

## Cutaneous Manifestations of Human Immunodeficiency Virus/AIDS Patients in Albania

### Abstract

**Context:** Dermatologic diseases are common in the human immunodeficiency virus (HIV)-infected population. Cutaneous manifestations of HIV disease may result from HIV infection itself or from opportunistic disorders secondary to the declined immunocompetence due to the disease. **Aims:** The aim of this study is to determine the pattern of cutaneous manifestations in HIV in an adult HIV Clinic in Tirana. **Subjects and Methods:** This is a retrospective study including 355 HIV-positive patients with cutaneous manifestations who referred to the Ambulatory Clinic for HIV/AIDS, at the Infective Service and Dermatology Service of University Hospital Centre “Mother Theresa,” Tirana, Albania over the period 2008–2015. **Results:** The mean age of patients was 43.08 ( $\pm 11.8$ ) years, with a range 15–79 years. Two hundred and forty-seven (69.6%) of patients were male and 108 (30.4%) female. Male-to-female ratio is 2.3:1. The study found a significant trend of increasing incidence of dermatological pathologies with increasing stage of the disease. Fifty-five (15.5%) of patients with cutaneous lesions were in Stage 1, 132 (37.2%) in Stage 2, and 168 (47.4%) in Stage 3 ( $P < 0.001$ ). As for the HIV transmission method, the majority of patients (71%) were infected through heterosexual contact, followed by homosexual contact (16.3%), blood transfusion (3.4%), injecting drug user (2.3%), while for 7% of patients the mode of transmission was unknown. **Conclusions:** Early recognition of the cutaneous manifestation can help in better management of HIV infection in resource-poor setting, as it can indicate the progression of the disease and underlying immune status.

**Keywords:** Cutaneous manifestations, human immunodeficiency virus/AIDS, opportunistic infections

### Introduction

The burden of skin disease in developing countries has a serious impact on the quality of life resulting in loss of productivity at work and school and disfigurement.<sup>[1,2]</sup> Infectious dermatoses, particularly superficial fungal infections, scabies, and impetigo, are the most common skin problems due to overcrowding with a hot and humid environment, poor sanitary conditions, sharing of personal effects or fomites, and poor access to medical supplies and treatment.<sup>[3]</sup>

The skin problems here are further compounded by the high prevalence of human immunodeficiency virus (HIV) which commonly causes skin lesions.<sup>[4]</sup> It was reported that approximately 90% of people living with HIV have skin changes and symptoms during the course of their disease.<sup>[5]</sup> Skin diseases are significantly higher among HIV-positive than HIV-negative individuals.<sup>[6]</sup> Differences in

skin pigmentation, climate, hygiene, and genetic, environmental, demographic, and behavioral factors cause different clinical presentations and epidemiologic patterns of HIV-associated skin disease in different countries.<sup>[7]</sup> Skin findings are regarded by the WHO as useful in assessing severity of HIV infection in patients in resource-limited environment.<sup>[8]</sup> Skin disease can be uniquely associated with HIV disease, but more often represents common disorders, which may 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.<sup>[9]</sup> Knowledge of the skin and mucosal signs of HIV/AIDS is important, as mucocutaneous lesions are usually the first manifestation of HIV, ensures early diagnosis and prompt treatment, and reveals complications as HIV causes atypical and severe presentations of these conditions.<sup>[10]</sup> Although HIV dermatoses have been widely documented, reports of the type of dermatoses in HIV

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patients in Albania are scarce in this area of study.<sup>[11]</sup> The aim of this study is to determine the pattern of cutaneous manifestations in HIV in an adult HIV clinic in Tirana.

## Subjects and Methods

This is a retrospective study including 355 HIV-positive patients who referred to the Ambulatory Clinic for HIV/AIDS, at the Infective Service and Dermatology Service of University Hospital Centre “Mother Theresa,” Tirana, Albania over the period 2008–2015. It is the only national tertiary care center in Albania that treats HIV/AIDS patients all over the country. Furthermore, it is a reference center for all regional hospitals in the country and as such is a nationwide representative for management and care data for HIV/AIDS-infected people. For this reason, it was not necessary to determine the sample of the study to achieve a reliable and representative sample size. The Center for Disease Control and Prevention Classification System for HIV Infection was used in the study.

## Statistical analysis

Data were analyzed using the IBM SPSS Statistics for Windows, (Version 20.0. Armonk, NY: IBM Corp., USA). Categorical variables are presented as absolute frequencies and percentages. Chi-square test was used to compare the proportions between categorical variables. Descriptive statistics of continuous variables are summarized as mean and standard deviation. Kolmogorov–Smirnov test was used to test the distribution of continuous variables. The Student’s *t*-test was used to compare the means of the continuous variables. The statistical tests are two-sided.

## Results

The mean age of patients was 43.08 ( $\pm 11.8$ ) years with a range 15–79 years. Two hundred and forty-seven (69.6%) of patients were male and 108 (30.4%) female. Male-to-female ratio is 2.3:1 [Table 1].

The study found a significant trend of increasing incidence of dermatological pathologies with increasing stage of the disease. Fifty-five (15.5%) of patients with cutaneous lesions were in Stage 1, 132 (37.2%) in Stage 2, and 168 (47.4%) in Stage 3 ( $P < 0.001$ ).

As for the HIV transmission method, the majority of patients (71%) were infected through heterosexual contact, followed by homosexual contact (16.3%), blood transfusion (3.4%), injecting drug users (2.3%), while for 7% of patients the mode of transmission was unknown.

In the study predominate the patients with one cutaneous lesion (54.6%) followed by patients with two lesions (27.9%), patients with three lesions (12.4%) and patients with four lesions (4.5%),  $P < 0.001$ .

Table 2 shows the type of dermatologic manifestations. Our findings were classified into infectious and noninfectious

**Table 1: Sociodemographic and clinical characteristics of patients**

Variables	n (%)
Age, mean $\pm$ SD	43.08 $\pm$ 11.8
Sex	
Female	108 (30.4)
Male	247 (69.7)
Clinical stage of HIV/AIDS	
Stage 1	55 (15.5)
Stage 2	132 (37.2)
Stage 3	168 (47.4)
Mode of transmission	
Heterosexual	252 (71.0)
Homosexual	58 (16.3)
Blood transfusion	12 (3.4)
IDU	8 (2.3)
Unknown	25 (7.0)

SD: Standard deviation; HIV: Human immunodeficiency virus; IDU: Injecting drug users

**Table 2: Type of cutaneous manifestation**

Type of cutaneous lesions	n (%)	95% CI
Oral	195 (54.9)	49.56-60.15
Mucosal	219 (61.7)	56.42-66.78
Cutaneous	212 (59.7)	54.39-64.84
STI	94 (26.5)	21.98-31.41
Immunologic	93 (26.2)	21.7-31.10
Tumoral	28 (7.9)	5.31-11.21
Reaction	2 (0.6)	0.08-2.07
Viral	133 (37.5)	32.44-42.76
Bacterial	60 (16.9)	13.15-21.21
Mucotic/parasitic	205 (57.7)	52.37-62.89

CI: Confidence interval; STI: Sexually transmitted infection

causes based on their etiologies. Viral infections were observed in 37.5% of cases and bacterial infections in 16.9% of cases.

Most frequent infections were oropharyngeal candidosis (53.5%), herpes zoster (19.7%), seborrheic dermatitis (17.2%), syphilis (12.4%), anal condyloma (5.6%) and leukoplakia (5.1%). Coinfection with hepatitis B virus was observed in 12.4% of patients, with hepatitis C virus in 2.3%, with syphilis in 20.6%, and with tuberculosis in 7.6% of patients.

The mean CD4 value in patients was  $M = 179.5 (\pm 183.5)$ , median 142, interquartile range (52–146). Kaposi’s sarcoma (KS) was diagnosed in 32 (9%) patients (95% confidence interval [CI] 6.24–12.47), with a mean age 43.4 ( $\pm 12.7$ ) years and range 24–79 years. The mean CD4 cell counts of patients with KS was  $M = 107.8 (\pm 77.1)$  cells/mm<sup>3</sup>. All patients received antiretroviral therapy. The adherence toward therapy was good in majority of patients (85.8%), (95% CI 82.35–88.79), ( $P < 0.001$ ). In this study, 60 patients (16.9%) had a history of drug reaction. Overall, 41 (11.5%) of patient had a fatal outcome.

## Discussion

Dermatologic manifestations can be considered as good clinical indices to predict the status of immunity in HIV-positive patients in less developed countries.<sup>[12]</sup> At present, there are ample amount of evidence about the relationship between dermatologic manifestations and weakened immune system in adults and children. CD4 cell count is a proper criterion for the diagnosis of a weakened immune system or disease progression. KS can be transmitted through sexual contact which is more common in homosexuals than heterosexuals. Anal sex is a major risk factor. The skin infections in people with HIV/AIDS which exacerbate and become resistant to treatment could be a sign of disease progression.<sup>[13,14]</sup> Those involved in health care of HIV patients must therefore know the type, pattern, and prevalence of skin diseases in their locality. Mucocutaneous diseases have been correlated with CD4 counts in many studies, while few studies documented the clinical correlation of these diseases to the WHO clinical stages. Cutaneous manifestations of HIV disease may result from HIV infection itself or from opportunistic disorders secondary to the decline in immunocompetence from the disease.<sup>[15-17]</sup> Cutaneous disorders may be the initial signs of HIV-related immunosuppression. Recognizing HIV-related skin changes may lead to the diagnosis of HIV infection in the early stages, allowing initiation of appropriate antiretroviral therapy. Many associated skin diseases are more severe in this group. HIV-associated dermatoses are very common. Recognition of characteristic eruptions can facilitate early diagnosis of HIV. A broad variety of neoplastic, infectious, and noninfectious diseases can manifest in the skin and may alert the clinician to decline of the immune system.<sup>[18,19]</sup> Diagnosis of cutaneous disease can be challenging. While some conditions reliably present with stereotyped lesions, other diseases may have highly variable manifestations, leading to diagnostic uncertainty that may necessitate specialist consultation and skin biopsy.<sup>[20]</sup> The approach to diagnosis of skin lesions includes the assessment of location, extent, primary lesions, and secondary changes. The extent and severity of lesions can be helpful diagnostic clues and can provide insight regarding the severity of immunosuppression.<sup>[21-24]</sup>

## Conclusions

Dermatological complications of HIV/AIDS arise from a variety of conditions with various etiologies. Therefore, careful considerations should be given to timely diagnosis and prompt treatment of dermatological complications among HIV patients. Besides the clinical difficulty in preventing and treating skin diseases, the skin also affects the patient's general appearance and their quality of life. The high prevalence of skin diseases, severity of complications, and overall influence on the patient's quality of life highlight the need for further investigation of the

role of the immune system in dermatologic manifestations among HIV patients.

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## Conflicts of interest

There are no conflicts of interest.

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