

Review Article

Dermatological Manifestations of HIV/AIDS Patients

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Abstract

Human immunodeficiency virus infection and acquired immune deficiency syndrome (HIV/AIDS) is a global pandemic. According to Global HIV & AIDS statistics 2018, approximately 36.9 million people are living with HIV globally, 77.3 million [59.9 million–100 million] people have become infected with HIV since the start of the epidemic, 35.4 million [25.0–49.9 million] people died from AIDS-related illnesses since the start of the epidemic and 940000 [670000–1.3 million] people died from AIDS-related illnesses in 2017. It weakens a person's immune system by destroying important cells that fight disease and infection. Dermatologic diseases are common in the HIV-infected population. Skin disease can be uniquely associated with HIV disease and many of the cutaneous diseases are not unique to this group, but the presentation can be more severe and recalcitrant to treatment. The spectrum of skin conditions includes skin findings associated with primary HIV infection and a broad range of skin problems related to the immune deficiency of advanced AIDS. Recognition of characteristic eruptions can facilitate early diagnosis of HIV. A broad variety of neoplastic, infectious and non-infectious diseases can manifest in the skin and may alert the clinician of declining of the immune system. This article reviews the current spectrum of HIV-associated skin conditions, focusing on common complaints, infections, drug-associated toxicity and malignancies based on recently published literature relevant to this area.

Key words: *Cutaneous manifestations of HIV; Clinical features of AIDS patients; Kaposi's sarcoma*

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Human immunodeficiency virus infection and acquired immune deficiency syndrome (HIV/AIDS) is a spectrum of conditions caused by infection with the human immunodeficiency virus (HIV). HIV infection remains a major challenge in the field of medical sciences. Mucocutaneous manifestation was first observed in patients with HIV/AIDS in the early 1980s. Nevertheless, there is no specific skin disease which is merely caused by HIV; however, diseases such as Kaposi's sarcoma (KS) and eosinophilic folliculitis are highly suggestive of HIV/AIDS. In general, skin diseases which are usually self-limiting become chronic, recurrent, and resistant to treatment in HIV/AIDS.¹

Dermatological manifestations are common in different stages of HIV/AIDS and they appear as cutaneous

infection or inflammation, malignancy or drug-related diseases. Since the advent of combination antiretroviral therapy (cART), some dermatologic manifestations appear as immune restoration diseases.² Cutaneous manifestations as mollusca contagiosum, oral hairy leukoplakia, oral candidiasis, chronic ulcerating herpes simplex, and KS are strongly associated with HIV with progressive immunodeficiency. In the past decade, highly active ART has greatly changed the course of HIV infection by strengthening the immune system and reducing skin symptoms. On the other hand, sexually transmitted infections are on the rise, especially among homosexual men with HIV.³ Dermatological discomfort is more common among HIV positive patients compared with HIV-negative patients. Their symptoms are more complicated,

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abnormal and difficult to treat. These dermatological disorders change HIV-positive patient's quality of life.⁴

A study in India showed that cutaneous manifestation had infectious origin in 63.34% of patients, drug reactions in 20.66%, and inflammatory disorders in 16.66%.⁵ In HIV-positive patients with noninfectious skin disorder, pruritic papular eruption was the most common skin disease. A study was conducted in Pakistan to find out the pattern and prevalence of mucocutaneous lesions in HIV patients. Their result revealed that fungal infections such as oral candidiasis and onychomycosis were prevalent ranking second and third, respectively.⁶ Viral infections caused by herpes zoster had highest observed prevalence followed by viral warts. Bacterial infections seen in these patients were mostly folliculitis type. Generalized xerosis was observed among 22.6% patients.⁶ However, among clinical manifestations, photosensitivity, scabies, and hyperpigmentation were less prevalent. The dermatologic manifestations of 276 HIV positive patients in Tehran included dermatitis in 22.3% subjects, seborrheic dermatitis in 13.8%, folliculitis in 6.7%, dermatophytosis in 6.7%, oral candidiasis in 6.7%, warts in 6.7%, and herpes zoster in 3.6% cases.⁷ Another cross-sectional study was conducted in Tehran to evaluate the first skin disorder among 25 newly diagnosed HIV-positive patients. The most common dermatological findings were warts (anogenital and generalized warts in 36% cases) followed by psoriasis and cutaneous abscess.⁸ In HIV infection, skin becomes vulnerable to neoplastic disorders and opportunistic infections due to reduction in the number of antigen-presenting cells and CD4 lymphocytes. Oral candidiasis, hyperpigmentation, Kaposi's sarcoma, xerosis, folliculitis, and herpes zoster were frequently seen in patients with low CD4 cell counts.⁹

In Pakistan, skin diseases were observed in 19 patients (86.36%) with high CD4 cell counts and in 33 patients (82.5%) with low CD4 cell counts, but had no significant correlation with CD4 cell counts.⁶ A study done in Iran showed that the 32% of HIV-infected patients had CD4 cell count lower than 300 cells/mL.⁷ The participants with lower CD4 were described with more frequent and rigorous symptoms. In this study, CD4 cell counts had positive and significant correlation with skin diseases. Specific skin

abnormalities can help physicians to diagnose HIV.¹⁰ Consequently, awareness about these abnormalities is critical.¹¹ Viral infections were the main cause of infectious skin diseases, herpes simplex was the most common viral cause followed by herpes zoster. Oral candidiasis and dermatophytosis were the most common infections found in Pakistan and India respectively.^{6,12} Xerosis associated with pruritus was the most common cause of noninfectious skin disease followed by drug reaction and seborrheic dermatitis. Xerosis was reported in two other studies as the most common finding among HIV-positive patients (73.3% and 37.6%).^{3,13} However, the reason for the presence of xerosis in HIV patients is unclear, but it could be related to nutrient deficiencies, chronic diseases, and immune system deficiency.^{14,15} This could be due to the removal of the peptide part of the nerve which supplies the epidermis or it could be due to decrease in p substance in the nerves of sweat glands that affects their secretory activities.⁶ Psoriasis occurred in 2.9% of the patients and it was similar to other studies.¹⁶ Psoriasis affects 1–4% of HIV-infected patients, which is more than the general population. It is aggressively presented in HIV patients.

Kaposi's sarcoma (KS) was found in 0.8% of all cases with CD4 cell counts <200 cells/cumm and in whom HIV/AIDS was transmitted through sexual contact. KS can be transmitted through sexual contact and is more common in homosexuals than in heterosexuals. Anal sex is a major risk factor. The leading cause of HIV transmission in India was heterosexual activities and this could explain the relatively low prevalence of KS in India.¹⁷

In a study it was shown that starting antiretroviral drugs in HIV-positive patients led to many skin reactions.¹⁸ In this study 26 patients (10.8%) had a history of drug reaction. Dermatologic manifestations not only act as symptoms, but also act as an important indicator of the immune system status. CD4 cell count is a proper criterion for the diagnosis of a weakened immune system or disease progression.¹⁹ One study results showed that 75% of tumors and infestations (scabies and cutaneous leishmaniasis) were observed in subjects with CD4 <200 cells/cumm.³ In two patients with KS, the number of CD4 cells was below 200/cumm. Several skin disorders such as mollusca contagiosum, oral hairy leukoplakia and KS are dependent on CD4 cell counts, and HIV/AIDS advancement can

be predicted by them. Herpes zoster and seborrheic dermatitis tend to occur in the early phases of HIV infection and are related to large numbers of CD4 cells, i.e. about 380–450 cells/cumm.^{11,20} Among the participants, most dermatologic manifestations were either infectious or noninfectious seen in the second phase of the disease.²¹ A study from Nigeria showed that dermatologic manifestations were commonly seen in phases 2 and 3.²² Most skin infections in people with HIV/AIDS are exacerbated with an increasing trend, become resistant to treatment, and this could be a sign of disease progression. Dermatologic manifestations can be considered as good clinical indices to predict the status of immunity in HIV-positive patients in less developed countries. At present, there is sufficient evidence about the relationship between dermatologic manifestations and weakened immune system in adults and children.²³

Skin disorders are very common among patients with HIV/AIDS; but the pattern of these disorders varies greatly from one region to another. All HIV/AIDS patients need to be examined for skin diseases. Many skin disorders can be seen in HIV/AIDS patients with normal CD4 cell counts. Therefore, knowledge of dermatologic manifestations in HIV infection is important for physicians, especially for dermatologists and gynecologists in developing countries.

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