Pediatric psoriasis treated with apremilast

Rebecca L. Smith, MD
Fort Mill, South Carolina

Key words: apremilast; guttate pattern; health-related quality of life; plaque psoriasis.

INTRODUCTION

Psoriasis is a cutaneous, chronic inflammatory disorder that affects approximately 3.1% of US adults younger than 60 years[1] and up to 2.1% of children worldwide.[2,3] Chronic plaque psoriasis is generally the most common type of childhood psoriasis (accounting for 74% of cases in one study), followed by guttate psoriasis (9.7%-28.9%), which is often triggered by streptococcal infection.[4] Standardized guidelines for treating childhood psoriasis are lacking, and there are only limited evidence-based data and approved treatments. Case reports, therefore, can be an important source of guidance for clinicians.[3] This case report discusses encouraging outcomes obtained with apremilast in an adolescent patient.

Abbreviation used:

BSA: body surface area

CASE REPORT

A 14-year-old boy with severe psoriasis affecting the extremities, scalp, face, torso, and genitalia returned to the clinic after a 5-year absence. The patient had guttate psoriasis diagnosed originally at age 8, which quickly progressed to plaque psoriasis involving approximately 30% of the body surface area (BSA). Despite treatment with topical therapies and limited exposure to sunlight, he never obtained a clinically meaningful response. His parents were unwilling to have him undergo treatment with narrowband ultraviolet B therapy because of the inconvenience of the procedure, and they also refused the use of systemic agents such as cyclosporine and methotrexate because of their potential side effects. The patient was unable to tolerate etanercept injections. However, his psoriasis remained in relative remission during his absence, controlled only by sunlight.

At the time of his return to the clinic, the patient was estimated to have 40% BSA involvement, characterized by a widespread guttate pattern coalescing into plaques in various places and severe pruritus. His lesions were so pruritic that he often drew blood when scratching his lower legs. His family had begun homeschooling him several years earlier because he had become withdrawn and less socially confident, which they attributed to his skin disease. He was prescribed an antibiotic to control the streptococcal infection that presumably triggered the flare, along with midpotency triamcinolone 0.1% cream to minimize symptoms. One month later, his condition had worsened (now 50% BSA), and he was prescribed alternative topical corticosteroids at higher potencies, depending on lesion location. Systemic treatment options were again reviewed with his family.

At his next visit 1.5 months later, his condition had improved (approximately 25% BSA), aided by greater sunlight exposure during the summer months (Fig 1). His compliance with topical therapy may have been suboptimal, as he generally resisted applying any topical agents, including moisturizers. Apremilast was selected as systemic therapy and was prescribed at the adult dose of 30 mg twice daily, based on the patient's height and weight (182.9 cm [72 inches] and 98.9 kg [218 pounds], respectively). The recommended titration schedule for apremilast was followed, and all other therapies were discontinued by patient choice.

Clinically significant improvement was observed after 1 month of apremilast therapy (Fig 2). During the apremilast therapy, the patient was exposed only to normal ambient sunlight and did not receive any increased exposure. Although BSA was basically unchanged, the plaques were thinner, less scaly,

Fort Mill Dermatology, LLC.
Funding source: Celgene Corporation, Summit, NJ.
Conflicts of interest: Speaker and advisory board member for Celgene; speaker for Amgen, Bayer, Janssen, Promius, Aqua, Galderma, and Valeant.
Correspondence to: Rebecca L. Smith, MD, 1700 1st Baxter Crossing, Fort Mill, SC 29708. E-mail: info@fortmillderm.com.

JAAD Case Reports 2016;2:89-91.
2352-5126

http://dx.doi.org/10.1016/j.jdcr.2015.12.005

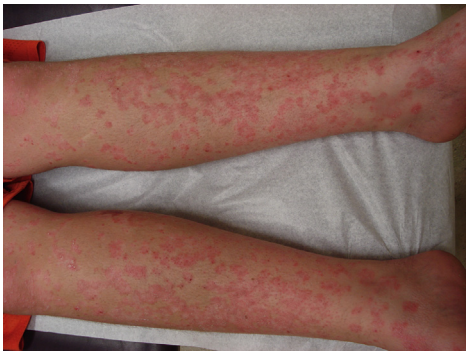

Fig 1. Severely pruritic plaque psoriasis on lower extremities before apremilast treatment.

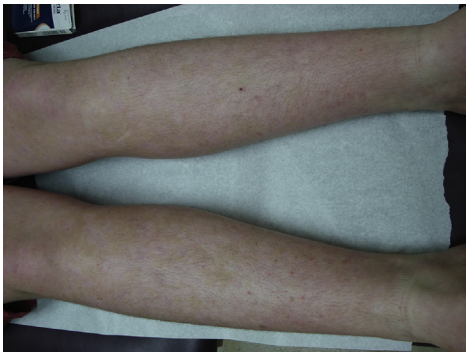

Fig 3. Plaques on lower extremities are beginning to clear after 2 months of apremilast treatment.

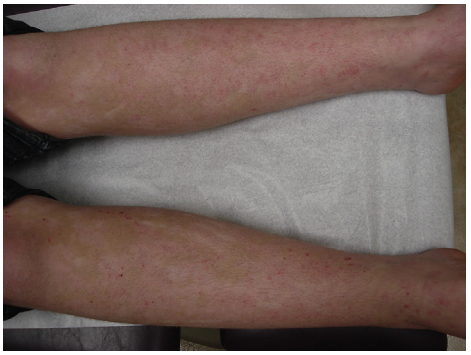

Fig 2. Significant clinical improvement after 1 month of apremilast treatment. Plaques are thinner, less scaly, lighter in color, and less pruritic.

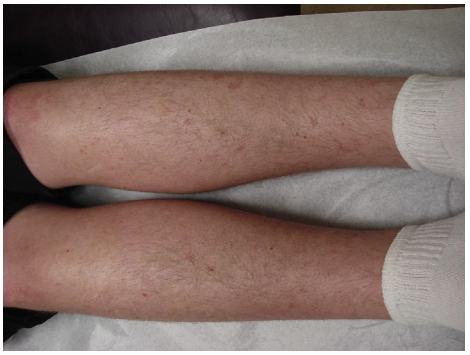

Fig 4. Hair regrowth and continued improvement after 6 months of apremilast treatment.

and less pruritic and were much lighter in color. As anticipated, the patient refused to apply moisturizers. By the second month of therapy, the plaques had further thinned (Fig 3), and the scalp was beginning to clear. His demeanor was significantly brighter than on previous visits.

During the third month of apremilast treatment, the patient contracted a streptococcal infection, which led to a temporary guttate flare. The infection was managed with oral antibiotics, which quickly resolved the flare while the patient maintained treatment with apremilast. After 6 months of apremilast therapy, the patient's mother was tearfully appreciative of the benefits her son had received from the treatment, in terms of both his skin condition and his psychological well-being. She remarked that she no longer needed to change his sheets every couple of days or vacuum the couch after her son had been sitting on it. His scalp hair and leg hair had resumed growing (Fig 4). The patient reported no gastrointestinal upset as long as he took apremilast with food. Since beginning apremilast over 9 months ago, he has grown an additional 5.1 cm (2 inches) and added 2.7 kg (6 pounds).

DISCUSSION

Apremilast is a small-molecule, oral phosphodiesterase-4 inhibitor that works intracellularly to regulate production of pro- and anti-inflammatory mediators.[5] It is approved for the treatment of adult patients with active psoriatic arthritis and for moderate to severe plaque psoriasis in patients who are candidates for phototherapy or systemic therapy. However, its safety and effectiveness have not been established in pediatric patients. A search of the published literature found no publications describing the use of apremilast in children or adolescents.

In the case described here, treatment with apremilast led to noticeable improvements in the patient's psoriasis and his quality of life, in contrast to topical therapies, which had been ineffective. The observed benefits were most likely a direct result of apremilast, as it was used in the absence of any concomitant medications or moisturizers. This young adolescent patient experienced no intolerable gastrointestinal symptoms despite receiving the adult dose of apremilast. He continues to be treated with apremilast with no plans to discontinue therapy. Although the family initially paid out of pocket for his medical care, the patient subsequently

acquired medical insurance and, after several appeals, coverage for his apremilast treatment.

In the management of psoriasis in children and adolescents, the psychological aspects of the condition should be considered. Psoriasis is a chronic and potentially disfiguring disease that can affect a patient's self-image. A study examining health-related quality of life in children with chronic skin diseases found that the greatest impact on health-related quality of life occurred with psoriasis and atopic dermatitis, and this impact ranked only slightly behind that of cerebral palsy, when compared with other chronic diseases.[6] An additional factor in the management of psoriasis is the importance of educating patients and their families on the need to adhere with treatment, toward the goal of controlling the disease and prolonging the period between flares.[7] Children and adolescents with moderate to severe psoriasis may be less receptive than adults to treatment with biological agents requiring injections. As illustrated by this case report, oral apremilast may be an effective, well-tolerated treatment option for adolescent patients with psoriasis; however, clinical trial data are necessary to fully understand the safety and efficacy of apremilast in these patients.

Editorial support was provided by Gary Cooper, PhD, of *p*-value communications, Cedar Knolls, NJ, and funded by Celgene Corporation, Summit, NJ.

REFERENCES

1. Helmick CG, Lee-Han H, Hirsch SC, Baird TL, Bartlett CL. Prevalence of psoriasis among adults in the U.S.: 2003-2006 and 2009-2010 National Health and Nutrition Examination Surveys. *Am J Prev Med*. 2014;47(1):37-45.
2. Parisi R, Symmons DP, Griffiths CE, Ashcroft DM. Global epidemiology of psoriasis: a systematic review of incidence and prevalence. *J Invest Dermatol*. 2013;133(2):377-385.
3. Fotiadou C, Lazaridou E, Ioannides D. Management of psoriasis in adolescence. *Adolesc Health Med Ther*. 2014;5:25-34.
4. Tollefson MM, Crowson CS, McEvoy MT, Maradit KH. Incidence of psoriasis in children: a population-based study. *J Am Acad Dermatol*. 2010;62(6):979-987.
5. Schafer P. Apremilast mechanism of action and application to psoriasis and psoriatic arthritis. *Biochem Pharmacol*. 2012; 83(12):1583-1590.
6. Beattie PE, Lewis-Jones MS. A comparative study of impairment of quality of life in children with skin disease and children with other chronic childhood diseases. *Br J Dermatol*. 2006;155(1):145-151.
7. Busch AL, Landau JM, Moody MN, Goldberg LH. Pediatric psoriasis. *Skin Therapy Lett*. 2012;17(1):5-7.