Case Report

Repigmentation of Tenacious Vitiligo on Apremilast

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1. Introduction

Vitiligo is a common pigment disorder characterized by acquired loss of function or absence of melanocytes, leading to distinct areas of depigmentation. Physical exam reveals sharply demarcated, depigmented macules or patches on otherwise normal skin. Vitiligo can present at any age, in any skin color. There is no specific serologic marker for diagnosis, but patients often have other autoimmune problems. Treatment options are limited and are difficult given the fact that the pathogenesis of the disease is not well elucidated. We present the case of a 52-year-old woman with vitiligo for over 2 decades. The patient’s medical history reveals a lack of response to many different approaches. This case highlights the ability of apremilast, an FDA-approved drug for the treatment of psoriasis and psoriatic arthritis, to achieve repigmentation in a case a vitiligo that has been extremely recalcitrant.

2. Case Report

A 52-year-old woman presented for a follow-up of chronic vitiligo. No other concomitant autoimmune diseases are known in this patient. She developed vitiligo in 1995 and has been seen in this clinic since 1998. She used topical tacrolimus, pimecrolimus, mometasone furoate cream, clobetasol propionate cream, topical psoralen combined with photochemotherapy with UVA, intramuscular triamcinolone acetonide, intramuscular alectacept, subcutaneous etanercept, oral cyclosporine, oral dapsone, and oral prednisone in the past. The patient stopped the use of medications for 5 years prior to re-presenting due to lack of success with repigmentation with the previously listed medications. Her attempt at multiple non-FDA-approved medications illustrates her frustration. At the first visit, the diagnosis of chronic vitiligo was readdressed. The recent data suggesting that apremilast may have a broad effect on inflammation was reviewed and options are generally poor or uncontrolled, resulting in the inability to amalgamate conclusions because of the considerable heterogeneity in study design and outcome measure. Hence, alternative and more efficacious therapies are needed for the study and treatment of vitiligo.
the patient was willing to try apremilast in a non-FDA-approved fashion [7]. After six weeks of apremilast treatment, she reported she believed she was starting to repigment. She continued treatment with apremilast at 30 mg twice daily. Three months after initiating treatment, the patient presented for a follow-up with mild improvement. The patient was bolstered at this time with 60 mg intramuscular triamcinolone acetonide and apremilast 30 mg twice daily was maintained. Note that many years of attempts at steroids as a solo therapy had yielded no improvement. Six weeks following this visit she started to note repigmentation of hands, but felt that normal skin was darkening as well, secondary to ambient sunlight, and she had a bit more pronounced hypopigmentation of perioral area. She received a repeat 60 mg intramuscular triamcinolone acetonide injection and maintained apremilast 30 mg twice daily. Five and a half months after beginning the apremilast treatment, she continued to have areas of improvement, but with a few new areas of hypopigmentation on her feet. The patient felt that repigmentation of hands and forearms was progressing slowly as seen in Figures 1 and 2. At follow-up, 6 and a half months after beginning apremilast treatment, the patient reports repigmentation in bilateral arms, legs, hands, feet, chest, and face. The areas appear red before repigmenting. She had no sun exposure in the interim. At her next follow-up, 8 months after beginning apremilast treatment, the patient experienced fairly significant repigmentation. It was important to continue following the patient without steroids to monitor her progress. At her last visit, 5 months without triamcinolone acetonide supplementation and 11 months after beginning apremilast 30 mg twice daily treatment, the patient was doing extremely well. She is tolerating the apremilast and is repigmenting on her chest and arms 60–70% and now also on her face. The patient provided images of 7 months without triamcinolone acetonide and 13 months after beginning apremilast 30 mg twice daily as shown in Figures 3 and 4. Side effects and rationale regarding apremilast treatment were reviewed at each visit. The patient reported no side effects throughout.

3. Discussion

The treatment of vitiligo is challenging given the lack of well controlled studies and inability to pool results based on considerable heterogeneity in study design and outcome measure. Apremilast has been shown to help in autoimmunity from alopecia areata [7]. Our case shows a patient who was treated with apremilast 30 mg twice daily and achieved significant repigmentation in the presence of initial steroid bolstering and continued repigmentation without steroids.

Apremilast is a phosphodiesterase-4 enzyme (PDE-4) inhibitor. Apremilast is FDA-approved for the treatment of patients with moderate to severe plaque psoriasis who are candidates for phototherapy or systemic therapy, as well as for use in psoriatic arthritis. PDE-4 normally degrades cyclic adenosine monophosphate (cAMP) into 5′-adenosine monophosphate. By inhibiting the PDE-4 enzyme specific for cAMP degradation, this results in increased intracellular cAMP levels and thereby regulation of numerous inflammatory mediators through the cAMP second messenger effect.
4. Conclusion

Psoriasis, alopecia areata, and vitiligo share a common pathway of autoimmunity, inflammatory signals, and cytokines present, although their pathogenesis is not completely understood. Apremilast is FDA-approved for psoriasis and psoriatic arthritis. Apremilast has also been shown to inhibit the development of alopecia areata [7]. We present this case to demonstrate the ability of apremilast to allow for repigmentation in a patient with chronic recalcitrant vitiligo in conjunction with initial systemic glucocorticoids. More clinical studies, ideally a randomized placebo-controlled trial, would be needed to prove that apremilast leads to repigmentation in vitiligo.

Conflicts of Interest

The authors declare that there are no conflicts of interest regarding the publication of this paper.

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