

## A clinico-epidemiological profile of HIV positive patients with muco-cutaneous manifestations

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### Abstract

**Context:** Skin and mucocutaneous disorders are common in HIV infection and they may be the earliest manifestation of the disease. The spectrum of these disorders is wide and may vary in different regions.

**Aims:** To find the epidemiology of HIV positive patients with mucocutaneous manifestations in HIV positive patients.

**Setting and Design:** Retrospective, analytical.

**Materials and Method:** All the HIV positive cases reported at dermatology and STD clinic are enrolled in the study. Data source is OPD register of HIV positive patients from 1 Jan 2007- 31 Dec 2015. The data collected included age, gender, marital status, occupation, route of transmission, mucocutaneous manifestation, its duration and treatment.

**Results:** Total of 968 patients were found to be HIV positive in these 9 years out of which 148 patients (15.2%) had mucocutaneous manifestations. There are 104 (70%) males and 44 (30%) females in the study. Mode of transmission in 90 patients (60.81%) was by sexual exposure. Venereal diseases were seen in 34 patients (33%) with genital warts seen in 22 (14.86%) while non-venereal diseases were seen in 114 (67%) with herpes zoster seen in 46 (31.1%).

**Conclusion:** Mucocutaneous disorders are useful clinical predictors of the HIV infection as they may present with unusual and atypical manifestations. Recognising HIV related skin changes may lead to diagnosis of HIV infection in the early stages, allowing initiation of appropriate ART. A high level of suspicion for the HIV infection has to be kept in mind to prevent opportunistic infections and improving the patient's quality of life.

**Keywords:** HIV, Muco-cutaneous, clinico-epidemiology.

**Key Message:** Atypical Herpes zoster and muco-cutaneous candidiasis can be considered as early cutaneous marker of HIV positivity.

### Introduction

Human immunodeficiency virus infection and acquired immune deficiency syndrome (HIV/AIDS) is a spectrum of conditions caused by infection with the human immunodeficiency virus (HIV).<sup>(1)</sup> HIV is transmitted primarily via unprotected sexual intercourse (including anal and oral sex), contaminated blood transfusions, hypodermic needles, and from mother to child during pregnancy, delivery, or breastfeeding. Following initial infection, a person may experience a brief period of influenza-like illness. This is typically followed by a prolonged period without symptoms. As the infection progresses, it interferes more and more with the immune system, making the person much more susceptible to common infections like tuberculosis, as well as opportunistic infections and tumors that do not usually affect people who have working immune systems. Cutaneous manifestations of HIV disease may result from HIV infection itself or from opportunistic disorders secondary to the decline in immunocompetence from the disease.<sup>(2)</sup> Cutaneous disorders may be the initial signs of HIV-related immunosuppression. Recognizing HIV related skin changes may lead to the diagnosis of HIV infection in the early stages, allowing initiation of appropriate antiretroviral therapy. Many associated skin diseases are more severe in this group. With the use of

antiretroviral therapy, the incidence of some of these skin disorders has declined, but the incidence of drug reactions and other non-infectious skin eruptions has been enhanced.<sup>(3)</sup> A variety of neoplastic, infectious, and non-infectious diseases can produce cutaneous manifestations throughout the course of HIV disease. These manifestations may occur more frequently than in persons without HIV infection and may be less responsive to usual treatment.

### Aims and Objectives

To find the clinicoepidemiological profile and mucocutaneous manifestations in HIV positive patients attending skin OPD (Outpatient department) at a rural based tertiary care center.

### Materials and Method

This is a retrospective study conducted at a rural based tertiary care centre of Gujarat. All the HIV positive cases reported at Dermatology and STD clinic are enrolled in the study. Data source is OPD register of HIV positive patients from 1 Jan 2007- 31 Dec 2015. The data collected included age, gender, marital status, occupation, route of transmission, muco-cutaneous manifestation, its duration and treatment.

## Results

Out of total 69355 new patients attending skin OPD in the duration of 9 years, 148 patients (0.2%) were HIV positive with mucocutaneous manifestations. Total of 968 patients were found to be HIV positive in these 9 years out of which 148 patients (15.2%) had mucocutaneous manifestations. Table 1 shows the trends of HIV infection in last 9 years.

There are 104 (70%) males and 44 (30%) females in the study. Maximum patients were from the age group of 31-40 years (38.9%). Total 80 males (76.9%)

and 32 females (72.7%) were married. The demographic profile of 148 patients is shown in Table 2. Seventy four patients (50 %) in the study were labourers.

The various route of transmission of HIV infection is shown in Table 3. Mode of transmission in 90 patients (60.8%) was by sexual exposure.

Of the total studied patients, 34 patients had venereal disease and 114 patients had non venereal diseases. Table 4

**Table 1: The trend in prevalence of HIV in 9 years**

Years	Total HIV+ Males	Total HIV+ Females	Total	Total HIV+ Males with Mucocutaneous Involvement	Total HIV+ Females with Mucocutaneous Involvement	Total
2007	56	29	85	21	8	29(34.1%)
2008	71	44	115	13	8	21(18.2%)
2009	104	47	151	16	6	22(14.5%)
2010	83	33	116	14	3	17(14.6%)
2011	96	51	147	10	6	16(10.9%)
2012	75	30	105	10	5	15(14.3%)
2013	67	28	95	8	3	11(11.6%)
2014	51	20	71	6	3	9(12.7%)
2015	62	21	83	6	2	8(9.6%)
Total	665	303	968	104	44	148(15.3%)

**Table 2: Demographic profile of patients with muco-cutaneous involvement**

Age	Group	M:F	Total
0-20 Yrs	6	7	13(8.7%)
21-40 Yrs	53	30	83(56.1%)
41-60 Yrs	40	5	45(30.4%)
>60 Yrs	5	2	7(4.7%)
Total	104	44	148
Percent	70	30	100
Marital Status			
Males	80(76.9%)		
Females	32(72.7%)		
Occupation			
Labourers	74(50%)		
Housewives	42(28.4%)		
Drivers	26(17.6%)		
Others	6(4%)		

**Table 3: Routes of transmission**

Modes of Transmission	Number(%)
Sexual Exposure	90(60.8%)
Blood Transfusion	30(20.3%)
Mother to Child	16(10.8%)
Not Known	12(8.1%)

**Table 4: Various muco-cutaneous manifestations in HIV positive patients**

Diagnosis	Number	Percentage
Venereal Diseases: 34 Patients(23%)		
Genital Warts	22	14.9
Vaginal Candidiasis	8	5.4
Herpes Progenitalis	2	1.3
Gonorrhoea	1	0.7
Donovanosis	1	0.7
Infective Conditions: 106 Patients(71.6%)		
Herpes Zoster	46	31.1
Superficial Dermatophytosis	28	18.9
Oral Candidiasis	20	13.5
Molluscum Contagiosum	5	3.4
Eosinophilic Folliculitis	2	1.3
Scabies	2	1.3

Recurrent Folliculitis	2	1.3
Hidradenitis Suppurativa	1	0.7
Non-Infective: 8(5.4%)		
Lichen Planus	1	0.7
Psoriasiform Lesion	1	0.7
Seborrheic Dermatitis	6	4



Fig. 3



Fig. 1



Fig. 4



Fig. 2



Fig. 5

### Discussion

There are an estimated 2.39 million people living with HIV/ AIDS in India, with an adult prevalence of 0.31%.<sup>(4)</sup> Acquired immune deficiency syndrome (AIDS) is a chronic, infective disorder caused by a single stranded RNA retrovirus, human immunodeficiency virus (HIV).

Mucocutaneous diseases are among the first recognized clinical manifestations of AIDS. CD4 lymphocyte count, detection of viral load and viral culture are being used for the assessment of HIV disease. Given the relative ease of examination of skin, and because most skin disease are amenable to diagnosis by inspection and biopsy, evaluation of skin

remains an important tool in the diagnosis of HIV infection. However, studies pertaining to mucocutaneous manifestation in HIV/AIDS patients are mostly available from western countries. There are very few such reports from India.

Skin is the most commonly affected organ in patients with HIV infection. A wide range of infectious and non-infectious 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>(5)</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>(6)</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.

HIV infection is characterized by an insidious deterioration of the cellular immune system. The degree of immunodeficiency associated with HIV infection, as defined by the onset of opportunistic diseases, correlates closely with plasma CD4 T-cell counts. HIV is a multi-system infection affecting virtually every organ of the body. HIV infection produces a spectrum of illness from totally asymptomatic infection to AIDS. Skin is commonly involved in HIV infection and nearly 90% of patients with HIV infection have dermatological manifestations at some stage during the course of their disease.<sup>(7,8)</sup> The unusual histology of some of the diseases in AIDS may contribute to misdiagnosis. Thus, proper histological diagnosis of skin manifestations is very important as it may serve as the earliest manifestation to suspect a case of HIV infection. Infectious agents can produce skin lesions even though the classic organ of involvement for that the agent does not include the skin.

Out of total 148 patients, 70% were males and 30% were females with M:F ratio of 2.36:1 which was consistent with the finding by Kore et al.<sup>(4)</sup> This could be attributed to the increased awareness and occurrence of sexually transmitted diseases among male population leading to voluntary testing and detection.

Maximum patients were from age group of 21-40 years (56.1%) which is consistent with Kore et al.<sup>(4)</sup> where majority of the patients (56.1%) were in the age group of 21-40 years. This suggests that HIV is common in reproductive age group as its common mode of transmission is sexual exposure.

Total 80 males (76.9%) and 32 females (72.7%) were married. Jindal et al suggested that 63.15% of the total patients were married which was consistent to our finding.<sup>(9)</sup>

Majority of the patients (50%) are labourers and 28.4% are housewives. In contrast to our finding, Chopra et al found maximum patients (51.1%) patients

were housewives and 32.2% were labourers.<sup>(10)</sup> This finding in our study can be attributed to overall more patients from rural class group in our hospital.

Mode of transmission in 60.8% patients is by sexual exposure. Kore et al<sup>(4)</sup> and Chopra et al<sup>(10)</sup> found 89% and 86.7% patients having sexual mode of transmission respectively which is higher as compared to our study. However we reported a higher rate of transmission through blood transfusion (20.3%) as many of the female patients gave history of blood transfusion during their pregnancy as anemia is very common in our setting.

As per our study, the most common cutaneous manifestations was herpes zoster in 31.1%, oral candidiasis in 13.5% patients. According to Chopra et al,<sup>(10)</sup> the most common infectious mucocutaneous lesions in the HIV/AIDS patients were oral candidiasis (32.2%) with herpes zoster in 13.3%.

Due to immunosuppression, the HIV seropositive persons have multiple and widespread cutaneous and mucocutaneous lesions, whereas in immunocompetent patients, the lesions are localized and are mostly of the single type. The co-infection of HIV with candida may be an important exogenous factor that may influence the severity and the rate of the disease progression in HIV infected individuals.<sup>(11)</sup> Oropharyngeal candidiasis has been reported to occur in from 50-95% of all the HIV positive persons at some point during their progression to full-blown AIDS.<sup>(12)</sup> A comparative study on the carrier state of candida and its speciation in the oral flora among healthy individuals, in persons with diabetes mellitus and in HIV positive individuals was done by other workers and they found a higher carriage rate(54%) in the HIV individuals as compared to that in the other two groups.<sup>(13)</sup>

The ulcerative and the non ulcerative genital diseases in HIV hold importance, as they share a common mode of transmission with HIV. In the current study, the incidence of genital herpes was 1.3%, whereas Jing W et al reported it to be 5.5%.<sup>(14)</sup>

Herpes zoster can occur early in the course of the HIV disease and it generally precedes the other skin manifestations of the HIV disease. In the patients with HIV, it can present with necrotizing ulcers in a multi-dermatomal pattern, it can last longer than the usual 2-3 weeks, and it can heal, leaving prominent scars.<sup>(15)</sup> We encountered severe and multi-dermatomal involvement in 10.8% of our patients with herpes zoster.

In this study, genital warts were present in 14.9% patients, which was twice as compared to the findings of Rad F et al (7.1%),<sup>(16)</sup> whereas Thompson et al reported them to be present in 6% patients.<sup>(17)</sup> However, we did not come across any abnormal clinical presentations of these STDs or any other mucocutaneous disorders in these HIV infected cases.

Seborrheic dermatitis affected 4% of patients which was low compared to findings reported by Sen et al. (8.5%).<sup>(18)</sup> Seborrheic dermatitis is one of the

common non infectious skin conditions in India, with a prevalence rate of 8% to 21% in HIV positive patients.<sup>(5)</sup> It is found in up to 40% of the seropositive patients<sup>(19)</sup> and in up to 80% of the patients with AIDS as compared to its incidence in 3% of the seronegative population.<sup>(20)</sup> However we did not come across such a finding.

The incidences of dermatophytosis and scabies were 18.9% and 1.3% each in our study, whereas they were reported to be 8% (dermatophytosis) BU Kumaraswamy et al<sup>(21)</sup> and 4% (scabies) Thompson et al.<sup>(17)</sup> One patient of scabies had a severe crusted form which could be considered as an opportunistic infection of AIDS.

### Conclusion

Mucocutaneous disorders are useful clinical predictors of the HIV infection and play a unique role in HIV, as recognising HIV related skin changes may lead to diagnosis of HIV infection in the early stages, allowing initiation of appropriate ART. More efforts need to be put in educating and counselling the patients. A high level of suspicion for the HIV infection has to be kept in mind to prevent opportunistic infections and improving the patient's quality of life.

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