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Original Article

Frequency of mucocutaneous manifestations in HIV positive Pakistani patients

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Abstract

Background Mucocutaneous manifestations are commonly observed in HIV patients. These range from various opportunistic infections, inflammatory dermatoses to neoplasms and drug reactions.

Objective To observe the nature and frequency of mucocutaneous manifestations in patients of HIV, with or without antiretroviral therapy and their correlation with CD4 cell counts.

Patients and methods The duration of study was one year, starting from July 2009 to July 2010. The patients were enrolled from the HIV clinic and inpatient departments of Jinnah Hospital Lahore. Patients meeting the inclusion and exclusion criteria were subjected to a detailed history and clinical examination. Investigations were carried out where required. Treatment profile was also noted. The data was recorded on a pro forma and was analyzed later.

Results A total of sixty two patients were enrolled in the study. There were 49 (79%) males and 13 (21%) females. The age range was 4 to 58 years. Cutaneous manifestations were seen in 51 (82%) patients. The most common cutaneous findings were fungal infections seen in 33.87% patients, followed by viral infections (29.03%), xerosis (22.58%) and bacterial infections (12.9%). Less common manifestations were photosensitivity, scabies and hyperpigmentation. CD4 cell count was found to be more than $455x10^9$ in 22 patients while it was less than $455x10^9$ in 40 patients. Skin manifestations were found in 19 (86.36%) patients with a high count and in 33 (82.5%) patients with a low count.

Conclusion Cutaneous manifestations are commonly seen in patients of HIV infection.

Key words
Cutaneous manifestations, HIV, CD4 count

Introduction

HIV infection is a challenge faced by the entire world. It is a devastating human crisis that has affected many countries. In the year 2009 a total of 33.3 million people were found to be HIV positive all over the world.[1] Sixteen thousand new HIV cases are being reported daily.[2] Countries in Asia are now experiencing the fastest growing epidemics and Pakistan is amongst them.HIV infection is not a rarity anymore in our country and the incidence is alarmingly on the rise. According to statistics 96000 people are suffering from HIV/AIDS in our country.[3] It has been seen that 80-95% of HIV infected patients present with some kind of dermatological problem.[4] The normal CD4 cell count in adults ranges from 500-1500 cells per mm.[3]Alteration in the immune status of the patient along with a low CD4 count has been found to be associated with an increased

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frequency of cutaneous manifestations[5] but this relation is debatable.[6,7] These cutaneous disorders are seen in all stages of infection and range from opportunistic infections and inflammatory dermatoses to cutaneous malignancies. They may also be due to the drug treatment given to the patient. The dermatological manifestations are usually severe, have atypical presentations, and are sometimes difficult to treat. They result in significant morbidity and maybe cosmetically disfiguring resulting in a great deal of psychological stress and poor quality of life for the patient.

Knowledge and awareness regarding the spectrum of cutaneous features is important for the clinicians as it is helpful in timely diagnosis and prompt treatment. It can also be helpful in monitoring the immune status of the patient. Special clinics for HIV are present in our country but proper referrals to dermatologists are lacking. The aim of our study was to observe the pattern and frequency of mucocutaneous manifestations in HIV patients in our setup and to see any correlation with the CD4 cell counts.

Patients and methods

This descriptive cross-sectional study was conducted in the department of dermatology, Jinnah Hospital, Lahore from July 2009 to July 2010. Cases were enrolled from the HIV clinic and inpatient departments of the hospital. Patients having HIV seropositivity by ELISA were included in the study. Patients having any other co-morbid condition, like chronic liver disease, chronic renal disease, diabetes mellitus and collagen vascular disease were excluded from the study.

An informed consent was taken. All cases fulfilling the inclusion and exclusion criteria were subjected to a detailed history and thorough clinical examination. The patients were inquired about I/V drug abuse and multiple sexual contacts. Relevant investigations regarding different dermatoses such as fungal scraping and Tzanck smear were also carried out where necessary. Patient's CD4 cell count was recorded. Treatment profile was noted. The data was entered in a comprehensive pro forma and later analyzed. Frequencies of various cutaneous manifestations were recorded. A p value of <0.05 was considered statistically significant.

Results

A total of sixty two patients were enrolled in the study. There were forty nine (79%) males and thirteen (20.97%) females. The male: female ratio was 4:1. The age range was from 4 to 58 years. Mean age was 35.73 (SD±10.14). The majority of patients belonged to the age group of 31- 40 years.

Eighteen males (37%) gave history of I/V drug abuse, fifteen (31%) gave history of multiple sexual contacts, while nine (18%) patients gave history of both I/V drugs and sexual contact. None of the females revealed any such history.

Fifty one (82%) patients had one or more skin manifestation (**Table 1**). Fungal infections were most frequently observed (33.9%). The most common fungal infection was oral candidiasis, (14.5%) followed by onychomycosis (12.9%). Viral infections were seen in 29.0%. Most frequently observed viral infection was herpes zoster (11.3%) followed by viral warts (8.1%). Bacterial infections were found in 12.9% cases, most commonly folliculitis. A generalized xerosis was seen in 22.6% patients. Less frequent manifestations were photosensitivity, scabies and hyperpigmentation (**Table 2**).

Table 1 Frequency of skin manifestations according to gender (n=62)

	Cutaneous manifestations		
	One	*> One*	*Nil*
Male	14	26	9
Female	6	3	4
Total	20	29	13

Table 2 Frequency of mucocutaneous manifestations in HIV positive patients.

Cutaneous features	*N (%)*
Fungal infections	
Oral candidiasis	9 (14.5)
Onychomycosis	8 (12.9)
Tinea corporis	1 (1.6)
Tinea faciei	1 (1.6)
Viral infections	
Herpes zoster	7 (11.3)
Warts	5 (8.1)
Herpes simplex	2 (3.2)
Bacterial infections	
Furunculosis	5 (8.1)
Syphilis	2 (3.2)
Stye	2 (3.2)
Acute paronychia	1 (1.6)
Ecthyma	1 (1.6)
Infestations	
Scabies	4 (6.5)
Inflammatory and other dermatoses	
Xerosis	14 (22.6)
Photosenstivity	5 (8.1)
Hyperpigmentation	4 (6.5)
Prurigo	2 (3.2)
Lichen planus	1 (1.6)
Seborrheic dermatitis	1 (1.6)
Angular cheilitis	1 (1.6)

Out of the total 14 (22.6%) patients were on antiretroviral therapy while 48 (77.4%) patients were not on any antiretroviral drugs. Frequency of cutaneous manifestations was 85.7% in patients with antiretroviral therapy and 81.3% in those not on anti retroviral drugs (p>0.05).

The patient's CD 4 count was also recorded. Twenty two (35.5%) cases had a count more than $455x10^9$/l while forty patients (64.5%) had a count of less than $455x10^9$/l. Nineteen (86.5%) patients with a high CD 4 count and 33 (82.5%) patients with a low CD 4 count had one or more skin manifestation ($p > 0.05$).

Discussion

Dermatological manifestations are common in patients of HIV. They may occur anytime during the course of disease. In the primary stage of infection a generalized morbilliform eruption may occur while later on the disease is characterized by several infectious, inflammatory and neoplastic dermatoses.

The epidemiological data of our study showed that males were predominantly affected with a male to female ratio of 4:1.This was comparable to different studies that show that males are primarily affected by this life threatening disease.[8] The commonest age group in our study was 31-40 years; this was same as a previous study conducted in India showing the age group of 30-39 years.[9]

HIV is spread through sexual contact with an infected person, contact or transfusion with infected blood, from mother to child and sharing contaminated needles and syringes. The most frequent mode of transmission in our study was I/V drug abuse (37%), followed by heterosexual contact (31%), unlike other studies reporting 35% homosexual contact, 27% use of I/V drugs and 24% heterosexual contact.[10] This was probably because of the reluctance of patients to reveal proper information due to social and cultural differences of our region.

Cutaneous manifestations were present in 82% of our patients. This was similar to the findings of Jeffery *et al*.[11] 86% and Pitche *et al*.[12] 82.5%. In our study infectious and non-infectious manifestations were recorded. The most common infections were fungal (33.9%), oral

candidiasis (14.5%) being the most frequent. A study conducted by Rosemary *et al.*[10] showed similar results. Other studies have revealed a higher incidence of oral candidiasis, up to 40.63%.[13]

Viral infections were also observed. Herpes zoster (11.3%) involving multiple dermatomes. Multidermatomal herpes zoster has been seen in a previous study by Shobana *et al.*[14] with a frequency of 6%. Furunculosis was observed in 8.1% patients. It responded poorly to antibacterial therapy and was recurrent. Studies have revealed frequencies ranging from 3.3%[10] to 25%.[13] We recorded cases with scabies (6.4%), near to the frequency of Shobana and colleagues[14] (5%). No case of crusted scabies was found unlike reported elsewhere in literature.[3]

Out of the various non-infectious causes, xerosis associated with pruritus was the most frequent finding, observed in 22.6% patients. Xerosis has been noted as a common finding in various studies ranging from 20%[6] to 50%[13] in HIV positive patients. This could be due to depletion of the peptidergic innervation affecting the nutrient supply of the upper dermis and diminished substance P innervation of the sweat glands affecting their secretory activity.[15]

Several studies have reported atypical, extensive seborrheic dermatitis in patients ranging from15.62%[13] to 83%.[16] The cause of seborrheic dermatitis is unknown, but many investigators believe that alteration in the immune system in HIV-AIDS, changes the response of the skin to the yeast, *Pityrosporum ovale*, leading to a higher rate of infection.[17] In our study, only two (3.2%) such cases were recorded. This difference could be due to the small sample size of our study.

Photosenstivity, hyperpigmentation and lichen planus were also rarely observed in our study. We recorded pruritic papular eruption in one case (1.6%) while in a study conducted in Thailand, Wichai and colleagues[8] had this as the most common cutaneous finding. Another study in Iran reported an incidence of 36.7%.[1] These variable results could be due to racial and ethnic differences of our region.

Initiation of antiretroviral drug therapy in patients of HIV has resulted in many adverse cutaneous reactions.[19] In the present study no drug reaction was seen in any patient. A comparison was made of cutaneous manifestations in patients on antiretroviral therapy with those without antiretroviral treatment but no significant difference was seen ($p>0.05$).

When patients with high and low CD4 cell counts were compared no association was found between CD4 cell count and frequency of skin diseases ($p>0.05$), the same as reported by Wichai *et al.*[8] and Coopman *et al.*[20] However, others have reported an inverse relation between CD 4 count and incidence and severity of skin diseases.[21] Hence this correlation is still controversial.

Conclusion

Skin disorders are highly prevalent in patients of HIV; however, the pattern of skin diseases varies from region to region. All patients of HIV should be examined thoroughly for cutaneous features. Our study did not show any correlation between CD 4 cell counts and cutaneous manifestations. Various dermatoses may be seen with normal CD4 counts in patients of HIV infection.

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