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Research Article

### DERMATOLOGICAL LESIONS IN HIV POSITIVE PATIENTS

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#### ABSTRACT

The skin lesions that occur in HIV infected patients are well described in Western literature but there is a paucity of information from the Indian subcontinent. The pattern of skin lesions in Indian patients with HIV infection may be different from that in the West. Since the topography of the disease may be different, the present study was undertaken to study the type and pattern of muco-cutaneous lesions observed in HIV positive patients. This prospective observational study, which included 150 HIV seropositive adult patients with muco-cutaneous lesions, was carried out at tertiary care center Hospital from March 2007 to October 2008. Out of the 132 patients studied, 91 (69%) had one dermatoses. A total of 194 dermatoses were observed in the 132 HIV positive patients, studied with a mean of 1.5 dermatoses per patient. 41 (31%) were fungal dermatoses, 36 (27.2%) were viral, 4 (3%) were parasitic and 2 (1.5%) were bacterial. Scar of herpes zoster was observed in 17 (12.9%) of patients, which was the commonest manifestation of viral infection in HIV positive patients. The present study concludes that muco-cutaneous disorders are common manifestations of HIV infection. The presentation of muco-cutaneous disorders in association with HIV may be atypical and they may serve as markers of HIV infection. Further studies in India are needed to evaluate muco-cutaneous disorders as markers of disease progression in HIV infected patients.

**Keywords:** Muco-cutaneous disorders, HIV, India, Dermatological lesions, Patients.

#### INTRODUCTION

The skin manifestations of HIV infection may be classified as infectious or non-infectious. Opportunistic infectious disease that involves the skin may be caused by viral, bacterial, fungal or protozoal pathogens. Non-infectious skin disorders are also commonly associated with HIV infection and may be induced by external agents, such as drugs, or be endogenous like nonspecific pruritus<sup>1</sup>.

Evidence of early muco cutaneous signs in HIV infection is rapidly accumulating and their value as predictive clues must be determined<sup>2</sup>. Skin diseases like seborrhic dermatitis and cutaneous infections with bacteria, fungi and viruses are described in increasing frequency in AIDS patients and have been suggested as early "warning" signs of HIV infection. Furthermore, several skin diseases are classified by the Centre for Disease Control and Prevention as AIDS defining illnesses<sup>3</sup>, and others may serve as markers of disease progression.

Given the relative ease of examination of the skin and because most skin diseases are amenable to diagnoses by inspection and biopsy, evaluation of skin remains an important element

of the diagnostic process in HIV infected patients. In addition these conditions are often debilitating from the standpoint of function and cosmesis. With the advent of newer more effective treatments for the opportunistic infections, and now for HIV infection itself, it is important to review these conditions and to examine their changing incidence and patterns of presentation<sup>4</sup>.

The skin lesions that occur in HIV infected patients are well described in Western literature but there is a paucity of information from the Indian subcontinent. The pattern of skin lesions in Indian patients with HIV infection may be different from that in the West<sup>5</sup>. Since the topography of the disease may be different, the present study was undertaken to study the type and pattern of muco-cutaneous lesions observed in HIV positive patients attending this Government Tertiary care Hospital, a referral centre in the region of Marathwada.

#### MATERIALS AND METHODS

This prospective observational study, which included 150 HIV seropositive adult patients with muco-cutaneous lesions, was carried out at tertiary care center Hospital from March 2007 to October 2008. The study population included HIV

seropositive adult patients attending the outpatient department as well as indoor patients of this Hospital.

**Inclusion Criteria:**

All HIV positive patients who had one or more muco-cutaneous lesions at the time of presentation were included under the study. Out of 150 patients such 132 patients were selected who were found to have muco-cutaneous lesions at the time of presentation. Those patients who were HIV positive but did not show any muco-cutaneous lesion at the time of presentation were **excluded** from the study.

A relevant, related and specific clinical history was taken from each patient and thorough physical examination was performed under the supervision of clinical experts, dermatologist who himself is ART Medical officer, one more

dermatologist who is professor of dermatology, with emphasis on muco cutaneous lesions. The clinical diagnosis was supplemented with laboratory procedures like microscopy (KOH preparation, Tzanck smear) and Biopsy wherever applicable. Clinical history, examination and laboratory investigations for all patients were recorded in a prescribed proforma.

The results were tabulated and analysed by Statistician, and associations between variables were analyzed with Independent samples T-test. P-values less than 0.05 were considered significant. Only those patients who fully understood the objectives of the study and agreed to participate were eventually recruited into the study after taking their written consent in proforma.

**RESULTS**

**Table 1: Number and Various types of dermatoses occurring in HIV positive patients**

Number of dermatoses	Number of patients (N=132)			Chi square
	Male (n=82)	Female (n=50)	Total (n=132)	
One	50 (60.9%)	41 (82%)	91 (69%)	X <sup>2</sup> = 7.1147; p<0.01; significant
Two	31 (37.8%)	8 (16%)	39 (29.5%)	
Three	1 (1.2%)	1 (2%)	02 (1.5%)	
Type of dermatoses	Infectious	Non-infectious		
	46 (38.6%)	37 (49.3%)	83 (42.7%)	X <sup>2</sup> = 1.73; p>0.5; NS
	73 (61.3%)	38 (50.6%)	111 (57.2%)	

Out of the 132 patients studied, 91 (69%) had one dermatoses. A total of 194 dermatoses were observed in the 132 HIV positive patients, studied with a mean of 1.5 dermatoses per patient.

**Table 2: Infectious dermatoses in HIV positive patients**

Sr No.	Type of infection	Number of dermatoses		
		Male	Female	Total
1	Bacterial	01 (1.2%)	01 (2%)	02 (1.5%)
2	Fungal	21 (25.6%)	20 (40%)	41 (31%)
3	Viral	21 (25.6%)	15 (30%)	36 (27.2%)
4	Parasitic	03 (3.65%)	01 (2%)	04 (3%)
TOTAL		46 (56%)	37 (74%)	83 (62.8%)

(X<sup>2</sup>= 1.06; P>0.05; Not significant)

41 (31%) were fungal dermatoses, 36 (27.2%) were viral, 4 (3%) were parasitic and 2 (1.5%) were bacterial.

**Table 3: Infectious dermatoses in HIV positive patients**

Type of dermatoses	Sub types	Male	Female	Total	Chi square
Bacterial	Furuncle	0 (0%)	01 (1.2%)	1 (0.75%)	X <sup>2</sup> = 4.78; P>0.05; Not significant
	Secondary infection	01 (1.2%)	0 (0%)	1 (0.75%)	
Fungal	Oropharyngeal	14 (17%)	13 (26%)	27 (20.5%)	
	Vaginal	-	06 (12%)	06 (4.5%)	
	Balanoposthitis	01 (1.2%)	-	01 (0.7%)	
	Tinea Pedis	01 (1.2%)	00	01 (0.7%)	
	Tinea corporis	02 (2.4%)	01 (2%)	03 (2.27%)	
	Tinea versicolor	01 (1.2%)	00	01 (0.7%)	
Viral	Onychomycosis	02 (2.4%)	0	02 (1.5%)	
	Herpes zoster	01 (1.2%)	02 (4%)	03 (2.27%)	
	Herpes genitalis	01 (1.2%)	01 (2%)	02 (1.5%)	
	Herpes labialis	0 (0%)	01 (2%)	01 (0.7%)	
	Scar of herpes zoster	15 (18%)	02 (2%)	17(12.9%)	
	Warts	03 (3.6%)	05 (10%)	08 (6.06%)	
Parasitic	Molluscum contagiosum	01 (1.2%)	04 (8%)	05 (3.8%)	X <sup>2</sup> = 12.93; P>0.05, Not significant
	Scabies	03 (3.6%)	01 (2%)	4 (3.03%)	

Only two patients were observed to have bacterial dermatoses. One patient had furuncle, which on culture showed staphylococci, responded to antibiotics. Oropharyngeal candidiasis was observed in 27 (20.5%) patients was the most common fungal dermatoses. The striking feature of the above table is that, scar of herpes

zoster was observed in 17 (12.9%) of patients, which was the commonest manifestation of viral infection in HIV positive patients. The above table shows that, out of the 132 patients studied, only 4 (3.03%) of patients were observed to have scabies.

**Table 4: Non-infectious dermatoses in HIV positive patients**

Sr No.	Non infectious dermatoses	Number of patients		
		Male (n=82)	Female (n=50)	Total (n=132)
1	Xerosis	47 (57.3%)	24 (48%)	71 (53.9%)
2	Seborrhic dermatitis	03 (3.65%)	01 (2%)	04 (3.03%)
3	Generalized hyper pigmentation	01 (1.2%)	01 (2%)	02 (1.51%)
4	Stevens Johnson Syndrome	03 (3.65%)	01 (2%)	04 (3.03%)
	Epidermolysis	01 (1.2%)	0 (0%)	01 (0.75%)
	Maculo-papular rash	04 (4.9%)	02 (4%)	06 (4.5%)
	Total	08 (9.75%)	03 (6%)	11 (8.3%)
5	Papular pruritic rash	03 (3.65%)	0 (0%)	03 (2.27%)
6	Apthous Ulcers	0 (0%)	01 (2%)	01 (0.75%)
7	Hair changes	03 (3.65%)	05 (10%)	08 (6.06%)

( $\chi^2 = 6.8$  at 6 df;  $P > 0.05$  at 5% l.s. – Not significant)

Table 4 shows that xerosis 71 (53.9%) was the most common non-infectious dermatoses, followed by drug allergy 11(8.3%). One female patient was observed who had drug induced thrombocytopenic purpuric rash.

## DISCUSSION

Among the numerous symptoms of HIV disease, muco cutaneous manifestations remain one of the most important clinical markers. The skin, being the most visible and the largest organ, often shows early manifestations of the internal disease; this is true for HIV disease.

### Clinical Data:

In the present study a total of a total 200 patients were examined. 194 dermatoses were observed in the 132 HIV positive patients studied with a mean of 1.5 dermatoses per patient. Of the total dermatoses, 42.7% were infectious dermatoses while 57.2% were non-infectious. 69% patients were found to have only one dermatoses, while 29.5% patients had two dermatoses. Bhandary et al<sup>6</sup> reported 68 dermatoses in 32 HIV positive patients with a mean of 2.1 dermatoses per patient. Similarly Uthaykumar et al<sup>7</sup> observed 331 dermatoses in 151 HIV positive patients with a mean of 2.2 dermatoses per patient. They reported 38 (25.1%) patients with one dermatoses, 72(47.7%) patients with two dermatoses and 28 (18.5%) patients with three dermatoses.

### Candidiasis:

Candidial infection (25%) was observed to be the most common infectious muco-cutaneous disorder in the present study. Oropharyngeal candidiasis was (20.5%) was the most common fungal dermatoses. In Malaysia Jing et al<sup>8</sup> also observed Oral candidiasis (35.9%) to be the most common infectious muco-cutaneous lesion in HIV positive patients. Similar prevalence of oral candidiasis (45%) in HIV positive patients was reported by Kumaraswamy et al<sup>5</sup> in south India. In another Indian study, Shobhana et al<sup>9</sup> also concluded that Oral candidiasis was the most common infectious muco-cutaneous lesion in HIV positive patients.

### Xerosis:

Xerosis (53.9%) was the most common non-infectious dermatoses in the present study. Jing et al<sup>8</sup> reported a similar prevalence of xerosis (27.6%). Bhandary et al<sup>6</sup> observed a higher prevalence of xerosis (50%) and reported it to be the most common non infectious muco-cuaneous lesion in their study. Similarly Criton et al<sup>10</sup> observed dryness of skin in all the 60 HIV positive patients studied by them.

### Dermatophytosis:

The other common fungal dermatosis that was observed in the present study was Dermatophytosis (5.30%). Shobhana et al<sup>9</sup> reported a slightly higher prevalence of dermatophytosis (13%) as compare to the present study. This might be because of earlier registration of cases with ART centers and easy availability of prophylaxis against opportunistic infections. They also reported a combination of tinea at two or more sites in 30% of the patients with dermatophytosis. Jing et al<sup>8</sup> reported a lower prevalence of dermatophytosis (9.7%) in HIV positive patients. In their study they noted that some of their patients might have forgotten that they has skin infections or their doctors might not have informed them of some of the muco cutaneous manifestations occurring before their data was collected. They considered this as an explanation for the low prevalence of infectious dermatoses in their study group. Bhandary et al<sup>6</sup> reported a higher prevalence of dermatophytosis (37.5%) in their study of 32 HIV positive patients. They also observed extensive tinea corporis that lacked the classic annular morphology in 75% of the patients with dermatophytosis. But Healy et al<sup>11</sup> did not find any significant difference in the HIV positive and the control group for the prevalence and the severity of tinea.

### Herpes Infection:

In the present study 03 (2.27%) patients were found to have Herpes zoster, 02 (1.5%) patients with Herpes genitalis, 01 (0.7%) patient with herpes labialis, 1 (0.7%) with Herpes zoster ophthalmicus were observed. Jing et al<sup>8</sup> reported a prevalence of herpes infection (3.5%) in HIV positive patients

which is similar to the present study. However they reported a lower prevalence for most of the infectious disorders and attributed it to the reason discussed above. Panda et al<sup>12</sup> reported a prevalence of 1.1% for herpes zoster in HIV infected persons. They reported this prevalence from the clinical surveillance carried out by them in a group of HIV positive intravenous drug abusers in Manipur, India. The present study was a hospital based study and it included only those HIV positive patients who had muco-cutaneous lesions. So the prevalence of herpes zoster in HIV positive patients is higher in the present study as compared to that reported by them. Dandvate et al<sup>13</sup> in their study of natural history of herpes zoster, observed that the clinical presentation of herpes zoster in HIV positive patients were in the form of involvement of trigeminal nerve, recurrent episodes, bullous lesions and more complications of secondary infection and post-inflammatory scarring. In the present study two patients with recurrent herpes zoster were observed one female with herpes zoster ophthalmicus and another with herpes zoster in maxillary division of trigeminal nerve. Other patients may develop recurrence in future, for that a longer period of follow will be required. However the other characteristic features described of herpes zoster in HIV positive patients were observed in the present study. The prevalence of herpes genitalis 3.4% in HIV positive patients as reported by Valle et al<sup>2</sup> in Finland is comparable with that observed in the present study (i.e. 2 cases (1.5%).

#### **Seborrheic dermatitis:**

Majority of patients with seborrheic dermatitis 04 (3.03%) in the present study had typical morphology compared to that described in an immune competent host. Two (1.5%) patients were observed with extensive, thick and greasy lesions of seborrheic dermatitis. Criton et al<sup>10</sup> reported a similar prevalence of seborrheic dermatitis in his study at referral hospital in Central Kerala. i.e. 6.7%. Similarly Spira et al<sup>14</sup> observed seborrheic dermatitis in 9.1% patients with HIV infection. Valle et al<sup>2</sup> observed worsening of seborrheic dermatitis in three patients in parallel with the increasing immune suppression. In India Bhandary et al<sup>6</sup> reported a prevalence of 15.6% of seborrheic dermatitis in a group of HIV positive patients. They also observed HIV positive patients with atypical, extensive and rapidly evolving form of seborrheic dermatitis. Thus the observed prevalence and the pattern of seborrheic dermatitis in the present study are comparable to that described in other studies.

#### **Warts:**

Warts were observed in 08 (6.06%) One patient presented with multiple dwarf veruccae vulgaris over both hands. One male with perianal warts (condyloma acuminata) was also observed. Jin et al<sup>8</sup> and Kumarswamy et al<sup>5</sup> reported a similar prevalence for warts in their study groups. Valle et al<sup>2</sup> observed a higher prevalence of warts in their study group. In this western study, the study population was a group of high risk individuals for HIV infection that predominantly included homosexuals. This can explain the large number of cases of peri anal and other genital warts observed by them. In their study, they also concluded that warts on face, hands and feet were significantly more often found in HIV positive group as

compared to controls. This peculiarity of the warts in HIV infected patients was observed in the present study as well.

#### **Hyper pigmentation:**

In the present study, 2 (1.51%) patients were observed with generalized hyper pigmentation of the skin predominantly involving the sun exposed parts of the body like face and extremities. Similar hyper pigmentation of the skin in 4% of patients was reported by Shobhana et al<sup>9</sup>. Jing et al<sup>8</sup> reported a very high prevalence of hyper pigmentation (35.9%) with similar features in a group of HIV positive patients in Malaysia. They did not find any clear reason to explain the high prevalence of generalized hyper pigmentation in their study group. The probable causes for hyper pigmentation presumed by them were medicines for treatment and prophylaxis, endocrine system disorders caused by HIV, sun exposure and other systemic illnesses occurring in HIV positive patients.

#### **Molluscum contagiosum:**

Molluscum contagiosum lesions observed in 5 (3.8%) patients in the present study were of typical morphology, but were multiple in numbers. Two (1.5%) patients with multiple molluscum lesions over the face, described as being characteristic of molluscum contagiosum in HIV positive patients, were also observed. Shobhana et al<sup>9</sup> observed similar prevalence of molluscum contagiosum (4%) in the 410 HIV positive patients studied by them. They also recorded 1 case of giant molluscum contagiosum, which is another peculiarity of molluscum contagiosum lesions observed in HIV infected patients. No case of giant molluscum contagiosum was observed in present study that comprised of a small study group as compared to their study population. Laxmisha et al<sup>15</sup> in their study of clinical profile of molluscum contagiosum, reported a higher prevalence of multiple, atypical and giant mollusca in HIV positive patients. The probable explanation for the above observation is that their study was focused on patients with molluscum contagiosum and so they observed more patients with molluscum contagiosum, as compared to the present study. They also noted that multiple, atypical extra genital lesions are markers of HIV infection.

#### **Drug Allergy:**

Increased prevalence of allergic reaction to various drugs in HIV infected patients is known. 11(8.3%) patients with drug allergy were observed in the present study. Four patients with severest form of drug allergy that is Steven Johnson syndrome were observed. Out of them 1 patient had drug reaction to co-trimoxazole, while three were on ART, nevirapine based regime.

One patient developed Toxic epidermal necrolysis (TEN) after consumption of co-trimoxazole, while 6 patients had maculapapular rash all over body after receiving ART. One female patient developed thrombocytopenia after taking ART and showed thrombocytopenic purpuric rash all over body, which disappeared after receiving platelet transfusion.

Shobhana et al<sup>9</sup> reported a similar prevalence for drug reaction in their study group. They also reported one patient with erythema multiforme secondary to nevirapine. In Washington, Smith et al<sup>16</sup> reported a higher prevalence of drug eruption

(18%) in their study on cutaneous findings in their HIV positive patients. They also observed that the percentage of the patients with drug eruptions increased with the increasing Walter Reed stage. However they observed only one case of Stevens Johnson Syndrome in their study. In Western countries, more number of HIV positive patients is exposed to various drugs, including anti-retroviral drugs, as a part of treatment and prophylaxis. This might be the reason for the high prevalence of drug reaction in HIV positive patients reported in Western countries.

#### **Papular Pruritic eruption:**

In the present study three (2.27%) patients were observed to have papular pruritic eruption over upper extremities and trunk. Shohana et al<sup>9</sup> reported a similar prevalence of papular pruritic eruption in a group of HIV positive patients in Kolkatta, India. Ajithkumar et al<sup>17</sup> studied papular pruritic eruption in HIV infected patients and observed that these patients had a significantly lower CD4 count, as compared to the normal healthy controls. In the present study, the relation of the papular pruritic eruption to the degree of immune suppression was not studied.

#### **Scabies:**

In the present study 4 (3.03%), patients were observed to have scabies infection. They had typical involvement of inter triginous zone. Giant keratotic lesions like those seen in Norwegian scabies, described as being characteristic of scabies in HIV infected persons, were not present in these patients. Kumaraswamy et al<sup>5</sup> reported a similar prevalence of scabies in a group of HIV positive patients of south India. However, in their big study group of 833 HIV positive patients, they also observed three patients with Norwegian scabies.

### **CONCLUSION**

The present study concludes that muco-cutaneous disorders are common manifestations of HIV infection. The presentation of muco-cutaneous disorders in association with HIV may be atypical and they may serve as markers of HIV infection. Further studies in India are needed to evaluate muco-cutaneous disorders as markers of disease progression in HIV infected patients.

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