

# HIV seroprevalence and HIV associated dermatoses among patients presenting with skin and mucocutaneous disorders

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## ABSTRACT

**Background and Aims:** Skin and mucocutaneous disorders are common in HIV infection and may be the earliest manifestation of the disease. The spectrum of these disorders is wide and may vary in different regions due to varying prevalence of various microbial agents. Therefore, we studied the seroprevalence of HIV infection in patients presenting with skin and mucocutaneous disorders and clinical and regional epidemiological profile of seropositive patients. **Methods:** Eleven hundred and seventy patients having any type of skin or mucocutaneous disorders were screened for HIV infection (NACO guidelines) after recording their clinical and epidemiological profile. **Results:** Of the 1170 patients screened, 38 (3.24%) were found to be positive for HIV 1 and none for HIV 2 antibodies. Seropositive patients belonged to the age group of 9 to 48 years, with a male:female ratio of 0.9:1. Heterosexuality was the most common mode of transmission (86.8%). A wide range of infectious and noninfectious lesions were observed and herpes zoster was the most common infectious disease (31.5%) followed by mucocutaneous candidiasis (26.3%). The most common noninfectious manifestation was seborrhoeic dermatitis (18.4%) followed by pruritic papular eruptions (7.9%). **Conclusion:** High prevalence and wide variety of skin and mucocutaneous disorders in HIV-positive patients highlight the importance of better vigilance and early suspicion of HIV infection in such patients.

**Key words:** Herpes zoster, HIV seropositive, Skin and mucocutaneous disorders

## INTRODUCTION

Skin is the most commonly affected organ in patients with HIV infection. A wide range of infectious and noninfectious skin lesions develop during the course of the disease and in many, these may be the earliest and the only sign of HIV/AIDS.<sup>[1]</sup> It is almost certain that HIV-infected individuals will develop skin-related disorders some times during the course of HIV disease. Since the spectrum and frequency of occurrence of skin and mucocutaneous manifestations may vary in different regions and different populations,<sup>[1-3]</sup> the present study was undertaken to determine the regional epidemiological profile and the spectrum of skin and mucocutaneous lesions in HIV-positive patients presenting with such disorders to a tertiary care hospital.

## METHODS

A total of 1170 attendees of the outpatient department of Skin and STD department of Guru Nanak Dev Hospital, Amritsar having cutaneous and mucocutaneous disorders were screened for HIV infection over a period of two and a half years (December 2002–May 2005). Their detailed history including that of high-risk behavior, mode of transmission of infection, marital status, partner's HIV status, presenting complaints and clinical diagnosis were recorded in a predesigned proforma. Blood samples were collected after obtaining their written consent and pretest counseling. HIV seropositivity was determined following NACO guidelines.<sup>[4]</sup> Post-test counseling was done and strict confidentiality was observed.

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## RESULTS

Of a total of 1170 patients screened, 38 (3.24%) were seropositive for HIV-1 and none were positive for HIV-2 antibodies. Their sociodemographic profile is shown in Table 1. The mean age of seropositive patients was  $30 \pm 5$  years, with 73.7% in the age group of 21 to 40 years and 5.3% children below the age of 14 years. There was slight predominance of women (52.6%) over men (47.4%). A majority of them belonged to rural area

**Table 1: Sociodemographic characteristics of 38 HIV-seropositive patients**

Variables	No. positive (%)	Remarks
Age (years)		
0-14	2 (5.3)	
15-20	1 (2.6)	
21-40	28 (73.7)	
>40	7 (18.4)	
Sex		
Males	18 (47.4)	Male-female ratio
Females	20 (52.6)	0.9:1
Geographical distribution		
Rural	27 (71)	
Urban	11 (29)	
Educational status		
Illiterate	20 (52.6)	
Upto 8 <sup>th</sup> standard	7 (18.4)	
10 <sup>th</sup> standard and above	11 (29)	
Occupation		
Housewives	18 (47.4)	90% (18/20) seropositive females—housewives
Unskilled workers	16 (39)	83.3% (15/18) seropositive males—unskilled workers
Truck drivers	2 (5.3)	
Students	2 (5.3)	
Marital status		
Married	24 (63.15)	
Unmarried	7 (18.4)	
Widow/separated	7 (18.4)	
Partner's HIV status (total 36, 2 children excluded)		
Positive	17 (47.2)	Females, 11; males, 6
Negative	5 (13.9)	Females, 2; males, 3
Not known	14 (38.9)	Females, 7; males, 7
Probable mode of transmission		
Heterosexual	33 (86.8)	
Perinatal	2 (5.3)	
Blood and blood products	2 (5.3)	
Not specified	1 (2.6)	

(71%) and were illiterate (52.6%). Although 18 of the 20 women (90%) were housewives, 15 of the 18 men (83.3%) were agricultural and unskilled workers. Heterosexuality was the most common (86.8%) mode of transmission followed by transmission by perinatal route and blood transfusion (5.3%) each.

Analysis of skin and mucocutaneous manifestations showed that in the majority of seropositive patients (24/38-63.15%), the lesions were infectious in nature with herpes zoster (31.5%) being the most common manifestation followed by mucocutaneous candidiasis (26.3%), dermatophytosis and molluscum contagiosum (13.2% each – Table 2). The lesions of herpes zoster were disseminated (50%), recurrent (16.7%), multidermatomal (16.7%) and had aberrant involvement (16.7%). Moreover, the lesions of molluscum contagiosum showed genital localization in 60%. The most common noninfectious manifestation was that of seborrhoeic dermatitis (18.4%) followed by pruritic papular eruptions (7.9%).

## DISCUSSION

Punjab is a low prevalence state for HIV infection with prevalence of 0.25% and 1.09% among the low- and high-risk populations, respectively.<sup>[5]</sup> In the present study, 3.24% patients having skin/mucocutaneous disorders were found to be positive for HIV infection. Higher prevalence of HIV infection in the patients of the study could be because cutaneous manifestations are the most common presentations in the HIV 1 infection.<sup>[1]</sup> In addition, cosmetic disfigurement caused by some of these disorders also prompts these patients to seek early medical help in a tertiary care hospital. In the study of Smith *et al.*, 92% of HIV 1-positive patients presented with skin disorders.<sup>[6]</sup>

The study of various sociodemographic factors of HIV/AIDS positive patients showed that our findings corroborate the data from NACO and another study from Northern India.<sup>[3,7]</sup> Nearly three-fourths (73.7%) of our patients were in the age group of 21 to 40 years, which is the most productive and sexually active age group. Slight preponderance of women over men (Female:Male = 1:0.9) shows that the epidemic is increasing steadily among women and rural young housewives with low level of education are particularly at risk. Most of the women in our study were married monogamous women and had acquired the infection from their spouses, which reflects the vulnerability of the women to HIV infection and dominance of men in

**Table 2: Skin and mucocutaneous disorders in 38 HIV-seropositive patients**

Infectious disorders	No. positive (%)	Noninfectious disorders	No. positive (%)
Herpes zoster	12 (31.5)	Seborrhoeic dermatitis	7 (18.4)
Mucocutaneous candidiasis	10 (26.3)	Pruritic papular eruptions	3 (7.9)
Dermatophytosis	5 (13.2)	Mucosal lichen planus	1 (2.6)
Molluscum contagiosum	5 (13.2)	Miliaria rubra	1 (2.6)
Scabies	4 (10.5)	Lichen simplex chronicus	1 (2.6)
Pyoderma	3 (7.9)	Drug rash	1 (2.6)
Venereal warts	3 (7.9)		
Herpes progenitalis	3 (7.9)		
Chancroid	2 (5.3)		
Candidal balanoposthitis	1 (2.6)		
Herpes labialis	1 (2.6)		

the Indian society. Similar to other studies, heterosexual transmission was the major mode of transmission (86.8%) in our study.<sup>[2,3,7]</sup> It was observed that most of the seropositive men had acquired the infection from commercial sex workers and had then passed it on to their spouses through unprotected sexual intercourse. The infection was then vertically transmitted to the children. In our study, perinatal transmission was observed in 5.3%, which is comparable to its findings of others.<sup>[3,7]</sup>

Because of immunosuppression, HIV-positive patients have multiple cutaneous lesions, which may be infectious, noninfectious or neoplastic in nature. In our study, multiple lesions were observed in 15 of 38 (39.5%) seropositive patients, which is similar to the findings from another center of Northern India.<sup>[2]</sup> In majority of our patients (63.15%), the etiology was infectious and the most common lesion was that of herpes zoster. However, oral candidiasis and dermatophytosis have been reported more commonly from other regions.<sup>[2,8,9]</sup> The lesions of herpes zoster in many of our patients were disseminated, recurrent and had multidermatomal and aberrant involvement similar to the studies of Mandal<sup>[10]</sup> and Cohen *et al.*<sup>[11]</sup> This highlights the importance in recognizing the wide and varied spectrum of herpes zoster in HIV-positive patients, which is becoming more common in the era of changing natural history of HIV infection because of improved antiretroviral therapy (ART).<sup>[1]</sup> Our observation regarding the prevalence of mucocutaneous candidiasis (26.3%) is concurrent with the findings of Kaplan *et al.*<sup>[12]</sup> and Lim *et al.*<sup>[13]</sup> However, others have reported very high prevalence of this infection from other regions of India.<sup>[8,9]</sup>

Seborrhoeic dermatitis is one of the common

noninfectious skin condition in India with prevalence rates of 8% to 21% in HIV-positive patients<sup>[1]</sup> and our finding of 18.4% falls within this range. However, Kaplan *et al.*,<sup>[12]</sup> reported the presence of this infection in 83% from the United States. This could be because of an overgrowth of the yeast *Pityrosporum ovale*, which is suggested to be implicated in the pathogenesis of seborrhoeic dermatitis.<sup>[1]</sup> The next manifestation in the present study was again infectious in nature—dermatophytosis and molluscum contagiosum (13.2% each). Dermatophytosis has also been reported as a common infection (22%), with variability in presentation in another study from India.<sup>[14]</sup> Our observation regarding the genital distribution of molluscum contagiosum in 60% is comparable with that of Kaplan *et al.*<sup>[12]</sup> and may be due to the fact that these patients had acquired both infections through the sexual route.

Scabies was observed in 4 patients (10.5%), and one of them had it in severe crusted form on face, palms and soles, along with a dystrophy of nail plates. Because the infection is related to cutaneous immune response, crusted scabies could be considered as an opportunistic infection of AIDS.<sup>[1,9]</sup> Other lesions observed in the present study were pyodermas, venereal warts, herpes progenitalis, pruritic papular eruptions, chancroid, candidal balanoposthitis, herpes labialis, lichen simplex chronicus and drug rash. Mucosal lichen planus and miliaria rubra (2.6% each) were only coincidental findings, as reported by Verma *et al.*<sup>[2]</sup> No case of opportunistic neoplasia was observed. This could be because Indian HIV/AIDS patients do not survive long enough to have the opportunistic neoplasia.

## CONCLUSION

Thus, we conclude that the skin and mucocutaneous

disorders are extremely common and may present with early, severe, unusual and atypical manifestations in the course of HIV infection. Awareness of the varied pattern of these manifestations would help in the early diagnosis and management of HIV infection, which would in turn decrease the morbidity and improve the quality of life of HIV-infected patients.

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