Mucocutaneous manifestations of HIV infection

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Abstract

Background: Human immunodeficiency virus (HIV) infection is associated with several mucocutaneous conditions which may be the first clinical presentation of HIV. A wide range of infectious and non-infectious skin lesions develop during the course of the disease but their frequency and associated factors vary from place to place.

Aim: To evaluate cutaneous manifestations in HIV infected patients attending to Dermatology outpatient department and their relationship with CD4 cell counts.

Methods: It is a hospital-based cross-sectional study. One hundred and twenty HIV seropositive patients attending the outpatient and inpatient departments were included in the study. Detailed history including age, sex, occupation, presenting complaint, high-risk behaviour, mode of transmission, marital status, partner's HIV status and treatment history was taken. Thorough cutaneous and systemic examination was done in all patients. Cluster of differentiation (CD4) count was noted in all patients at the time of presentation.

Results: Majority of the patients 85 (70.8%) were rural residents who belonged to low socio-economic and low educational strata. Housewives formed the largest group 44 (36.7%) followed by truck drivers 31 (25.8%) and laborers 25 (20.8%). The predominant mode of transmission was heterosexual contact 113 (94.2%). Most common mucocutaneous manifestations noticed were seborrheic dermatitis 78 (65%) followed by oral candidiasis 56 (46.6%), xerosis 51 (42.5%), generalized skin hyperpigmentation 42 (35%) and dermatophytosis 40 (33.3%).

Conclusion: This study showed the prevalence of various dermatological manifestations in HIV positive patients and their relation with CD4 count. Most of the manifestations occur in patients with low CD4+ count (<200). Early recognition of mucocutaneous manifestations helps in the early diagnosis and better management of the disease.

Keywords: CD4, Human immunodeficiency virus, Mucocutaneous.

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Introduction

Acquired immune deficiency syndrome (AIDS) is caused by retrovirus known as Human immunodeficiency virus (HIV). At the end of 2014, an estimated 36.9 (34.3–41) million people globally were living with HIV infection and 2 (1.9–2.2) million people were newly infected with HIV. Around 1.2 million people died due to AIDS-related illnesses.[1] As of June 2015, around 15.8 million people living with HIV were accessing the antiretroviral therapy.[2] According to United Nation report, worldwide India has the third highest number of people living with HIV around 2.1 million at the end of 2013.[1,3]

The HIV infection is associated with numerous mucocutaneous conditions which may be the first pointer towards its existence.[4] Skin manifestations are the initial signs of immunosuppression which are associated with significant morbidity. During the course of infection 80-95% patients develop skin manifestations.[4] Mucocutaneous lesions of HIV disease are seen throughout the course of infection.[4,5] The present study was undertaken to determine various mucocutaneous manifestations that occur in HIV positive patients.

Materials and Methods

A cross-sectional study was conducted in department of Dermatology, Venereology and Leprosy of Employee State Insurance Corporation (ESIC) hospital, Kalaburagi, Karnataka. The study was conducted between the period of January 2015 to January 2016. Study approval was taken from institutional ethical committee. One hundred and twenty HIV seropositive patients attending the outpatient and inpatient department were included in the study. Patients on immunosuppressive drugs were excluded from the study. Informed consent was obtained from all study subjects. Detailed history was taken including age, sex, occupation, marital status, high-risk behaviour, mode of transmission of infection, presenting complaint, partner's HIV status and treatment history. A complete general physical examination and cutaneous examination was done in all patients. To confirm clinical diagnosis specific laboratory investigations (KOH preparations, Tzanck smear and histopathological evaluation whenever necessary) were done. Cluster of differentiation (CD4) count was done by flowcytometry in all patients.

Results

A total of 120 HIV seropositive patients were enrolled in the study. Of these 82 (68.3%) were males and 38 (31.7%) females. Majority of the patients 52 (43.3%) were in the age group of 30-39 years. Most of the patients 85 (70.8%) were residents of rural areas. In our study housewives constitute the largest group 44 (36.7%) followed by truck drivers 31 (25.8%), laborers 25 (20.8%), office workers 14 (11.7%), and students 6 (5%) (Table 1). Most of the patients in our study group had low educational level and belonged to low socio-economic status. The predominant mode of transmission was heterosexual contact 113 (94.2%) followed by vertical 6 (5%) and homosexual contact 1 (0.8%) (Table 2).

Mucocutaneous manifestations in HIV are broadly divided into infectious and non-infectious. Dermatophytosis 38 (31.6%) was the most common infectious dermatoses followed by oral candidiasis 24 (20%), pyodermas 20 (16.6%), herpes zoster 18 (15%) (Fig. 1), genital herpes 16 (13.3%), scabies 14 (11.6%). molluscum contagiosum 14 (11.6%), genital warts 11 (9.1%) (Fig. 2), pityriasis versicolor 10 (8.3%), oral hairy leukoplakia 9 (7.5%), and herpes labialis 6 (5%). Seborrheic dermatitis 40 (33.3%) was the most common non-infectious dermatoses followed by xerosis 24 (20%), generalized skin hyperpigmentation 22 (18.3%), diffuse alopecia 22 (18.3%) (Fig. 3), pruritic papular eruptions 14 (11.6%), oral ulcers 13 (10.8), drug rash 06 (5%), and psoriasis 02 (1.6%). In 48 (40%) study subjects, two or more dermatological findings were seen. No cutaneous findings were noticed in 14 (11.6%) cases (Table 3).

We divided the patients based on CD4 counts into two categories i.e., <200 and >200 cells/mm^3. Cutaneous manifestations in the study group and its correlation with CD 4 cell count is been depicted in Table 4.

Table 1: Demographic parameters of study group

Variables		No. of cases	Percentage (%)
Age in years	<19 years	05	4.2
	20-29	40	33.3
	30-39	52	43.3
	40-49	16	13.3
	50-59	06	5
	>60	01	0.8
Sex	Male	82	68.3
	Female	38	31.7
Residence	Urban	35	29.2
	Rural	85	70.8
Educational status	Illiterate	21	17.5
	Below fifth standard	36	30
	High school	32	26.6
	Undergraduate	17	14.2
	Postgraduate	14	11.7
Occupation	House wives	44	36.7
	Laborers	25	20.8
	Truck drivers	31	25.8
	Office worker	14	11.7
	Students	06	5
Religion	Hindu	112	93.3
	Muslim	08	6.7
	Others	00	00
Marital status	Married	103	85.8
	Unmarried	08	6.7
	Widow/Separated	09	7.5

Table 2: Mode of transmission of HIV in the present study group

Modes of transmission	No. of patients (n=120)
Heterosexual	113(94.2%)
Maternal transmission	06 (5%)
Homosexual	01(0.8%)

Table 3: Mucocutaneous manifestations in the study group

Infectious disorders	No. of patients	Non-infectious disorders	No. of patients
Dermatophytosis	38 (31.6%)	Seborrheic dermatitis	40 (33.3%)
Oral candidiasis	24 (20%)	Xerosis	24 (20%)
Pyodermas	20 (16.6%)	Generalized skin hyperpigmentation	22 (18.3%)
Herpes zoster	18 (15%)	Diffuse alopecia	22 (18.3%)
Genital herpes	16 (13.3%)	Pruritic papular eruptions	14 (11.6%)
Scabies	14(11.6%)	Oral ulcers	13 (10.8)
Molluscum contagiosum	14 (11.6%)	Drug rash	06 (5%)
Genital warts	11 (9.1%)	Psoriasis	02 (1.6%)
Pityriasis versicolor	10 (8.3%)		
Oral hairy leukoplakia	9 (7.5%)		
Herpes simplex	6 (5%)		

Table 4: Mucocutaneous manifestations and its correlation with CD4 count

Clinical manifestation	No. of cases	CD4 count	
		<200	>200
Seborrheic dermatitis	40	28	12
Dermatophytosis	38	22	16
Oral candidiasis	24	17	7
Xerosis	24	14	10
Generalized skin hyperpigmentation	22	13	9
Diffuse alopecia	22	10	12
Pyodermas	20	12	8
Herpes zoster	18	14	4
Genital herpes	16	13	3
Scabies	14	8	6
Molluscum contagiosum	14	9	5
Pruritic papular eruptions	14	10	4
Oral ulcers	13	8	5
Genital warts	11	7	4
Pityriasis versicolor	10	8	2
Oral hairy leukoplakia	9	6	3
Herpes simplex	6	4	2
Drug rash	6	5	1
Psoriasis	02	0	2
	323	208	115

Discussion

Human immunodeficiency virus infection is a major health problem worldwide.[5] The dermatological manifestations including many opportunistic infections are very common in HIV infected patients.[6] Skin is often the first and only organ affected during most of the course of the disease.[7] Recognition of mucocutaneous manifestations helps in early diagnosis of HIV.[5] This study was mainly focused on the dermatological

manifestations of HIV positive patients attending to our hospital for treatment.

There is a high prevalence of mucocutaneous manifestations in HIV infected patients.[7] Prevalence of mucocutaneous manifestations in our study noted were 88.3%, which is slightly higher to the findings of Jaffrey et al[8] (86%) and Pitche et al[9] (82.5%). Spira et al[10] noted lower prevalence of mucocutaneous findings (65.3%) in their study. Most of our patients were in the reproductive age group belonging to rural area. Our study resulted heterosexual route to be the major mode of transmission (94.2%) among patients which was also consistent with many other studies done elsewhere.[7,11] But a study done by Spira et al reported homosexual or bisexual was the predominant mode of transmission, which was contradictory to our finding.[10]

Dermatophytosis 38 (31.6%) was the most common infectious manifestation followed by oral candidiasis 24 (20%) in our study. Shobhana et al[4] noted oral candidiasis 148/410 (36%) was the common finding followed by dermatophytosis 53/410 (12.9%) and gingivitis 53/410 (12.9%). Dermatophytosis has been recorded by many researchers as most common presentation.[12,13] Hot climate in this region has claimed to higher prevalence of dermatophytosis in our study. Chawhan et al observed molluscum contagiosum was the most common infectious lesion in his study.[14] Seborrheic dermatitis (65%) was common non-infectious dermatological manifestation in our study which is consistent with other studies.[4,15,16] Criton et al[17] reported xerosis (100%) and Chawhan et al[14] noted pruritic papular eruption as the most common non-infectious manifestations in their respective studies. Singh et al studied dermatological manifestations in 137 HIV patients. Author noticed xerosis 63 (52.5%), generalized skin hyperpigmentation 56 (46.67%), pruritic papular eruption 27 (22.5%), seborrheic dermatitis 89 (74.16%) and oral ulcer 21 (17.5%) cases.[7] These figures are much higher than what was observed in the present study.

Chawhan et al studied 110 HIV infected patients. Author noticed most of the infectious manifestations in patients with CD4+ <200 and non-infectious manifestations in CD4+ >350.[14] In present study most of the mucocutaneous manifestations (64.3%) occurred in patients with low CD4+ count (<200 cells/mm^3). Mucocutaneous manifestations increase both in frequency and severity with the progression of HIV and decline in CD4+ counts.[7] Recognition of mucocutaneous manifestations in HIV/AIDS helps in earlier diagnosis of HIV as well as a measure of immune status of individual.

Conclusion

This study showed the prevalence of various dermatological manifestations in HIV positive patients and their relation with CD4 count. Mucocutaneous manifestations occur more frequently in patients with low CD4+ count. Early recognition of these manifestations helps in earlier diagnosis of disease and henceforth aids in better management.

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