

Spectrum of Cutaneous Manifestations in HIV-Infected Individuals: A Prospective Study

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Received: 27-07-2025 / Revised: 25-08-2025 / Accepted: 27-09-2025

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Conflict of interest: Nil

Abstract:

Several cutaneous conditions may be seen in human immunodeficiency virus infection during the course of HIV infection atypical and unusual manifestations can be seen. The varied spectrum of cutaneous manifestations in HIV patients was studied with this objective in mind.

Methods: All HIV positive patients attending the outpatient and inpatient in Dept of Dermatology, Shri Atal Bihari Vajpayee Medical College, Bangalore were included in the study. The detailed history was taken and cutaneous and systemic examination was carried out. Side lab investigations were done, if necessary, after obtaining informed consent. The data obtained was entered in a proforma and results were analysed using percentage analysis. The results of the study were tabulated, and compared with other studies in the literature.

Results: In our study we found that among the 55 HIV positive patients included in the study, 50 patients had cutaneous lesions. Majority of the patients (46%) belonged to the 31-40 years age group, the youngest was 17 years old and the oldest was aged 59 years. There were 19 female and 31 male patients. Among these patients 37(67.3%) had infectious dermatoses and 31(56.4%) cases were having non-infectious dermatoses. Among the patients having infectious dermatoses, 19(34.5%) had fungal infections, 18(32.7%) had viral infections, 5(9.1%) had bacterial infections and 1(1.8%) had parasitic infections.

Conclusion: In our study we come across high prevalence (91%) of skin and mucocutaneous diseases in HIV patients. Various patterns of skin manifestations were observed in our study, including seborrheic dermatitis, tinea corporis and pruritic popular eruption. Treatment of this skin manifestation would be incomplete without adequate treatment of HIV itself.

Keywords: HIV, Cutaneous Infection, Dermatitis.

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Introduction

Human immunodeficiency virus (HIV) is the most significant emerging infectious pathogen of the 20th century. Since the Acquired Immuno Deficiency Syndrome (AIDS) was first recognized in 1981 [1] from America, HIV/AIDS epidemic continue its expansion across the world and has grown to be leading cause of disease burden worldwide. In India there are an estimated 23.9 lakh people currently living with HIV/AIDS. India is home to the third largest number of people living with HIV in the world. HIV infection has become a global pandemic with cases reporting worldwide. [2] The RNA retrovirus targets the CD4⁺ cells and causes defective alteration of immune system function. Patients progress to Acquired Immuno Deficiency Syndrome when CD4⁺ cells count fall below 200/mm [3]. Progression of the disease will lead to deflection of immune system leading to progressive fall in the level of CD4 cells. This is responsible for occurrence of infections by various opportunistic

microorganisms. Patients continue to have poor prognosis despite the arrival of highly active antiretroviral therapy. Dermatological diseases are among the first recognized clinical manifestations of AIDS. They are seen at every stage of HIV infection and are often its presenting features. [5] According to the literature [6-10] around 80% - 95% of patients can have cutaneous manifestations which can occur at any time during the course of infection. Often the skin may be the first or the only organ involved. [6,11,12] Cutaneous manifestations of HIV can be considered as good clinical indicators to predict and be considered lying immune status in resource poor countries. [5] Some skin problems are less consequential than other manifestations of HIV infection but many are very distressing to patients [13] and some potentially very serious or fatal [14-17] Common cutaneous conditions which we encounter are viral, bacterial, fungal and noninfectious dermatoses such as seborrheic

dermatitis, herpes zoster, pruritic papular eruptions and xerosis. Some of the diseases such as oral hairy leukoplakia, Kaposi sarcoma occurs exclusively in HIV patients. When the CD4 count reaches 100/mm [3] or less, the incidence of skin diseases becomes twice. As majority of the patients present with cutaneous lesions at some point of the disease, it is important for dermatologists to have an idea of these diseases, and this will point to an underlying HIV infection and help in early detection and commencement of treatment. Recognizing HIV associated skin disease may lead to early HIV diagnosis and appropriate management, thereby reducing the morbidity, mortality and transmission of the disease [18]

Materials and Methods

This observational study was undertaken at the Department of Dermatology, Shri Atal Bihari Vajpayee Medical College, Bangalore. The institutional medical ethics committee approval was taken before the study was conducted.

The patients were included in the study through the following channels.

1. All the outpatient attending the Dept. of Dermatology, Shri Atal Bihari Vajpayee Medical College, Bangalore
2. All the in patients in Dept. of Dermatology, Shri Atal Bihari Vajpayee Medical College, Bangalore

They were informed about purpose of the study, reason for inclusion in the study, the need for taking photographs. A detailed informed consent was obtained. The detailed history was taken and cutaneous and systemic examination was carried out. Side lab investigations were done, if necessary, after obtaining informed consent. Investigations like VDRL test, KOH mount, Gram's staining, Tzanck smear, Wood's lamp examination were done as and when needed. The data obtained were entered in a pre-structured proforma and results were analysed using percentage analysis. The results of the study were tabulated and compared with other studies in the literature.

Data Collection and Statistical Analysis: All the collected data were recruited using a predesigned proforma which is attached in the appendix. Data was entered in the Microsoft excel sheet. Statistical analysis was done using percentage analysis.

Results

In our study we found that among the 55 HIV positive patients included in the study, 50 patients had cutaneous lesions.

Sex

Among the 50 patients who had cutaneous lesions 31(62%) were men and 19(38%) were women

Age

The patients were divided into 4 groups based on their age:

1st group- 21-30 years, which consisted of 9 patients,

2nd group- 31-40 years, which consisted of 23 patients,

3rd group- 41-50 years, which consisted of 14 patients,

4th group- 51-60 years, which consisted of 4 patients,

Cutaneous manifestations were more common among patients aged 31-40 years

Dermatoses: The cutaneous manifestations of HIV were broadly classified based on etiology into infectious and non-infectious disorders. 40 patients (73%) had infectious disorders and 31 patients (56%) had noninfectious disorders.

Infectious: The infectious disorders were further classified into fungal, viral, bacterial and fungal infestations. Among these disorders fungal infections (38.1%) were the most common, followed by viral infections (27.2%), bacterial infections (5.4%) and finally parasitic infections (1.8%). The most common fungal infections observed were Tinea Corporis (18.1%), oral candidiasis (12.7%) and tinea versicolor (7.2%). Among the viral infection's herpes Zoster was the commonest (10.9%) followed by molluscum contagiosum (5.5%), herpes simplex (3.6%), genital herpes (3.6%), condyloma acuminata (3.6%). Among the bacterial infections furunculosis was seen in (3.6) of patients and folliculitis were seen in (1.8%) of patients. Among parasitic infestations scabies was seen in (1.8%) of patients

Noninfectious dermatoses: The noninfectious disorders were subdivided into the following types in descending order of frequency: Seborrheic dermatitis (12.7%), Pruritic papular eruption (10.9%), Xerosis (10.9%), Oral pigmentation (9.09%), Diffuse hyperpigmentation (5.45%), Diffuse alopecia (1.8%)

Table 1: Distribution of patients based on presence of cutaneous lesions

Presence of cutaneous lesions	No of patients:55	%
Yes	50	90.9%
No	5	9.09%

Table 2: Distribution of patients with cutaneous manifestations based on age

Age in years	No. of patients	%
21-30	9	18
31-40	23	46
41-50	14	28
51-60	4	8
Total	50	100.0

Table 3: Distribution of patients with cutaneous manifestations based on gender

Gender	No. of patients	%
Male	31	62
Female	19	38
Total	50	100.0

Table 4: Distribution of cases based on type of skin lesion

Type of Skin Lesion	No. of Cases	%
Infectious	40	73
Non-Infectious	31	56

Table 5: Distribution of cases based on type of infections

Type of infection	No. of cases	%
Fungal	21	38.18
Viral	15	27.27
Bacterial	3	5.45
Parasitic	1	1.8

Table 6: Distribution of cases based on the type of fungal infections

Type of fungal infection	No. of cases	%
Oral Candidiasis (OC)	7	12.7
Dermatophytoses(D)	10	18.18
Tinea Versicolor (TV)	4	7.27
Total	21	38.18

Table 7: Distribution of cases based on the type of viral infections

Type of viral infection	No. of cases	%
Condyloma Acuminata (CA)	2	3.6
Genital herpes (GH)	2	3.6
Herpes Simplex (HS)	2	3.6
Herpes Zoster (HZ)	6	10.9
Molluscum Contagiosum (MC)	3	5.5
Total	15	27.27

Table 8: Distribution of cases based on different types of non-infectious disorders

Non-Infectious	No. of Cases	%
Pruritic papular eruption (PPE)	6	10.9
Seborrheic dermatitis (SD)	7	12.7
Psoriasis exacerbation (PE)	3	5.45
Xerosis(X)	6	10.9
Oral pigmentation (OP)	5	9.09
Diffuse hyper pigmentation (DHP)	3	5.45
Diffuse alopecia (DA)	1	1.8
TOTAL	31	56%

Discussion

Despite being home to the world's third largest population suffering from HIV/AIDS, the AIDS prevalence rate in India is lower than in many countries. The spread of HIV in India is primarily

restricted to the southern and north eastern regions of the country and India has also been praised for its extensive anti-AIDS campaign. In the present study 91% of HIV infected patients had cutaneous lesions. This was similar to a study done by Tzung TY in which 90% of HIV infected patients showed

cutaneous lesions. [19] In the present study the number of male patients showed a slight preponderance over female patients. Similar male preponderance was observed by Sen S et al in his study, as opposed to these results, Chopra S in his study observed female preponderance [20]. In the present study dermatophyte infections were the most common of all infectious disorders accounting for 18.1%. Similar results were obtained by Kar et al, where tinea corporis accounted for 14.26% of all the cutaneous disorders in HIV infected patients. Dermatophyte infections are very common in AIDS patients, with extensive involvement, and are reported to affect 30 to 50% of the population. [21] However the clinical manifestations of tinea corporis in our study were not different in any way from that seen in immunocompetent individuals. The next common condition encountered in our study was oral candidiasis seen in 12.7% of patients. The most common presentation in our study was median rhomboid glossitis, as opposed to acute pseudomembranous variant seen in other studies. [22] Though the incidence in present study was less, higher incidence of oral candidiasis ranging from 30-36% has been reported in various Indian studies. [23] Herpes zoster showed a high prevalence [10.9%] among the viral infections. In our study patients presented with history of recurrences and multidermatomal involvement. However, the hemorrhagic and necrotic type seen in other studies were not found in our study [24]. Herpes genitalis and condyloma acuminata were the only sexually transmitted diseases we came across in our study with both showing a prevalence of 3.6%. Condyloma acuminata were seen among homosexuals. Similarly, D.M Thappa, in his study observed 20% of HIV infected men had condyloma acuminata. All these individuals were homosexual men. [25] Compared to other studies, our study showed a low prevalence of other sexually transmitted diseases. [24] The probable reason for the decreased incidence of other sexually transmitted diseases, could be the usage of antibiotics. This decreased incidence of sexually transmitted diseases in our study underscores its importance in the transmission of HIV.

Conclusion

We are currently living in an era which is an epidemic of HIV, and even in India there is an increased prevalence of HIV. Sometime cutaneous manifestation can be the only presentation of the early disease, thus helping in early detection and prompt treatment of patients, hence improving their survival. Hence dermatologists may be first person who can arouse a suspicion of HIV infection.

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