

# Spectrum of Cutaneous Disorders in HIV Infected Patients: A Hospital Based Study

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**Abstract:** Cutaneous disorders occur more frequently as HIV infection advances and immune function deteriorates. The present study was to find the prevalence and pattern of cutaneous disorders in HIV infected patients, and associated sexually transmitted diseases and systemic manifestations. One hundred and eighty five (185) HIV seropositive patients who were attending the Dermatology and STD Out Patient Department or admitted in Infectious Disease ward at JIPMER, Pondicherry from September 1998 to June 2000 were screened for mucocutaneous disorders. Ninety (48.6%) cases were found to have mucocutaneous disorders. There were 64 (71.1%) males and 26(28.9%) females. Male to female ratio was 2.5:1. Forty-five (50%) of our patients were in the age group of 21-30 years. The mean age of our patients was 28 years (range 2 months to 60 years).

Heterosexual route was the most common mode of acquisition of HIV infection and was observed in 71 (81.6%) cases. Out of 90 cases recruited into our study, 58 (64.4%) cases were in the HIV Group IV (AIDS) followed by 18 (20%) cases in HIV Group II and 14 (15.6%) cases in Group III. Mucocutaneous fungal infections were common and consisted of candidial infections in 74 (82.2%) cases, dermatophytic infections in 41 (45.6%) and pityrosporum infections in 25(27.8%) cases. Other dermatological disorders included xerosis in 12(13.3%) cases followed by pyoderma in 11 (12.2%) cases. Amongst STD's, human papilloma virus infections were noted in 17 (18.9%) cases followed by herpes simplex infections in 13(14.4%) cases. amongst the systemic disorders, pulmonary tuberculosis was observed in 30 (33.3%) patients. The discussion in this article is mainly focussed on mucocutaneous fungal disorders which are common in HIV infected patients.

**Key Words :** *HIV infection; Cutaneous Disorders; Fungal Infections*

## Introduction

Cutaneous disorders occur more frequently as HIV infection advances and immune function deteriorates. They affect between 80% and 95% of HIV infected patients according to the literature<sup>1-3</sup>, occurring at any time in the course of infection. Skin is often the first and only organ affected during the course of HIV disease. Cutaneous disorders during HIV infection are numerous.<sup>4-10</sup> Some have drawn attention because of their onset, indicate some of the Centre for Disease Control and Prevention (CDC) acquired immunodeficiency syndrome (AIDS) clinical categories, e.g. oral candidiasis, zoster, herpes simplex, oral hairy leukoplakia and Kaposi's sarcoma<sup>11</sup>, but most have been documented solely in case reports. In the context of HIV infection, cutaneous disorders can present with particular clinical manifestations: unusual anatomical sites, increased severity, treatment failure and unusual clinical appearance.<sup>12</sup> Moreover, it is argued that some cutaneous disorders reflect the progression of HIV disease<sup>4,6</sup>, but this relationship is still controversial.<sup>2,10</sup>

The present study was to find the prevalence and pattern of cutaneous disorders in HIV infected patients, and associated sexually transmitted diseases and systemic manifestations.

## Material and Methods

In this study, all HIV seropositive patients (by double ELISA method) who were attending the Dermatology and STD Out Patient Department or admitted in infectious disease ward at JIPMER, Pondicherry from September 1998 to June 2000 were screened for

cutaneous disorders. Those found to have cutaneous disorders were recruited for this study. A detailed history including marital and sexual history was taken and these patients were subjected to a thorough physical examination, with particular reference to duration of the disease, site of involvement and morphology of the lesions. The clinical diagnosis was made and supplemented with laboratory procedures like microscopic examination (KOH preparation) and Gram staining in the side lab. Routine haematological, biochemical and radiological investigations were performed to rule out systemic involvement wherever felt necessary. The patients were staged according to the Center for Disease Control (CDC) classification system for HIV infection (1986)<sup>13</sup>. The mucocutaneous changes were recorded and correlated with various clinical parameters. Results were tabulated and analysed.

## Result

In this study, a total number of 185 HIV seropositive patients were screened for mucocutaneous disorders, of them 97 (52.4%) were admitted in the Infectious Disease Ward and 88(47.6%) were seen in the Dermatology and STD Out Patient Department, JIPMER, Pondicherry. Out of 185 patients, 90 (48.6%) cases were found to have mucocutaneous disorders. There were 64(71.1%) males and 26(28.9%) females. Male to female ratio was 2.5:1. Forty-five (50%) of our patients were in the age group of 21-30 years. The mean age of our patients was 28 years (range 2 months to 60 years). Three of our patients were in the age group of 2 months - 10 years. Sixty-six (73.4%) patients were married, 13(14.4%) were single and 11(12.2%) were widows. There occupations of our patients in decreasing order of frequency were laborers 43(47.8%), drivers 21(23.3%), housewives

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17(18.9%), commercial sex workers 5(5.6%) and miscellaneous 4(4.4%). All the drivers were promiscuous; nine (42.9%) of them gave histories of present and past sexually transmitted diseases. Heterosexual route was the most common mode of acquisition of HIV infection and was observed in 71(81.6%) cases. There were 3 children who acquired HIV infection through transplacental route. Seventy-four (85.1%) patients had multiple sexual partners and 13(14.9%) had single partner (most often their spouse). None of our patients in the study group gave the history of condom use.

Of the eighty-seven sexually active patients, 50(57.5%) had contact with commercial sex workers, extra-marital contacts in 20(22.9%), premarital contacts in 4(4.6%) and seventy-six (87.4%) of them were not aware of the HIV status of their partners. Out of 90 cases recruited into our study, 58(64.4%) cases were in the HIV Group IV (AIDS) followed by 18(20%) cases in HIV Group II and 14 (15.6%) cases in Group III (Table 1).

**Table 1. HIV staging and distribution of patients with dermatoses**

HIV Groups	No. (%)
Group I	0
Group II	18 (20)
Group III	14 (15.6)
Group IV	58 (64.4)
Total	90 (100)

Out of ninety patients, 68(75.6%) were *symptomatic*, the usual symptoms were, fever, loss of weight, loss appetite, cough with expectoration, soreness, burning sensation of mouth, loss of taste, dysphagia, odynophagia, retrosternal burning sensation, and diarrhoea. The usual signs were pallor, emaciation, generalized lymphadenopathy, oral thrush, and white discharge per vagina and genital ulcer. *Fungal infections* were the commonest and consisted of candidial infections in 74(82.2%) cases, dermatophytic infections in 41(45.6%) and pityrosporum infections in 25(27.8%) cases (Table 2). Cutaneous cryptococcosis was seen in one patient.

A total number of 235 disorders other than fungal infections were observed (Table 2). Of these, dermatological disorders were common (109) followed by systemic disorders (82). Forty-four (18.7%) cases were associated with STD's. Other dermatological disorders included xerosis in 12(13.3%) cases followed by pyoderma in 11(12.2%) cases. Amongst STD's, human papilloma virus infections were noted in 17(18.9%) cases followed by herpes simplex infections in 13(14.4%) cases. Among the systemic disorders, pulmonary tuberculosis was observed in 30(33.3%) patients. Ten (10) patients had meningitis of these 5 had tuberculous meningitis 2 cryptococcal meningitis; 5 died during the study period.

## Discussion

HIV infected patients present with various cutaneous dermatoses, fungal dermatoses being the most common.<sup>14</sup> Many a times, cutaneous and mucosal fungal infections may give a clue to the underlying HIV infections. Moreover, they are more extensive, often atypical and aggressive, sometimes life threatening.

Majority of our patients were in the age group of 21-30 years. The mean age of the patients in our study group was 28 years. Similar findings were observed by Singh et al<sup>14</sup> and Rosatelli et al<sup>15</sup>. Three of our patients were in the pediatric age group and presented with oral candidiasis, two of them had diaper rash, frequently relapsing after treatment. The present study had 64 males and 26 females, male to female ratio was 2.5:1 which was

**Table 2. Cutaneous disorders in HIV infected patients.**

Dermatological disorders	Disorders associated with HIV infection				No.
	No.	STD's	No.	Systemic disorders	
Candidiasis	74				
Dermatophytosis	41				
Pityrosporum infections	25				
Xerosis	24	HPV-anogenital	17	Pulmonary Tuberculosis	30
Pyoderma	19	Herpesgenitalis	9	Pneumocystis carinii pneumonia	5
Molluscum contagiosum	12	Scabies	7	Bronchopneumonia	5
Herpes zoster	9			Neurological insufficiency	7
Papular dermatitis of HIV	7	Syphilis	4	Meningitis	10
Insect bite reaction	6	Chancroid	1	Nephrotic syndrome	1
Drug reactions	6			Amoebic liver abscess	1
Psoriasis vulgaris	5				
Verrucae vulgaris (extensive)	4				
Herpes labialis	4				
Hidradenitis suppurativa	1				
Scleroderma	1				
Reiter's disease	1				
Others	10	Others	6	Others	23
Total	109	Total	44	Total	82

similar to that of Singh et al<sup>14</sup> (2.9:1) but lower than that of Rosatelli et al<sup>15</sup> (5.2:1).

The most common mode of spread of HIV infection in our study group was heterosexual contact (81.6%), as recorded in earlier study done from here.<sup>14</sup> This study showed a preponderance of laborers (47.7%) over drivers (23.3%), which is in contrast with that of Singh et al<sup>14</sup>; where more number of drivers (26.6%) than the laborers (18.6%) were recorded. This probably reflects a changing spectrum of the disease with more people from working class of society being affected.

The majority of our HIV positive patients presented during the advanced stage of HIV disease because they become symptomatic by this stage, 64% were in the HIV Group IV; 36% were in the early stages of HIV infection. This may be due to the relatively nonspecific nature of manifestations of acute HIV syndrome, particularly in India where other endemic diseases with similar complaints are more common.<sup>14,16</sup>

The prevalence of fungal dermatoses in HIV seropositive patients was found to be 48.6% which is higher than that of Hira et al<sup>17</sup> (23.7%). Rosatelli et al<sup>15</sup> (1997) in their study, observed fungal dermatoses in 22.6% of asymptomatic HIV infected patients and 32.4% of AIDS cases. The present study showed that 58(64.4%) cases were in HIV Group IV and 32(35.6%) in early stages, which is in contrast to that of Singh et al<sup>14</sup> where 40.3% of cases with mucocutaneous lesions were in Group IV and 32.1% in early stages of HIV infection. According to Rosatelli et al<sup>15</sup>, fungal diseases are more frequent in the AIDS group, this is consistent with our finding.

Oropharyngeal candidiasis is the most common opportunistic infection in patients with HIV infection; occurring in as many as 90% of HIV patients at some point during the course of HIV disease.<sup>18</sup> Oral candidiasis probably precedes other opportunistic infections. It may be a sign of transition to AIDS.<sup>14</sup> Kumarasamy et al<sup>19</sup> observed oral candidiasis in 46.7% of HIV infected patients. In our study, 34.05% (63 cases out of 185 HIV seropositive

patients) had oral candidiasis.

Dermatophytic infections are common in HIV infected patients. However, these skin diseases may not occur any more frequently in HIV positive patients than in comparable group.<sup>14</sup> Studies have been few and their results are contrary. In one survey for example, the prevalence of dermatophytosis was not significantly higher in a group of HIV infected patients (37%) than in a paired population of HIV homosexual males (32%). These investigators noted that superficial infections were more common in both groups of homosexual males than in the general population.<sup>20</sup> In another study, however, the prevalence of dermatophytosis was four times higher among HIV infected persons.<sup>10</sup> Kumarasamy et al<sup>19</sup> in their study from south India, found 8.0 percent of HIV infected patients having dermatophytosis. Its frequency was 22.2% in the present study, which is much higher than that of Rosatelli et al<sup>15</sup> (17.5%). This could be partially explained by the fact that the cases were also selected from Infectious Disease ward where mostly Group IV patients are admitted.

An increased colonization of *pityrosporum orbiculare* organisms have been reported in patients with HIV infection.<sup>19</sup> The occurrence of seborrheic dermatitis in-patients with AIDS may have some unique features. The presentation is often more explosive in onset, intensely erythematous and clinically more severe than that observed in patients without AIDS. In the present study, the prevalence of pityrosporum infection was 13.5% (25 cases). Of these, seborrheic dermatitis was seen in 14 of cases, tinea versicolor in 10 of cases and pityrosporum folliculitis in 4 of cases, which was less than that of Groisser et al<sup>21</sup> (80%) but more than that of Singh et al<sup>14</sup> (3.8%).

In HIV infection, 10%-20% of disseminated cryptococcosis patients present with cutaneous involvement.<sup>9</sup> In our study, cutaneous cryptococcosis was seen, in one patient. Previous study by Singh et al<sup>14</sup> from the same institute did not encounter any case of cutaneous cryptococcosis. In contrast, Moore et al<sup>22</sup> (10%-15%) and Murakawa et al<sup>23</sup> (6%) reported higher incidence of cutaneous cryptococcosis.

To conclude, a careful examination of skin and mucosae especially for mucocutaneous fungal infections may be highly rewarding in evaluating the stage of HIV disease.

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## BOOK REVIEW

**ICU Manual**, Dr. AP Jain, Dr. Rajnish Joshi, Dr. Ashish Goel, *Paras Medical Publisher, India, 2004, pages. Rs.225.00*

In this manual the authors provide a ready reference to the ICU staff at all levels. The details of etiology and pathophysiology are intentionally excluded leaving the content to focus on management issues. The authors have provided only the standard care and some of the senior readers may have reservations about some of the management priorities listed in the manual. A potential limitation is the manual's emphasis on medical emergencies. Problems that may develop in postoperative patients or in-patients admitted to the surgical intensive care unit (ICU) are not covered. The manual also does not include pediatric and obstetric issues.

The manual is organized into three sections that cover the Protocols in ICU, Management of emergencies, and Procedures in ICU. Its four appendixes contain important information on laboratory values, formulas, and infusion rates. The first section contains many important and common protocols, which are often needed in any ICU. The Protocols are brief, clear, and easy to read and apply. The next section on management of emergencies provides a brief and concise overview of the many diverse emergencies encountered

in the intensive care unit (ICU). There are chapters on organ systems like cardiac, respiratory, hepatic and renal systems. There are also chapters on metabolic, infective and poisoning emergencies. Each chapter is set up in an efficient and logical outline form with key points accented in boldface text to facilitate ease and speed of use. Algorithmic diagrams are included which give a clear and easily followed management plan. A bibliography of key references accompanies each chapter. Lastly there is a section on common bedside ICU procedures. All chapters in this section have an effective description of the methods and illustrations of the techniques. Resident intensivists will find these chapters invaluable when learning these procedures. There is much to recommend about this manual. The format is excellent for clarity of reading and a methodical approach is preserved throughout the manual. Despite some minor reservations about the limited topics, it is recommended as an excellent resource for its intended audience of medical students and intensivists.

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