

Treatment of moderate to severe psoriasis with apremilast over 2 years in the context of long-term treated HIV infection: A case report

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Misha Zarbafian¹, Benoit Cote² and Vincent Richer¹

Abstract

Treatment of moderate-to-severe psoriasis in patients with HIV infection is a clinical challenge. We present the case of a patient with a longstanding history of well-controlled HIV. He had failed topical management, and his hypertriglyceridemia made use of acitretin potentially unsafe. He was unable to regularly attend a phototherapy unit. Physical examination revealed 12% total body surface area involvement with a Psoriasis Area Severity Index (PASI) of 10.2. His Dermatology Quality of Life Index (DLQI) was 20. After 3 months of apremilast treatment, his PASI decreased to 4.1. After 7 months, his PASI decreased to 2.7 and his DLQI to 1. Two years later, his PASI score was 2.4, with a stable CD4 count of 1200 cells/mm³ and an undetectable viral load. There were no serious opportunistic infections or laboratory abnormalities. To our knowledge, this represents the second reported case of psoriasis treatment with apremilast in a patient with HIV.

Keywords

Psoriasis, apremilast, immunosuppression, HIV, T-lymphocyte

Introduction

Treatment of moderate to severe psoriasis in patients with HIV infection is a clinical challenge. Traditionally, antiretrovirals, topicals, phototherapy, and acitretin have been recommended to avoid additional immunosuppression in this patient population. Methotrexate and cyclosporine may carry further risk of immunosuppression. Cases of safe treatment with tumor necrosis factor alpha (TNF-alpha) inhibitors and ustekinumab have been reported, as well as one case report using apremilast. To our knowledge, this represents the second case of treatment of psoriasis with apremilast in a patient with HIV in the literature.

Report of case

A 54-year-old male was referred to the dermatology clinic for management of his psoriasis. He had a long-standing history of HIV that was well controlled on abacavir/lamivudine and efavirenz. His CD4 count exceeded 1000 cells/mm³ and his viral load had been undetectable for years. He was also known for obesity, type 2 diabetes, and hypertriglyceridemia (394 mg/dL despite rosuvastatin and fenofibrate). He reported that his psoriasis was worse in the summertime, and his daytime occupation as a cook precluded regular attendance to a phototherapy unit. Dermatological examination revealed well-demarcated

scaly plaques typical of psoriasis affecting 12% total body surface area (TBSA) with a Psoriasis Area Severity Index (PASI) of 10.2. There was involvement of dorsal hands and genitals. His Dermatology Quality of Life Index (DLQI) was 20.

A trial of betamethasone dipropionate 0.05%/calcipotriol foam was only minimally helpful. As previously mentioned, phototherapy was impractical for this patient, and his hypertriglyceridemia made use of acitretin potentially unsafe. After discussion of potential benefits and risks, he was trialed on apremilast with the traditional increasing dose starter pack over 1 week, then at 30 mg po bid.

There was diarrhea during the initial few weeks of treatment. After 3 months on treatment, his PASI decreased to 4.1. After 7 months on treatment, his PASI decreased to 2.7 and his DLQI to 1. Two years later, his PASI score was maintained at 2.4, with a stable CD4 count of 1200 cells/mm³ and an

¹Department of Dermatology and Skin Science, The University of British Columbia, Vancouver, BC, Canada

²Division of Dermatology, Faculty of Medicine, Université de Montréal, Montreal, QC, Canada

Corresponding Author:

Misha Zarbafian, The Skin Care Centre, 835 West 10th Avenue, Vancouver, BC V5Z 4E8, Canada.

Email: misha.zarbafian@alumni.ubc.ca



undetectable viral load. There were no serious opportunistic infections or laboratory abnormalities, but the patient did report more self-resolving upper respiratory tract infections.

Discussion

The T-lymphocyte dysregulation seen in the setting of HIV infection may both contribute to the clinical picture and complicate the management of psoriasis, given the critical role of these cells in the pathogenesis of the latter.^{1,2} Though the incidence of psoriasis in the HIV-positive and general populations is similar, psoriatic disease in HIV-positive individuals has been found to generally be more severe and recalcitrant.^{2,3} When patients fail topical therapy, clinicians face a therapeutic challenge due to the risk of additional immunosuppression associated with some traditional systemic agents and biologics. Phototherapy can be quite beneficial in this situation but is not always an option due to geographical or patient-related factors.

Recent *Journal of the American Academy of Dermatology* guidelines recommend against the use of methotrexate and cyclosporine in this population due to the risk of additional immunosuppression.⁴ In addition, while acitretin may be used, it is less desirable in patients with concurrent hypertriglyceridemia which can be a side effect of antiretroviral drugs. There have been some reports of safe treatment of psoriasis in HIV-positive patients with ustekinumab and TNF-alpha inhibitors, such as etanercept.^{5,6}

Apremilast is a systemic agent approved for treatment of moderate-to-severe psoriasis. Phase 3 clinical trials have shown it to have greater reduction in PASI-75 and mean body surface area involvement versus placebo in treating plaque psoriasis, with no reported opportunistic infections.⁷ There has been one other published case report of its successful use in a patient with HIV and hepatitis C coinfection.² Though there are minimal data for the use of apremilast in the setting of chronic infections such as HIV or hepatitis C, these are not listed as strict contraindications in the product monograph.

As a phosphodiesterase-4 (PDE4) inhibitor, apremilast is thought to increase intracellular cyclic adenosine monophosphate (cAMP) and subsequently help achieve improved homeostasis between pro-inflammatory and anti-inflammatory mediators.⁸ Many of these pro-inflammatory mediators indirectly targeted by apremilast, such as TNF-alpha and interleukin (IL)-23, are specifically inhibited by other biologics. In fact, it is this equilibrium between pro-inflammatory and anti-inflammatory mediators that most notably differentiates apremilast from most available biologic therapies for psoriasis, which tend to have a specific pro-inflammatory target.⁸ Whether this results in less additional immunosuppression caused by apremilast in the setting of HIV or other chronic infections remains largely unknown.

To our knowledge, this represents the second case of treatment of psoriasis with apremilast in a patient with HIV in the literature. While selection of systemic treatments for psoriasis in patients with HIV remains complex due to their

exclusion from clinical trials, case reports of successful outcomes provide some real-life experience for dermatologists caring for patients with HIV.

Author contributions

All authors had full access to all of the data in the study and take responsibility for the integrity of the data and the accuracy of the data analysis. VR contributed to the study concept and design. MZ, BC, and VR contributed to the acquisition, analysis, and interpretation of data. MZ and VR drafted the manuscript. MZ, BC, and VR contributed to the critical revision of the manuscript for important intellectual content. Study supervision was done by VR.

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: VR has been an advisory board member and has performed consultation work for Celgene.

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Informed consent

Verbal consent to publish the case report was obtained from the patient in question.

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