

# CUTANEOUS MANIFESTATIONS IN HIV POSITIVE PATIENTS

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**Abstract.** Cutaneous manifestations are common clinical findings among HIV positive patients. The causes may be bacteria, viruses, fungi and other non-infectious agents. This study was conducted at the Pramongkutklao Hospital skin clinic to determine the frequency distribution of cutaneous manifestations in HIV positive patients. A total of 147 patients with HIV seropositivity were recruited and divided into a retrospective group and a prospective study group. For the retrospective study, hospital records of 129 patients who attended from January 1995 to November 1998 were recruited. The prospective study was carried out from November 1998 to January 1999 and 18 patients were recruited. Cutaneous finding among patients in the two studies were evaluated. There were ten common cutaneous manifestations observed in the retrospective and prospective study including pruritic papular eruptions (PPE) (51.2%, 50%), oral candidiasis (16.7%, 21.7%), herpes zoster (10.9%, 5.6%), oral hairy leukoplakia (10%, 5.6%), unclassified eczema (9%, 11.1%), urticaria (5.6%, 3.1%), seborrheic dermatitis (4.7%, 16.7%), folliculitis (4.7%, 5.6%), prurigo simplex (4.7%, 5.6%), and Steven-Johnson syndrome (3.9%, 0%). However, the distribution of cutaneous manifestations in the two studies were not significantly different. These findings may be useful as baseline data for common cutaneous manifestations in HIV positive patients.

## INTRODUCTION

HIV/AIDS occurrence is a major health problem facing all countries in the world (Surasiengsunk *et al*, 1998). Cutaneous manifestations are common findings in HIV infected patients (Stingl *et al*, 1993). It showed that cutaneous lesions were among the first recognized clinical manifestations of HIV infection (Spira *et al*, 1998) and the prevalence of skin lesions was associated with the progression of HIV disease (Hira *et al*, 1998).

It has been suggested that the severity of immunosuppression and other confounding variables such as concurrent medications and patient demography may play important roles (Coldiron and Bergstresser, 1989). Cutaneous findings in HIV infection are not unique and may be resemble other infectious and non-infectious diseases. The frequency distribution of common cutaneous manifestations varied

among several studies (Coldiron and Bergstresser, 1989; Coopman *et al*, 1993; Hira *et al*, 1998; Spira *et al*, 1998) but the most common finding was pruritic papular eruption (PPE).

Certain characteristic skin changes can thus help clinicians to recognize previously undiagnosed HIV infection. In addition, skin disorders in patients with unknown HIV status, may lead to HIV testing (Volberding *et al*, 1990). Thus, knowledge of the cutaneous manifestations in HIV infected patients is important. In this study, the cutaneous manifestations among HIV positive patients were evaluated retrospectively and prospectively in an area of central Thailand.

## MATERIALS AND METHODS

The study was carried out at the Pramongkutklao Hospital Skin Clinic, Bangkok, Thailand.

The study design was a descriptive study, both retrospective and prospective. For the retrospective study, we examined all records of HIV positive patients with cutaneous manifestation during January 1995 to November 1998. For the prospective study, eligible patients were recruited during November 1998 to January 1999. The inclusion criteria for study subjects were (1) HIV seropositivity as determined by GPA and ELISA, Western blot was used when either GPA or ELISA was negative, (2) patients presenting with cutaneous findings and (3) patients aged > 13 years. The data for quantitative variables were expressed as median and range, qualitative variables were expressed as frequency and percentage. Statistical analysis was performed using either chi-square test or Fisher's exact test as appropriate. A p-value of <0.05 was considered statistically significant.

## RESULTS

The demographic characteristics of both retrospective and prospective groups are shown in Table 1. Of a total of 147 cases, 129 cases (108 male and 21 female) were in the retrospective study and 18 cases (13 male and 5 female) were in the prospective study. The majority of cases were workers, aged between 20 to 39 year old and unmarried.

The frequency distribution of various cutaneous findings in the two studied groups is shown in Table 2. The cutaneous findings were classified according to causes, either infectious or non-infectious. In the infectious group, the most common cutaneous finding was caused by fungal infection including oral candidiasis (21.7%, 16.7%), tinea corporis (0.8%,

Table 1  
Demographic of HIV positive patients with cutaneous findings in retrospective and prospective studies.

Variables	Retrospective study (n = 129) No. (%)	Prospective study (n = 18) No. (%)
<b>Age (years)</b>		
<20	2 (1.6)	0 (0)
20-29	47 (36.4)	4 (22.3)
30-39	50 (38.7)	10 (55.6)
40-49	22 (17)	2 (11.1)
>49	8 (6.2)	2 (11.1)
Median (range)	32 (18-65)	34 (23-51)
<b>Sex</b>		
Male	108 (83.7)	13 (72.2)
Female	21 (16.3)	5 (27.8)
<b>Marital status</b>		
Single	72 (55.8)	10 (55.6)
Married	53 (41.1)	8 (44.4)
Widowed	2 (1.6)	0 (0)
Divorced	2 (1.6)	0 (0)
<b>Occupation</b>		
Government service	31 (24)	3 (16.7)
Student	3 (2.3)	0 (0)
House wife	8 (6.2)	0 (0)
Worker	74 (57.4)	14 (77.8)
Unemployed	6 (4.7)	1 (5.6)
Farmer	7 (5.4)	0 (0)

Table 2  
Frequency distribution of various cutaneous diseases of HIV positive patients in two studied groups.

Cutaneous findings	Retrospective study (n = 129) No. (%)	Prospective study (n = 18) No. (%)
<b>Pruritic papular eruptions</b>	66 (51.2)	9 (50)
<b>Fungal infections</b>	30 (23.2)	3 (16.7)
Oral candidiasis	28 (21.7)	3 (16.7)
Tinea corporis	1 (0.8)	0 (0)
Onychomycosis	1 (0.8)	0 (0)
<b>Viral infections</b>	29 (22.5)	3 (16.7)
Herpes zoster	14 (10.9)	1 (5.6)
Oral hairy leukoplakia	13 (10)	1 (5.6)
Herpes simplex	1 (0.8)	1 (5.6)
Chicken pox	1 (0.8)	0 (0)
<b>Eczema</b>	23 (17.8)	7 (38.9)
Unclassified eczema	9 (7)	2 (11.1)
Seborrheic dermatitis	6 (4.7)	3 (16.7)
Prurigo simplex	6 (4.7)	1 (5.6)
Nummular eczema	1 (0.8)	0 (0)
Lichenoid photoallergic dermatitis	1 (0.8)	0 (0)
Photo sensitivity dermatitis	0 (0)	1 (5.6)
<b>Bacterial infections</b>	13 (10.1)	2 (11.1)
Folliculitis	6 (4.7)	1 (5.6)
Furunculosis	3 (2.3)	0 (0)
Impetigo	2 (1.6)	0 (0)
Chronic infected ulcer	1 (0.8)	1 (5.6)
Cellulitis	1 (0.8)	0 (0)
<b>Drug eruptions</b>	9 (7)	1 (5.6)
Stevens-Johnson syndrome	5 (3.9)	0 (0)
Exanthematous eruption	3 (2.3)	1 (5.6)
Lichenoid drug eruption	1 (0.8)	0 (0)
<b>Arthropod infections</b>	2 (1.6)	0 (0)
Scabies	2 (1.6)	0 (0)
<b>Sexually transmitted diseases</b>	2 (1.6)	0 (0)
Secondary syphilis	1 (0.8)	0 (0)
Chancroid	1 (0.8)	0 (0)
<b>Benign tumor</b>	2 (1.6)	0 (0)
Capillary hemangioma	1 (0.8)	0 (0)
Epidermal cyst	1 (0.8)	0 (0)
<b>Others</b>	16 (12.4)	4 (22.2)
Urticaria	4 (3.1)	1 (5.6)
Psoriasis	3 (2.3)	1 (5.6)
Acne	3 (2.3)	0 (0)
Angular stomatitis	2 (1.6)	0 (0)
Alopecia	1 (0.8)	0 (0)
Hyperpigmentation	1 (0.8)	0 (0)
Erythema multiforme	1 (0.8)	0 (0)
Discoid lupus erythromatosus	1 (0.8)	0 (0)
Ichthyosis	0 (0)	1 (5.6)
Nail plate hyperpigmentation	0 (0)	1 (5.6)

0%) and onychomycosis (0.8%, 0%). The second commonest finding was caused by viral infections including herpes zoster (10.9%, 5.6%), oral hairy leukoplakia (10%, 5.6%), herpes simplex (0.8%, 5.6%) and chicken pox (0.8%, 0%). In bacterial infection, folliculitis (4.7%, 5.6%) was common, but cellulitis (0.8%, 0%), furunculosis (2.3%, 0%), impetigo (1.6%, 0%), and chronic infected ulcer (0.8%, 5.6%) were less common. Some cases presented with scabies (1.6%, 0%), secondary syphilis (0.8%, 0%) and chancroid (0.8%, 0%).

In the non-infectious group, pruritic papular eruption (PPE) (51.2%, 50%) was the most common cutaneous finding among HIV positive patients. Other non-infectious causes included

unclassified eczema (7%, 11.1%), seborrheic dermatitis (4.7%, 16.7%), nummular eczema (0.8%, 0%), lichenoid photoallergic dermatitis (0.8%, 0%), prurigo simplex (4.7%, 5.6%) and photosensitivity dermatitis (0%, 5.6%). Drug eruptions were also found, particularly with co-trimoxazole treatment and patients presented with Steven-Johnson syndrome (3.9%, 0%), exanthematous eruption (2.3%, 5.6%), and lichenoid drug eruption (0.8%, 0%). There were a few cases presenting with benign tumors (1.6%, 0%), psoriasis (2.3%, 5.6%), urticaria (3.1%, 5.6%), acne (2.3%, 0%) and others.

In the retrospective study, only 28 patients had records of CD4 cell counts, of these 17 (60.7%) patients had CD4 cell counts of <200

Table 3  
Cutaneous findings in relation to CD4 cell counts <200 cells/mm<sup>3</sup> in retrospective and prospective studies.

Cutaneous findings	Retrospective study	Prospective study
	(n = 17) No. (%)	(n = 7) No. (%)
<b>Pruritic papular eruptions</b>	9 (52.9)	1 (9)
<b>Fungal infections</b>	4 (23.5)	2 (18)
Oral candidiasis	4 (23.5)	2 (18)
<b>Viral infections</b>	5 (29.4)	2 (18)
Oral hairy leukoplakia	5 (29.4)	0 (0)
Herpes zoster	0 (0)	2 (18)
<b>Eczema</b>	5 (29.0)	3 (27)
Unclassified eczema	2 (11.6)	2 (18)
Lichenoid photoallergic dermatitis	1 (5.9)	0 (0)
Prurigo simplex	1 (5.9)	0 (0)
Nummular dermatitis	1 (5.9)	0 (0)
Seborrheic dermatitis	0 (0)	1 (9)
<b>Bacterial infections</b>	0 (0)	2 (18)
Impetigo	0 (0)	1 (9)
Folliculitis	0 (0)	1 (9)
<b>Drug eruptions</b>	1 (5.9)	1 (9)
Exanthematous eruption	1 (5.9)	0 (0)
Stevens-Johnson syndrome	0 (0)	1 (9)
<b>Sexually transmitted diseases</b>	0 (0)	1 (9)
Chancroid	0 (0)	1 (9)
<b>Others</b>	2 (11.6)	3 (27)
Psoriasis	1 (5.9)	0 (0)
Acne	0 (0)	1 (9)
Hyperpigmentation	0 (0)	1 (9)
Angular stomatitis	1 (5.9)	0 (0)
Urticaria	0 (0)	1 (9)

cells/mm<sup>3</sup> with median 61 (range 0-984) cells/mm<sup>3</sup> (Table 3). In the prospective study, 7 patients had CD4 cell counts of <200 cells/mm<sup>3</sup> with median 37 (range 10-97) cells/mm<sup>3</sup>. The majority of patients with low CD4 counts had PPE (52.9%, 9%) while the remainder had viral infection (29.4%, 18%), eczema (29%, 27%), fungal infections (23.5%, 18%), drug eruptions (5.9%, 9%), bacterial infections (0%, 18%), sexually transmitted diseases (0%, 9%) and other findings (11.6%, 27%). Concerning cutaneous findings in the retrospective study, there was no significant association between CD4 cell counts and cutaneous findings except PPE (p = 0.04).

## DISCUSSION

Skin disorders are frequent among persons infected with HIV (Sirayathorn *et al*, 1995). In many cases, the presence of a skin disorder is the first manifestation of HIV infection (Calabrese *et al*, 1987) and serves as an early indicator of clinical T-cell deficiency (Johnson and Dover, 1993). The frequent findings of cutaneous disorders in HIV infected individuals is due to the fact that the skin itself is an immune system containing antigen presenting (Langerhan) cells. There is evidence that the numbers of Langerhan cells are decreased in AIDS because they are also targets of HIV infection (Tschachler *et al*, 1996).

PPE, oral candidiasis and seborrheic dermatitis were common cutaneous findings in our retrospective and prospective studies. These findings were similar to previous reports that PPE was the most common cutaneous finding in HIV positive patients (Kullavanijaya and Bisalbutra, 1997). In both of our studies, herpes zoster was the most common viral infection. The results were similar to other reports but differed from the study of Goldstein *et al* (1997). Oral hairy leukoplakia (OHL) was the second common finding caused by viral infections. These results were consistent with those reported by Chiewchannvit and Wongmaneeojn (1993) but differed from the study of Kullavanijaya and Bisalbutra (1997)

who reported a low incidence of OHL. Penicilliosis was a common fungal infection in the northern part of the country and 16.8% of cases were detected in HIV patients at Maharaj Nakhon Chiang Mai Hospital. In our studies, none of the cases had penicilliosis.

Concerning CD4 cell counts among 28 patients in the retrospective study, there was no statistically significant association between incidence of skin diseases and the level of CD4 cell counts; this finding was in agreement with that reported by Coopman *et al* (1993). The majority of patients with PPE had CD4 cell counts <200 cells/mm<sup>3</sup>. In contrast, patients with herpes zoster had high CD4 cell counts. These findings were similar to those reported by Goldstein *et al* (1997).

Concerning drug eruption, 10 of 33 cases with a history of drug eruption had allergy to co-trimoxazole treatment, nine cases presented with Stevens-Johnson syndrome and one case with lichenoid drug eruption. However, our study was limited due to the small sample size.

These findings may give recent information on common cutaneous findings in HIV positive patients. This may suggest further that physicians should perform HIV blood testing in patients with PPE. Furthermore, the progressive introduction of highly active antiretroviral therapy (HAART) in HIV positive patients may lead to changes in prevalence of cutaneous findings in future studies.

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