A Case Report: The Clinical Features and Treatment Challenges of HIV-associated Psoriasis

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Abstract: Psoriasis is a chronic inflammatory skin disease, characterized by complex alterations in epidermal growth, differentiation as well as multiple biochemical, immunologic, and vascular abnormalities. The prevalence of human immunodeficiency virus (HIV)-associated psoriasis, and HIV-associated psoriatic arthritis may or may not be the same as in the general population. Misleading, unusual clinical presentations, severe disease, and frequent exacerbations are characteristicfindings.Many effective drugs for psoriasis and psoriatic arthritis are immunosuppressive agents. Therefore, the treatment for the HIV-infected patient is more challenging. A 64-year old female, the HIV-infected patient, was hospitalized because of severe generalized skin rash (92% of BSA, PASI: 28.2) with scaling. She diagnosed with HIV 7 years ago with a CD4 count of 500 cells/uL. The patient took antiretroviral therapy (lamivudine, nevirapine, and tenofovir) regularly. She was diagnosed with erythrodermic psoriasis and psoriatic arthritis. After the risk of opportunistic infection was eliminated, she receivedmethotrexate (MTX) 7.5 mg/week, and the dose was increased into 10 mg/week.Two months following the treatment, there was clinical improvement (4% of BSA and PASI: 2), without the presence of any opportunistic infections and MTX's adverse events. Although there are limited data on the efficacy and safety of systemic immunosuppressive agents for the treatment of psoriatic disease in HIV-positive patients,adequate concomitant antiretroviral therapy and close monitoring for the signs and symptoms of infectionmight reduce the likelihood of acute infection.

1 INTRODUCTION

Psoriasis is a chronic inflammatory skin disease with a strong genetic basis, characterized by complex alterations in epidermal growth, differentiation as well as multiple biochemical, immunologic, and vascular abnormalities. The relationship to a nervous system function is poorly understood. The root cause remains unknown.(Gudjonsson et al., 2012)

The prevalence of human immunodeficiency virus (HIV)-associated psoriasis, and HIV-associated psoriatic arthritis may or may not be the same as in the general population.(Zancanaro et al., 2006; Morar et al., 2010). Misleading, unusual clinical presentations, severe disease, and frequent exacerbations are characteristic findings. Psoriasis might worsen the HIV infection or might be detected for the first time concomitantly with HIV. It can be very severe, but it can regress before death. The development of HIV-associated psoriasis and HIV-associated psoriatic arthritis might be associated with poor prognosis in untreated patients, with a mean life expectancy ranging from 4 to 24 months following the diagnosis of psoriasis. (Morar et al., 2010).

Many effective drugs for psoriasis and psoriatic arthritis are immunosuppressive agents. Therefore, the management for the HIV-infected patient is more challenging, requiring both careful considerations on the potential risks and benefits of treatment and more fastidious monitoring for potential adverse events. (Morar et al., 2010). In this study, we report a case of safe and successful therapy with methotrexate in a 64-year-old female with HIV-associated psoriasis who responded poorly to

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previous treatments, which were steroids and ultraviolet B phototherapy.

2 CASE

A 64-year old female,the HIV-infected patient, was hospitalized because of severe generalized skin rash with scaling and joint pain in lower extremities. A month prior to hospitalization, she began visiting an outpatient clinic due to rashes and scaling on her arms, trunk, and legs. She was treated with topical steroid ointment, 5% liquor carbonic detergents (LCD), and two courses of the narrow band-ultraviolet B (NB-UVB) radiation. However, there was no improvement. She diagnosed with HIV 7years ago with a CD4 count of 500 cells/uL. She took antiretroviral therapy (lamivudine, nevirapine, and tenofovir) regularly. She had a history of smoking since childhood but no history of alcohol consumption, lithium or β-blocker treatment nor family history of psoriasis.

Erythematous skin lesions accompanied by silver whitish scales were observed on her scalp and over her entire body (92% of body surface area (BSA), psoriatic area severity index (PASI): 28.2). The patient was diagnosed with erythrodermic psoriasis. We consulted to a rheumatologist for her complaint of arthralgia in lower extremities, and she was diagnosed with psoriatic arthritis.

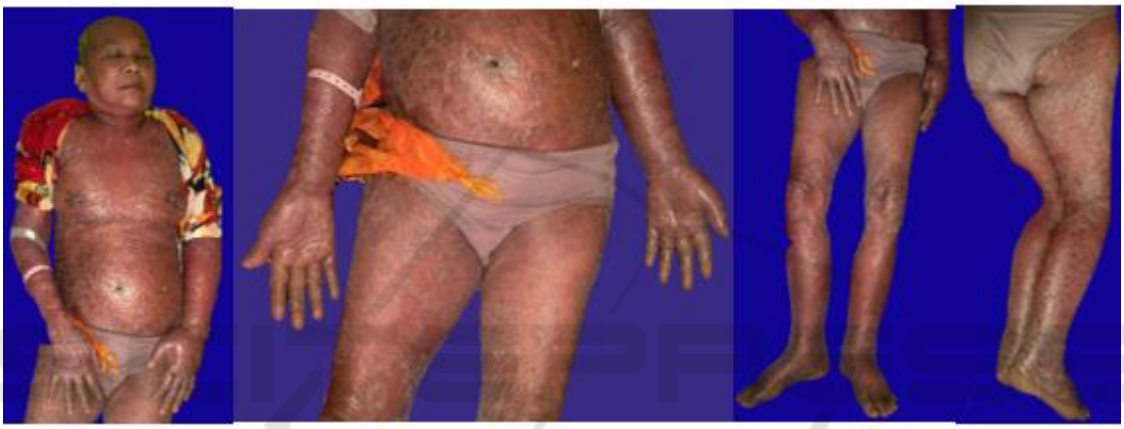

Figure 1. Clinical lesions oferythematous skin lesions accompanied by silver-white scales were observed over the patient's entire body (92% of BSA, PASI: 28,2).

The laboratory test results were as follows: white blood cells 8160/uL (63.9% neutrophils,25% lymphocytes, 6.6% monocytes, 4% eosinophils), hemoglobin 12.1 g/dL, platelets 273,000/uL; aspartate aminotransferase 19 U/L, alanine aminotransferase 18 U/L; total protein 5 g/dL, albumin 2.94 g/dL, creatinine 1 mg/dL, and CD4 T-cell count 750 cells/uL. Serology was negative for anti-hepatitis B virus and anti-hepatitis C virus antibodies. Venereal disease research laboratory (VDRL) test and *Treponema pallidum* hemagglutination (TPHA) test were non-reactive.

The patient received sulfasalazine 500 mgbid for ten days, but there was no clinical improvement. After the risk of opportunistic infection was eliminated, the patient received methotrexate(MTX) 7.5 mg/week and folic acid 5 mg/week for one week. The MTX's dosewas increased into 10 mg/weekfollowing no sign of hepatotoxicity.Two months after receiving MTX therapy, there was a clinical improvement (4% of BSA and PASI: 2). The MTX was continued, andthe patient was still being monitored at the outpatient clinic. After five months of treatment, the patient showed complete resolutionwithoutexperiencing relapsenor any MTX adverse events.

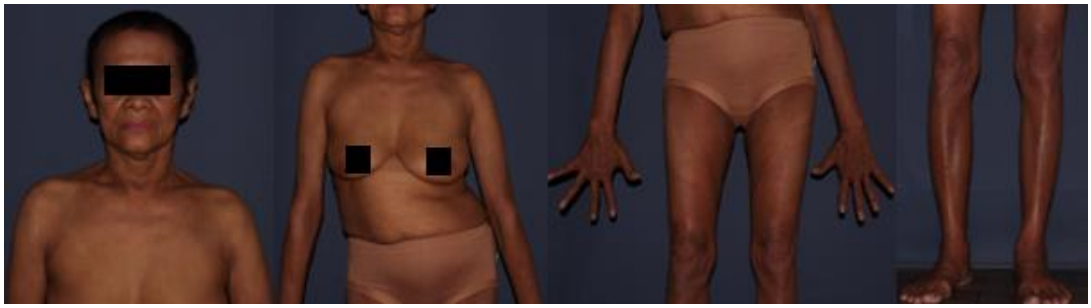

Figure 2. After five months of treatment, the erythematous cutaneous lesions and scaly plaque disappeared.

3 DISCUSSION

The characteristic traits of HIV-associated psoriasis, which distinguish it from classic seronegative psoriasis, are sudden onset as well as more severe, extensive, and recalcitrant nature.(Gaspari AA et al., 2011) The disease exhibits various morphological types in the same patients, appearing in one-third of their disease's course along with the high frequency of arthritis. Notably, the exacerbation due to staphylococcal and streptococcal infection is more common among HIV-infected individuals. (Morar et al., 2010). In this case,psoriasis began suddenly, and it became severe immediately (involving 92% of BSA), without other risk factors,e.g., excessive alcohol intake and the use of particular drugs (lithium and β-blockers).

Psoriasis in HIV-infected patients often responds poorly to the treatment and has a high morbidity rate, thus posing a challenge to the clinicians.(Je ong YS et al., 2014).The treatment of HIV-associated psoriasis depends on the severity of the disease. Mild cases (<2% of BSA) can be treated topically with emollients, corticosteroids, tar, vitamin D analogs, and retinoids. Meanwhile, moderate and severe cases (2–10% and <10% of BSA, respectively) can be treated with systemic therapies, including phototherapy, acitretin, cyclosporin, hydroxyurea, and tumor necrosis factor-α inhibitors (e.g., etanercept and infliximab) along with effective antiretroviral therapy.(De Socio GVL et al., 2006). This patient was treated with topical steroid ointment, 5% liquor carbonic detergents (LCD), and narrow band-ultraviolet B (NB-UVB) radiation, but there was no clinical improvement.

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 account when selecting therapies. (Nakamura M et al., 2018)

In this case, after the risk of opportunistic infection was eliminated, the patient received MTX.There was a clinical improvement, and she had not experienced relapse nor any MTX's adverse events.In the cases of refractory HIV-associated psoriasis, more traditional systemic immunosuppressants, such as cyclosporin A (CsA), MTX, and hydroxyurea,can be considered under certain circumstances. The evidence supporting the use of these agents is limited to a few reported cases, case series, and anecdotal experiences.(Van Voorhees et al., 2009) The decision to use a low dose of MTX should be made on a case-by-case basis following close consultation with the appropriate physicians who are caring for the patient, and cautious use is recommended in the cases of severe refractory disease.(Nakamura M et al., 2018)

4 CONCLUSION

Treatment of HIV-associated psoriasis can be challenging and needs to be tailored to suit the risk-to-benefit ratio in each patient. Although there are limited data on the efficacy and safety of systemic immunosuppressive therapies for the treatment of psoriatic disease in HIV-positive patients,adequate concomitant antiretroviral therapy and close monitoring for the signs and symptoms of infection might reduce the likelihood of acute infection.

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