SKIN AND MUCOUS MEMBRANE MANIFESTATIONS IN HIV DISEASE

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Abstract

The skin changes occuring in HIV infection are mostly attributable to alterations in immune function. The association between HIV infection and increased of opportunistic infection and Kaposi's sarcoma first recognize by Dermatologist in NewYork in 1981.

The disorder is cause by a human immunodeficiency virus (HIV), known as the human T-cell lymphotrophic virus III (HTLV III). This retrovirus has predilection for CD4 T-helper cells, monocytes and Langerhan's cells. Skin problem are very common among individuals infected with HIV if T-helper cells are less than 100 cells/mm2.

Skin manifestations of HIV disease may be divided into 3 main groups : 1. Infections e.g. bacteria, virus, fungus and protozoa. 2. Non-specific dermatitis group or miscellaneous group e.g. papulo-squamous, papular, vascular and drug related skin disorder. 3. Neoplasm e.g. Kaposi's sarcoma, Cutaneous T-cell lymphoma (CTCL) and squamous cell carcinoma (SCC).

This brief review outlines some of the common dermatoses with HIV infection in South East Asia (1996) and some from the Institute of Dermatology, Bangkok, Thailand (1991-1995).

Introduction

Apart from the primary infection, the skin changes occuring in HIV infection are mostly attributable to alterations in immune function. These include

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infections of increased severity or atypical morphology with recognizied skin pathogens. The pathogenesis of some others, however, is uncertain. Dermatologists were the first to recognize an association between HIV infection and increased of opportunistic infection and Kaposi's sarcoma in New York and California in 1981. The disorder is caused by a human immunodeficiency virus (HIV), known as the human T-cell lymphotrophic virus III (HTLV-III). This retrovirus has predilection for CD4 T-helper cells, monocyte and Langerhan's cells.

Skin manifestation are very common among individuals infected with HIV. This brief review outlines some of the common dermatoses associated with HIV infection in SEA, South East Asia (1996) and some data from Institute of Dermatology, Bangkok, Thailand (1991-1995).

Skin Manifestations of HIV Disease

87% of HIV patient will presented with skin manifestations when T-helper cell (absolute $CD4^+$ count) < 100 cm/mm2. Skin manifestations of HIV disease may be divided into 3 main groups:

1. Infection e.g bacteria, virus, fungus and protozoa
2. Non-specific dermatitis or miscellaneous group e.g papulosquamous, papular, vascular and drug-related skin disorder.
3. Neoplasm e.g Kaposi's sarcoma, Cutoneous T-cell Lymphoma (CTCL) and Squamous Cell Carcinoma (SCC).

Bacterial Infection

1. The common bacterial infections include impetigo, folliculitis, ecthyma, cellulitis, secondary infection of scabies.
2. Mycobacterial disease commonly caused by *Mycobacterium tuberculosis* and *Mycobacterium avium intracellulare*. Patient presented with small papulopustule similar to folliculitis or lymphadenopathy.

   Treatment : Standard short course regimen with 2EHRZ/4HR for 6 months (*M. tuberculosis*). In case of atypical *Mycobacterium* treat with Clarithromycin 500-1,000 mg twice a day for 7 days, Ciprofloxacin 750 mg twice a day and Rifampicin 600 mg per day).
3. Syphilis

Viral infection

1. Herpes simplex

HIV infected patients often have locally destructive and persistant HSV infection, but rarely show generalized manifestations. It commonly occur at the usual sites such as : lip, mouth, genitalia and anus.
Untreated, these lesions become large, deep, confluent ulcers which are often covered with necrotic crust.

Treatment: oral acyclovir 200 mg 5 times a day for 7-10 days (if no response increased dose 800 mg). In case of acyclovir resistant mutant Trisodium phosphonoformate (Foscarnet) is given. It's virostatic 40 mg/kg q 8-12 hr, side effects : renal failure, genital ulcer)

2. Herpes zoster

Found in moderate degree of immunodeficiency. The incidence of Herpes Zoster in HIV infection is about 7 times more common than normal people. The eruption may be bullous haemorrhagic, purulent, ulcerative or necrotic.

Treatment: Oral acyclovir 800 mg 5 times/day 10-14 days or intra venous (IV) acyclovir 10 mg/kg three times a day or Foscarnet.

3. Cytomegalovirus

It can be found in 90% of AIDS patient. Most commonly occur in the eyes (retinitis) and colitis. Skin manifestations can be presented with orofacial or perianal ulceration, macular purpura, vasculitis or small keratotic verrucous lesion.

Treatment: ganciclovir, Foscarnet.

4. Epstein-Barr virus

Oral Hairy Leukoplakia (OHL), Burkitt's lymphoma and EBV-positive large cell lymphoma.

OHL is a lesion specific to HIV induce immunodeficiency. Usually occur 5-10 years after primary HIV infection and it has been noted in > 50% of homosexual and bisexual males with HIV disease.

Clinical feature: white patch, usually seen along the lateral border of the tongue and frequently bilateral. The lesions are hairy appearance, corrugated or markedly folded. It can not remove by rubbing with gauze.

Differential diagnosis: Oral candidiasis, lichen planus, geographic tongue or Squamous Cell Carcinoma.

Treatment : May occasionally improved spontaneously in 10.8% of the patients or with zidovudine. If therapy is indicated, acyclovir may prove useful.

5. Human papilloma virus (HPV)

Presented with genital wart (condylomatous papules). Now increased in incidence and resistant to treatment. The incidence of cervical dysplasia-neoplasia in female patient is incerased about 5-10 time. Recurrent is common in very low immunodeficiency patient.

6. Molluscum contagiosum

It caused by Pox virus. Multiple lesions are very common (> 100 lesions) usually at genitialia, groin, suprapubic area and face.

Treatment: cryosurgery, curettage, topical retinoic acid apply on the face before bedtime or 0.05% tretinoin solution twice a day for 4 days, 25-35% TCA follow by podophyllin leave it for 4 hours and wash off, and topical 5 Fluoro Uracyl.

Fungal infection

1. Dermatophytosis

Most common are tinea pedis, tinea corporis and onychomycosis. The organism is Trichophyton rubrum. These infections are usually similar in appearance to those seen in non-HIV infected persons but are more widespread.

Treatment :

Topical broad-spectrum antifungal e.g. topical terbinafine

Systemic antifungal therapy e.g. griseofulvin

Resistant case, itraconazzole 200 mg/day for 3 months or terbinafine 250 mg/day for 3 months

2. Pityrosporum infection

a) Seborrheic dermatitis

Between 30-80% of patients with AIDS have seborrheic dermatitis. Patients often have thick, greasy, scaly papules and plaques on the scalp, face and chest.

Treatment with ketoconazole cream and shampoo has been found to reduce the population of organisms. It is often appears early in HIV infection, and HIV infection should be suspected in any young person from an 'at risk' group who has seborrheic dermatitis.

b) Tinea versicolor

Other manifestation of pityrosporum infection treatment same as above, relapse rate are high especially in HIV infection.

3. Candidiasis

Oral candidiasis is the most common oral opportunistic infection seen in patients with HIV infection, occuring in than 90% of HIV positive patients. The infection appears as white plaques on an erythematous background with superficial erosion commonly occuring on the buccal mucosa, the palate or the dorsal surface of the tongue.

Oropharyngeal candidiasis can be divided into 4 types :

a) Pseudomembranous

b) Atrophic (Erythematous)

c) Hyperplastic

d) Angular Cheilitis

4. Systemic fungal infection

a) Cryptococcosis

b) Histoplasmosis - disseminated histoplasmosis

c) Sporotrichosis

d) *Penicilliosis marneffei* is an unsual dimorphic fungus that can cause human infection in compromised hosts. This is endemic in SEA and Southern part of China. In Thailand *penicilliosis marneffei* infection is classified as one of the AIDS-defining condition.

The characteristic eruption is a generalized papular rash with predilection for the face, upper trunk and arms. The papules have central necrotic umbilication resembling lesions of *Molluscum contagiosum*.

5. Arthropod infestation

Scabies-crusted (Norwegian) scabies caused by an acarus or mite, Sarcoptes scabiei var. hominis. The HIV patient presented with generalized scaly hyperkeratosis.

Non - Specific Dermatitis

1. Papulosquamous disorder

a) Pruritic papular eruption (PPE)

PPE is common manifestation of HIV infection in tropical climates. It appears as excoriated hyperkeratotic hyperpigmented papules which involve extremities, trunk or face in varying degrees. The cause of these lesions is unknown and they are only partially responsive to treatment with antihistamine or corticosteroids.

b) Psoriasis vulgaris

The incidence is about 5-13% (in normal population is about 1-2%). In HIV patients, the lesions are more severe and usually associated with sebrorrhoeic dermatitis. Secondary infection from candida, staphylococcus and streptoccous are common.

c) Exfoliative erythroderma

d) Drug reactions

In HIV infection patients, drug reactions are 10 times more common compare to normal population. The common drugs are; sulfonamide, Phenytoin hypersensitivity reaction, Zidovudine and anti-tuberculous drug (INH and rifampicin).

2. Miscellaneous skin lesion

a) Acquired trichomegaly of the eyelashes

b) Recurrent aphthous ulcers

c) HIV-associated gingivitis and periodontitis

d) Pigmentary change

e) Xerostomia

Neoplasm

1. Kaposi's sarcoma

95% of the Kaposi's sarcoma patients are among homosexual or bisexual man. It is very common neoplasm in HIV-infected patients in the West, is rarely associated with HIV disease in this region.

2. Lymphoma

Non-Hodgkin's B - cell lymphoma, CTCL (Cutaneous T-cell Lymphoma)

3. Squamous Cell Carcinoma (SCC) and Basal Cell Carcinoma (BCC)

HIV Serosurveillance in Thailand: Result of the 15th Round, June 1997 (Division of Epidemiology, Ministry of Public Health. Thailand.).

HIV prevalence among direct female commercial sex workers (CSWs) in the last survey was at 26.1% and among indirect CSWs was 8.3%. Prevalence of both groups is lower than last year and show declining trend over the last three years.

Male sex workers in four tourist provinces (Pattaya, Chonburi: Chiang Mai: Bangkok: Phuket) showed median prevalent of 15.8%.

Among male STDs the prevalence showed a little decrease from around 8% in recent year to 7% this year.

The results of IDUs, from 31 provinces, showed the rate of 40% which was same level as before.

HIV serosurveillance in Thailand has been done since June 1989 until now (Almost 9 years). This preliminary result confirmed the stabilized and downward trend of HIV prevalence in the high risk and general population. It is important now for the National AIDS program to maintain the momentum of prevention program especially during the economic crisis of the country and pay close attention to provinces with high prevalent. With effective prevention the nation can save a lot of its budget for care of AIDS cases.

Table I. Prevalence of Skin Disorders in 248 HIV-Positive Thai Patient (1996)

Skin Disorder	Prevalence (%)	Skin Diorder	Prevalence (%)
Oral candidiasis	34.3	Psoriasis	6.5
Pruritic papular eruption	32.7	Folliculitis	5.6
Seborrhoeic dermatitis	21	Genital wart	3.2
Herpes zozter	16.1	Penicilliosis marneffei	3.2
Oral hairy leukoplakia	14.9	Drug eruption	2
Herpes simplex	10.9	Scabies	1.6
Onychomycosis	9.3	Molluscum contagiosum	1.2
Cutaneous ringworm	7.7	Pityriasis versicolor	0.4

Table II. Prevalence of Skin Disorder in 525 HIV-Positice From Institute of Dermatology, Bangkok (1991-1995)

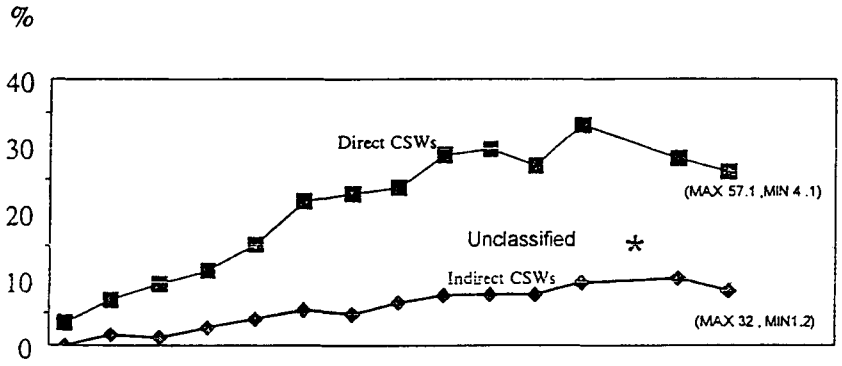
No	Skin Disorder	Prevalence (%)
1	Candidiasis	14.3
2	Herpes zoster	9.1
3	Tinea	3.9
4	Follicultis	3.8
5	Secondary syphilis	3.3
6	Oral hairy leukoplakia	1.7
7	Scabies	1.3
8	Herpes simplex	0.91
9	Condyloma acuminata	0.52
10	Penicilliosis marneffei	0.4
11	Histoplasmosis	0.3
12	Molluscum contagiosum	0.3

Table III. AIDS in Thailand (1984-1997)

Most Common Opportunistic Infestion Are

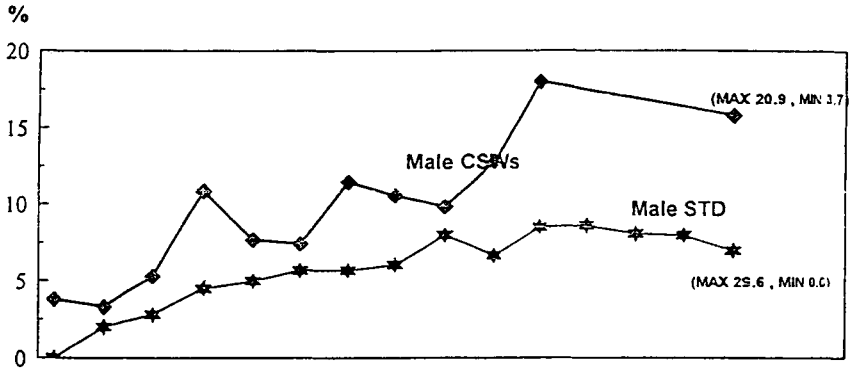
1	Wasting Syndrom	19,474
2	Mycobacterium	18,107
3	Pneumocystis Carinii	12,668
4	Cryptococcosis	12,007
5	Candidiasis	4,496

Total : 72,775 patients
Death : 19,265 (26.5%)



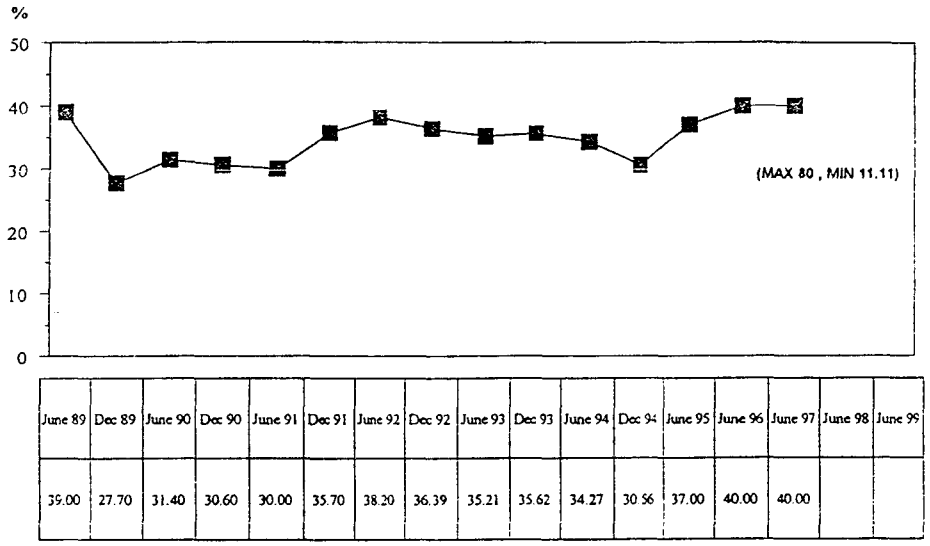
	June 89	Dec 89	June 90	Dec 90	June 91	Dec 91	June 92	Dec 92	June 93	Dec 93	June 94	Dec 94	June 95	June 96	June 97	June 98	June 99
Direct CSWs	3.50	6.90	9.30	11.30	15.20	21.80	22.90	23.86	28.70	29.52	27.02	33.15		28.17	26.14		
Indirect CSWs	0.00	1.60	1.20	2.70	4.00	5.40	4.70	6.46	7.58	7.69	7.69	9.48		10.14	8.26		
Unclassified													17.79				

Fig. 1 - HIV Prevelance among Commercial Sex Workers (CSWs), Thailand 1989 - 1997
Source : Sentinel Serosurveillance, Division of Epidemiology update on Oct 31, 1997



	June 89	Dec 89	June 90	Dec 90	June 91	Dec 91	June 92	Dec 92	June 93	Dec 93	June 94	Dec 94	June 95	June 96	June 97	June 98	June 99
Male STD	0.00	2.00	2.80	4.50	5.00	5.70	5.70	6.06	8.00	6.67	5.50	8.60	8.08	8.00	7.00		
Male CSWs	3.80	3.30	5.30	10.85	7.69	7.43	11.42	10.53	9.82	12.75	18.00				15.80		

Fig. 2 - HIV Prevalence among male STD, and male CSWs, Thailand 1989 - 1997
Source : Sentinel Serosurveillance, Division of Epidemiology



June 89	Dec 89	June 90	Dec 90	June 91	Dec 91	June 92	Dec 92	June 93	Dec 93	June 94	Dec 94	June 95	June 96	June 97	June 98	June 99
39.00	27.70	31.40	30.60	30.00	35.70	38.20	36.39	35.21	35.62	34.27	30.56	37.00	40.00	40.00		

Fig. 3 - HIV Prevalence among IDUs, Thailand 1989 - 1997
Source : Sentinel Serosurveillance, Division of Epidemiology update on Oct 31, 1997

References

1. Anthony du Vivier, *Atlas of clinical dermatology,* second edition 1986 by Gower Medical Publishing London, New York.
2. *Dermatology 2000*, Holistic Publishing Bangkok Thailand, Jan 1997
3. HIV Serosurveilance in Thailand, *Result of the 15th Round*, June 1997, Division of Epidemiology, Ministry of Public Health.
4. Rook, Wilkinson, Ebling., *Text Book of Dermatology*, fith edition 1992 Blackwell Scientific Publications
5. Sivayathorn A, *Viral Therapy for GPs, A Focus on HIV* , issue VII May 1996.