Apremilast in People Living with HIV with Psoriasis Vulgaris: A Case Report

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Abstract
Psoriasis is a chronic papulosquamous skin disease that involves immune-mediated cutaneous inflammation and keratinocyte hyperproliferation. The associated immunosuppression in people living with HIV (PLHIV) with psoriasis poses a challenge to the clinician as therapeutic options are limited. Until now, there have been no documented case of apremilast therapy for HIV-associated psoriasis in India. Here, we report a case of HIV-associated psoriasis who achieved Psoriasis Area and Severity Index (PASI) 100 with apremilast therapy.

Keywords: AIDS, apremilast, HIV, psoriasis

Introduction
The prevalence of HIV-associated psoriasis may or may not be the same as in the general population.\cite{1} Psoriasis might worsen or be detected for the first time with HIV. When accompanied by severe pruritus and skin lesions, it also affects an individual’s quality of life. Moreover, treatment of these patients is a challenge as any therapy must be considered carefully keeping in mind the immunosuppressive effects of systemic drugs. So far, there has been no case report on HIV-associated psoriasis being treated with apremilast in India. Here, we report a case of newly diagnosed psoriasis in people living with HIV (PLHIV) successfully treated with apremilast.

Case History
A 35-year-old man with history of HIV for last 8 years presented with plaque psoriasis since 3 months. The patient had 10% body surface area (BSA) involvement with Psoriasis Area and Severity Index (PASI) score of 14.7 mainly affecting the trunk and legs and did not have associated psoriatic arthritis or nail changes [Figure 1a and b]. He was on Tenofovir, Lamivudine, and Efavirenz (TLE) regimen of highly active antiviral therapy since 8 years. Baseline investigations included complete blood count, renal function, liver function, fasting and postprandial blood sugar, urine routine and microbiology, lipid profile, chest X-ray, ECG, 2D echocardiogram, ultrasound of abdomen and pelvis, Mantoux test, and serology for hepatitis B and C, which were all normal. At baseline, his CD4 count was 742/µl. He was started on apremilast after initial titration and maintained on 30 mg twice a day. The patient was followed up every 2 weeks for clinical assessment and monthly evaluation of all the above laboratory parameters was done (except hepatitis B and C, Mantoux test). Improvement of his plaque psoriasis was noted after 2 weeks of treatment. Complete clearance (absolute PASI: 0, ∆PASI 100) was achieved after 6 weeks of starting apremilast with sustained remission on treatment at 3 months at the time of writing [Figure 2a and b]. Patient tolerated apremilast very well with no side effects. During the treatment, the patient did not develop any opportunistic infection or alteration in any of the laboratory parameters. His CD4 count at 3 months after therapy was 690/µl. Currently, the patient is on maintenance therapy –30 mg once a day with regular follow-up and safety assessment.

Discussion
Psoriasis can be the presenting feature of HIV and a clue to the degree of immune dysfunction. Traits of HIV-associated psoriasis include sudden onset of disease and recalcitrance to treatment. In this case, psoriasis was present since 3 months in a PLHIV since 8 years, and was moderate in severity.
Psoriasis is associated with activation of T cells, and hence treatment that decreases T cells can improve psoriasis. However, psoriasis in HIV positive patients is more severe as a result of weakened immunosuppression and its risk increases by nine-fold with a CD4 count <200/µl.[2] The mechanism of worsening of psoriasis in HIV infection is unclear and represents a paradox, given that helper T cells are the major target of HIV. This absurdity is tackled by three contending propositions. The first proposition embodies synthesis of type-1 cytokines such as interleukin (IL)-12, IL-23, and tumor necrosis factor (TNF) α, etc., with exception of AIDS patients wherein production of type-2 cytokines such as IL-4, IL-5, etc., are found in majority.[3] Number of CD8 cells and their memory subtype cells in layers of skin lesion are correlated with inception and ensuing worsening of psoriasis symptoms. These cells are also increased in patients suffering from AIDS-associated psoriasis, and this phenomenon is thought to cause psoriasis in AIDS. The second proposition states that T-cell dysregulation associated with unrestricted proinflammatory pathways might be responsible for causation of psoriasis. Exhaustion of CD4 suppressor cells have been hypothesized to be the triggering factor for all these events leading to psoriasis. Final proposition assumes that psoriasis occurs due to apperception of autoantigens leading to activation of cutaneous lymphocyte antigen-related T cells.

The treatment of HIV-associated psoriasis depends on the severity of disease and requires careful consideration. Topical treatment with emollients, corticosteroids, retinoids, vitamin D analogs, and tar may show good response in mild cases, whereas moderate and severe cases require systemic therapies including phototherapy, acitretin, cyclosporin, and TNF-α inhibitors (i.e., etanercept or infliximab) along with effective antiretroviral treatment.[1] The treatment of moderate and severe HIV-associated psoriasis is challenging and the risk-to-benefit ratio specific to these patients needs to be taken into consideration when selecting therapy.

Currently, reports of administration of biological therapies such as ustekinumab and TNF-α inhibitors such as etanercept and infliximab are documented in HIV-associated psoriasis.[4,5] But the concerns for risk of opportunistic infection remain with biologics. As apremilast is an immunomodulator, restoring a balance between proinflammatory and antiinflammatory mediators, it stands as a unique choice among systemic agents in the available drugs.

Apremilast, phosphodiesterase 4 (PDE 4) inhibitor, was prescribed in this case. No opportunistic infections or other complications occurred during treatment under close surveillance. Till date, there are very few reported cases of HIV-associated psoriasis treated with apremilast.[6,7] As per our knowledge, this is the first case of HIV-associated psoriasis treated with apremilast in India. This case report proves the efficacy of apremilast for the treatment of HIV-associated psoriasis and highlights the need for ongoing safety assessment. Nevertheless, additional experience is required with apremilast before it can be established as a standard therapy in HIV-associated psoriasis.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

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