IJMRP

International Journal of Medical Research Professionals

Original Article

Study of Cutaneous Manifestations in HIV Patients in a Tertiary Care Centre

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Article History
Received: 02 May 2015
Revised: 18 May 2015
Accepted: 06 June 2015

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ABSTRACT

Background: HIV disease was first described in 1981 mere three decades ago, following a cluster of cases of previously unreported acquired immunodeficiency syndrome defined by opportunistic infections (OIs) Pneumocystis Carinii Pneumonia (PCP) and chronic herpetic ulcers and by opportunistic neoplasms (ON) and Kaposi's sarcoma (KS). The prevalence of cutaneous abnormalities in HIV is nearly 90%.

Aims: The present study was designed to study the various presentations of different cutaneous manifestations in an known HIV positive patients attending the tertiary hospital and to correlate the various clinical markers in such patients.

Materials and Methods: A total number of 87 cases were included in the present study which attended the Dermatology and STI OPD in a tertiary care hospital. The patients admitted in medicine wards were also included in our study. Patients who were known HIV seropositive were included in our study. Patients with all age group were included.

Results: Out of total 87 patients; 56 were male patients while 31 female patients were present. Male to female patient ratio in our study was 1.8:1 with male preponderance. In age wise distribution maximum patients were in the age group of 31 to 40 followed by 21-30 with 32 (36.7%) and 24 (27.5%) cases respectively. Occupation of male patients 16 were involved in driving occupation and most of the other were involved in labor work. Infective group 36% (n=32) of patients formed the major cause of presentation. Dermatophytic infections were the commonest. Tinea corporis was seen in 14 cases. Among the bacterial infections (n=14) recurrent furunculosis, boils were most commonly seen. Pruritic popular eruption of HIV was seen in about n=28 patients. 2 females presented with maculopapular drug rash due to the ART.

KEYWORDS: HIV Positive, Immunodeficiency, Pruritus, Candidiasis.

INTRODUCTION

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.[1]

Skin and mucocutaneous disorders are common in HIV infection and may be the earliest manifestation of the disease.[2] The spectrum of dermatologic manifestations of HIV disease is broad and diverse.[3] The depletion of CD4+ T cells in HIV disease is believed to be multifactorial, and includes direct infection and destruction of CD4+ T cells by HIV, as well immune exhaustion and apoptosis of T cells due to persistent and aberrant activation of the immune system. Correlation of mucocutaneous manifestations of HIV Infection with CD4 T cell counts is shown in Table 1.[4,5]

The introduction of ART has markedly altered the natural history of HIV infection. In addition, increasing availability of ART has brought with it an increase in the prevalence of cutaneous side effects of antiretrovirals.[6]

A) **CUTANEOUS FINDINGS IN CLINICALLY LATENT HIV INFECTION**

i) Inflammatory Dermatoses

Seborrheic Dermatitis: Affecting as many as 83% of HIV-infected individuals during the course of their disease. Seborrheic dermatitis may occur during all stages of HIV disease, and frequently occurs early in HIV-infection (CD4+ T cell count >500/μL).[7]

Psoriasis Vulgaris: All clinical subtypes of psoriasis are observed in HIV infected individuals, though guttate,

inverse and erythrodermic psoriasis are the most common.[8]

Xerosis and Acquired Ichthyosis: Is very common in HIV infected individuals, occurring in up to 30 percent of those with advance disease.[9]

ii) Opportunistic Infections

Human Papillomavirus Infections: HPV infections are commonly seen at all stages of HIV disease, and anogenital and oral HPV infections have been reported to occur at a higher rate in HIV-infected individuals compared to that in the general population.[10] The risk of HPV-induced dysplasia and malignancy is significantly higher in HIV-infected individuals compared to that in the general population.[11]

Staphylococcus Infections: Is a common bacterial pathogen causing cutaneous and systemic infections at all stages of HIV disease.

Risk factors for staphylococcal infection in HIV infected individuals include nasal carriage of S. aureus, the presence of an indwelling vascular catheter, and a CD4+ T cell count <100/µL.[12]

Herpes Simplex Virus 1 and 2 Infections: Chronic herpetic ulcers of greater than 1 months' duration are an AIDS defining condition.

Table 1: Correlation of mucocutaneous manifestations of HIV with CD4 Counts[5]

CD4 T Cell Count >500µL	CD4 T Cell Count >250 µL	CD4 T Cell Count <200 µL
Acute retroviral syndrome	Dermatophyte infections, recurrent or persistent	Bacillary angiomatosis
Herpes zoster infection (nondisseminated)	Oral candidiasis	Hyperkeratotic scabies
Seborrheic dermatitis	Oral hairy leukoplakia Herpes zoster infection, disseminated	Cutaneous miliary tuberculosis Eosinophilic folliculitis
		Herpes simplex virus infection (>1 month's duration)
		Idiopathic pruritus
		Invasive fungal infections
		Kaposi's sarcoma
		Molluscum contagiosum, large lesions
		Papular pruritic eruption of HIV

iii) Adverse Cutaneous Drug Eruptions.[13]

The incidence of adverse cutaneous drug eruptions is estimated to be as much as 100 times more common in HIV individuals. Morbilliform eruptions are by far the most common manifestation, accounting for about 75%–95% of cases.

Adverse Effects of Antiretroviral Therapy: These medications are associated with a variety of cutaneous adverse effects, including hypersensitivity reactions, lipodystrophy, retinoid-like effects, hyperpigmentation, nail changes, and injection site reactions.

iv) Lipodystrophy Syndrome:

In a study of 581 HIV-infected individuals (of which 95% were currently treated with or had previously undergone treatment with ART), the overall prevalence of lipodystrophy was 38%, whereas the prevalence of lipoatrophy alone was 16% and lipohypertrophy alone was 12%.[14]

B) CUTANEOUS FINDINGS ASSOCIATED WITH SYMPTOMATIC & ADVANCED HIV INFECTION

i) Inflammatory Dermatoses

Pruritus and Pruritic Eruptions of HIV Disease: Pruritus is a common complaint in individuals with late symptomatic and advanced HIV disease. (Table 2)

Table 2: Differential Diagnosis of Pruritus In a HIV-positive Individual

Inflammatory	Papular Pruritic Eruption of HIV
	Eosinophilic folliculitis
	Atopic dermatitis
	Psoriasis
	Seborrheic dermatitis
Infectious	Scabies
	Arthropod assault
	Viral hepatitis
Systemic and Metabolic Disorders	Obstructive liver disease
	Renal failure
	Lymphoma
Miscellaneous	X erosis
	Ichthyosis vulgaris
	Dermatographism
	Allergic contact dermatitis
	Photodermatitis
	Adverse cutaneous drug eruptions

Eosinophilic Folliculitis: Eosinophilic folliculitis is a chronic pruritic dermatosis occurring in persons with advanced HIV disease.

Papular Pruritic Eruption of HIV: Papular Pruritic eruption (PPE) of HIV has been considered to be within the spectrum of pruritic papular disorders in HIV, which includes eosinophilic folliculitis and nonspecific pruritus.

Disorders of the Oropharynx: In about 10% of cases, oropharyngeal disorders have been reported to be the first sign of HIV disease.[15]

In one of the study candidiasis was the most common finding, diagnosed in more than 90% of subjects. Other common oropharyngeal disorders included herpetic ulcers, xerostomia, exfoliative cheilitis, oral hairy leukoplakia.

ii) Opportunistic Infections:

Bacillary Angiomatosis: Occurs most commonly in the setting of advanced HIV disease (CD4+ T cell count <200/µL).[7]

Candidiasis

Dermatophyte Infections

Molluscum Contagiosum.

Scabies.

Opportunistic Neoplasms:

a) Kaposi sarcoma

b) In situ and invasive cervical SCC

c) Non-Hodgkin lymphoma.

AIMS AND OBJECTIVES

The present study was conducted by keeping the following aims as:

1. To study the presentation of different cutaneous manifestation in an HIV patient.
2. To study the correlation of various clinical markers in the group.

MATERIALS AND METHODS

HIV seropositive patients attending the outpatient Department of Dermatology, indoor patients of Dermatology and Medicine of a tertiary teaching institute were randomly selected. A total number of 87 patients were studied. Patients detailed history and clinical findings were noted and recorded in the standard proforma. Whenever it was necessary biopsy of the skin lesions was done for confirmation. Culture, KOH mount, Gram stain, Tzanck smear, VDRL was done wherever required.

RESULTS

Total 87 seropositive patients were examined and detailed clinical examination was noted. Out of total 87 patients 56 were male patients while 31 female patients were present. Male to female patient ratio in our study was 1.8:1 with male preponderance. Out of 56 males 38 (67%) were married and among females out of 31 patients 25 (80%) were married In age wise distribution maximum patients were in the age group of 31 to 40 followed by 21-30 with 32 (36.7%) and 24 (27.5%) cases respectively. Suggesting that infection was seen in high percentage amongst the sexually active young reproductive age group. (Table 3)

Table 3: Age and genderwise distribution of patients.

Age group (yrs)	Males	Females	Total	%
<10	2	2	4	3
11-20	5	2	7	6
21-30	15	7	22	27
31-40	21	11	32	36
41-50	11	5	16	18
>50	2	4	6	6
Total	56	31	87	

Only 6 patients were above 50 years of age. While 4 pediatric patients presented in dermatology OPD.

Considering the occupation of male patients 16 were involved in driving occupation and most of the other were involved in labor work. Among the female patients 50% patients were housewives while 20% were in agricultural work.

Infective group 36% (n=32) of patients formed the major cause of presentation. All bacterial, fungal and few viral cases were seen. Among the fungal infections Dermatophytic infections were the commonest. Tinea corporis was seen in 14 cases. Truncal and the distribution over the extremities and waist line were commonly seen. Tinea cruris and onychomycosis were seen in 13 cases. Few cases had tinea faciei. Oral candidiasis (n=5) and candidial balanoposthitis was also one of the common feature in our study. Among the bacterial infections (n=14) recurrent furunculosis, boils were most commonly seen. Herpes genitalis was seen in 3 cases while single case of Herpes zoster, genital wart was encountered in our study. Two patients had molluscum over the genital area. Infestation by scabies was seen in 5 patients.

Among the inflammatory condition the maximum patients presented with the Pruritic skin disorders. Pruritic popular eruption of HIV was seen in about n=28 patients. This complaint was quite distressful for the patients. Seborrheic dermatitis was seen in 9% (n=8) of cases while one patient presented with plaques of psoriasis vulgaris. Icthyosis vulgaris 8% and xerosis in 12% was another common complaint seen in our study.

Systemic involvement in the form of pulmonary tuberculosis was seen in 7 cases. Out of total 87 cases 16 patients were on anti-retroviral treatment. Out of theses 2 females presented with maculopapular drug rash due to the ART. They were on the Efavirenz drug regimen.

VDRL test was positive titer in only 3 cases. Average CD4 count was 189 /µl.

DISCUSSION

Age and Sex Distribution: Males were 56 (64%) while females were 31 (36%) with male to female ratio being 1.8:1 in our study. Shobhana et al reported 2.5:1 male to female ratio in a similar study conducted in 2004.[16]

Maximum number of cases in our study was in the age group of 20-40 years of age with 63%.

Occupation: Patients involved in driving work 16 (28%) among the males.

Cutaneous Infections: Infective patients formed the major group of presentation with 36%. Cutaneous fungal and bacterial infective conditions were common. Dermatophytic infections were the commonest. Tinea corporis was seen in 14 cases. Truncal and the distribution over the extremities and waist line were commonly seen. Tinea cruris and onychomycosis were seen in 13 cases. Few cases had tinea faciei. Oral candidiasis (n=05) and candidial balanoposthitis was also one of the common feature in our study. Shobhana et al observed 13 % cases of Dermatophytic infections in their study in 2004.[16] Oral candidiasis was seen in 36 % cases by Shobhana et al. We had seen oral candidiasis as muco-cutaneous manifestation in 5% of cases. Tenia cruris and fungal nail infections in 13 cases.

Among bacterial infections 15 % (n=14) recurrent furunculosis, boils were most commonly seen. Herpes genitalis was seen in 3 cases while single case of Herpes zoster, genital wart was encountered in our study. Two patients had molluscum over the genital area. Infestation by scabies was seen in 5 patients.

Inflammatory Condition: Pruritic popular eruption of HIV was seen in about n=28 patients. This complaint was quite distressful for the patients. Seborrheic dermatitis was seen in 9% (n=8).

Shobhana et al observed 4% cases of seborrheic dermatitis.[16] One patient presented with plaques of psoriasis vulgaris. Icthyosis vulgaris 8% and xerosis 12% was another common complaint seen in our study.

Systemic involvement in the form of pulmonary tuberculosis was seen in 7 cases. Out of total 87 cases 16 patients were on anti-retroviral treatment.

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How to cite the article: Shekhar Pradhan and Umesh Bhoi. Study of Cutaneous Manifestations in HIV Patients in a Tertiary Care Centre. Int J Med Res Prof. 2015, 1(2); 76-79.