension; BMI: body mass index.

A study by Bissonnette et al.[3] suggests apremilast may have a role in the treatment of moderate-to-severe palmoplantar psoriasis. There are very limited number of published cases regarding efficacy of apremilast for PPP or PPPP, and no clinical trial has been performed to date.[4–8] In a report by Eto et al.,[5] three patients with PPP achieved near complete symptom resolution after 2 weeks while followed for 8 months. In a series of eight patients diagnosed with PPP and treated with apremilast either as monotherapy or in combination with methotrexate or ustekinumab, safety and efficacy was demonstrated.[6] In a case series of six patients with severe or very severe treatment-refractory PPPP assessed by physician global assessment (PGA), at 3 months, four patients had mild PGA score and two were cleared from the disease.[8] Meta-analysis about interventions for chronic PPP included people with PPP or PPPP.[9] Regarding conventional systemic treatments, evidence is lacking for major treatments such as acitretin, methotrexate and cyclosporin. Concerning biologic therapy, secukinumab and guselkumab are probably superior to placebo in reducing severity.[9]

As limitations as concerned, we understand that this is a short case series, and biopsy was not performed for second and third patients. To better understand heterogeneity of PPP and PPPP, large-scale studies are needed to identify subgroups of patients with distinct mechanisms of diseases, and assessing responses to treatment in a standardised manner. Our three cases, as well as previous reports, demonstrate the potential for apremilast to be beneficial for a subset of patients with PPP or PPPP.

Declaration of conflicting interests

The author(s) declared the following potential conflicts of interest with respect to the research, authorship and/or publication of this article: M.M. served as a paid speaker and/or advisory board member for AbbVie, Celgene, Amgen, Janssen, Eli Lilly, L'Oreal and Novartis. The other author declares no conflicts of interest.

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