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Assessment of dermatological lesions in HIV reactive patients: A Histopathogical Evaluation

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Abstract
The possibility of adverse drug reaction should always be included in the differential diagnosis of any inflammatory dermatomes in HIV positive patients. Drugs may give rise to variety of histological patterns e.g. lichinoid, spongiotic, pustular, vesiculobullous and urticarial reaction. There are only few such reports from India. Therefore, this study was conducted to determine the pattern of histopathogical study of dermatological lesions in HIV reactive patients. The study was planned on 20 patients in the Department of Pathology in Mata Gujri Memorial Medical College & Lions Seva Kendra Hospital Kishanganj, Bihar from Aug 2017 to July 2018. The patients found HIV positive and observed with the dermatological legions were enrolled in the present study. All the patients were screened for mucocutaneous disorders by an experienced dermatologist. The clinical diagnosis was confirmed with laboratory procedures like microscopy (KOH preparations, Tzanck smear) and histopathological evaluation whenever necessary. Skin diseases were more common in males than females. There is a change in spectrum of skin diseases seen previously – maybe because of environmental issues such as global warming or depletion of ozone layer or use of chemicals. Histopathological correlation is therefore pivotal in the accurate diagnosis of many HIV induced skin diseases. The histopathological examination of such lesions helps in confirming the diagnosis as they have high sensitivity and specificity values.

Keywords: Histopathogical, dermatological lesions, HIV reactive patients, etc.

Introduction
HIV-infected persons commonly have cutaneous abnormalities; the prevalence approaches 100 %. (1-3) some of the conditions are unique and virtually pathognomonic for HIV disease, for example, Kaposi's sarcoma (KS). Patients with HIV disease often have several simultaneous or sequential cutaneous conditions with a progressively more intransigent clinical course, a key to suspecting underlying HIV infection. In general, non-infectious cutaneous abnormalities are not prognostic of rapid progression of immunosuppression, but they may be specific markers of the stage of HIV disease. For instance, eosinophilic folliculitis virtually always occurs in persons with helper T cell counts below 200. Cutaneous abnormalities may worsen as HIV disease progresses (e.g., seborrheic dermatitis, xerosis), or they may appear anew as a fulminant process [1].

Cutaneous manifestations of human immunodeficiency virus (HIV) disease may result from HIV infection itself or from opportunistic disorders secondary to the decline in immune competence from the disease. 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 noninfectious skin eruptions has been enhanced. 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 modalities [2].

Human immunodeficiency virus (HIV) infection and the acquired immunodeficiency syndrome (AIDS) have become major health problems in the india, and patients with manifestations of these diseases are seen by physicians in all areas of medicine. Cutaneous manifestations develop in as many as 92% of HIV-positive persons. Familiarity with these manifestations facilitates early diagnosis and enhances the care of HIV-infected patients. The spectrum of mucocutaneous disorders in these patients includes an acute exanthem, multiple infections, neoplastic processes, and miscellaneous disorders. Herein we review the most common and the most specific dermatologic manifestations associated with HIV infection, which often are atypical, more severe, or less responsive to treatment than the corresponding diseases encountered in non-HIV-infected persons.

The human immunodeficiency viruses (HIV), types I and II, are distinct human retroviruses that are responsible for the development of the acquired immunodeficiency syndrome (AIDS) [3-4]. These viruses preferentially infect the CD4-positive helper/inducer T lymphocyte and monocyte-macrophage populations; thereby they create a probable reservoir for HIV in the fixed-tissue macrophages and

decrease the number and function of helper T cells. The helper/inducer T-cell abnormalities also lead to secondary perturbations in the CD8 cytotoxic/suppressor T lymphocytes, natural killer cells, and B cells. The result is a severe defect in cell-mediated immunity and thus susceptibility to numerous infectious and malignant processes [3-5].

Dermatological conditions are common at all stages of human immunodeficiency virus (HIV) infection. Cutaneous manifestations of HIV can present as the initial sign of HIV infection either as part of a seroconversion illness or in association with infectious, inflammatory and neoplastic diseases, or even as a cutaneous drug reaction. Since the advent of combination antiretroviral therapy (ART), dermatological presentations are increasingly encountered in the setting of immune reconstitution inflammatory syndrome (IRIS).

Although a few skin conditions occur almost exclusively in people with HIV infection, in general, the spectrum of dermatological conditions is similar to that found in the general population. These general dermatological problems may present as classically seen, or be found more frequently, or be atypical in presentation. Depending on the degree of immune suppression involved they are often less responsive to the usual therapies. Dermatological disease is a common presentation of IRIS and may associate with other organ involvement. With the restoration of the immune system the prognosis for resolution of skin disease is generally good [6].

The most common and some of the uncommon mycoses seen in patients of AIDS are Candidiasis, Cryptococcosis, Histoplasmosis, Aspergillosis and Dermatophytes:6 Other fungal infection that are also seen in HIV patient are Coccidioidomycosis, Blastomycosis, Penicilliosis & Sporotrichosis and Pneumocystis jiroveci (Pneumocystis carinii).

The possibility of adverse drug reaction should always be included in the differential diagnosis of any inflammatory dermatomes in HIV positive patients. Drugs may give rise to variety of histological patterns e.g. lichinoid, spongiotic, pustular, vesiculobullous and urticarial reaction. There are only few such reports from India. Therefore, this study was conducted to determine the pattern of histopathogical study of dermatological lesions in HIV reactive patients.

Methodology

The study was planned on 20 patients in the Department of Pathology in Mata Gujri Memorial Medical college &Lions Seva Kendra Hospital Kishanganj, Bihar from Aug 2017 to July 2018. The patients found HIV positive and observed with the dermatological legions were enrolled in the present study. All the patients were screened for mucocutaneous disorders by an experienced dermatologist. The clinical diagnosis was confirmed with laboratory procedures like microscopy (KOH preparations, Tzanck smear) and histopathological evaluation whenever necessary.

The approval of the institutional ethical committee was taken prior to the conduct of the present study. All the patients were informed consents. Following was the inclusion and exclusion criteria for the present study.

Inclusion Criteria: All biopsies that showed definite signs of any specific pathology were included.

Exclusion Criteria: All skin biopsies that didn't showed definite signs of any specific pathology or inadequate were excluded. Oral mucosa biopsies were excluded.

Patients' history such as age, sex and other relevant clinical details such as site of lesion & character were noted/ provided by dermatologist. All tissue specimens were subjected to gross examination & all dimensions were taken from archives.

Results & Discussion

The data from the 20 HIV patients having dermatological legions were collected and discussed with the previous literature findings as below.

Skin is the most commonly affected organ in HIV. Cutaneous findings in HIV are frequent and include viral, fungal, bacterial and non-infectious etiologies, which not only serve as marker of HIV infection but also a marker of stage of HIV disease. However the morphological pattern of skin lesion in HIV is often non-diagnostic. Histopathological correlation is therefore pivotal in the accurate diagnosis of many HIV induced skin diseases. The study was done to observe the morphological lesions where the confirm clinical diagnosis could not be made and skin biopsies of lesions are taken to do the histopathological confirmation.

Table 1: Background Parameters

Parameters	No. of Cases
Males	13
Females	7
Age	35 – 65 years
Route of Transmission	
Heterosexual	15
Homosexual	1
Intravenous Drug Abuse	1
Blood Transfusion	2
Unknown	1
Partner Affected	12
Dead	5
Not Affected	3
Patients of Highly Active ARV therapy	12

Table 2: Histopathological and clinical diagnosis

Sr. no.	Histopathological and clinical diagnosis	No. of patients (%)
1	Dermatitis: Atopic Dermatitis, Ashy dermatitis, urticaria, Hyperpigmented patch, chronic non-specific dermatitis	3
2	Papular lesion: Pruritic popular, Psoriasis, Seborrhoic Dermatitis, Eosinophilic folliculitis, Scaly lesion, Lichen planus	3
3	Epidermal Lesion:- Epidermoid cyst, Seborrhoic keratosis	2
4	Viral lesion:- Warts, Condyloma Lata, Molluscum contagiosum	2
5	Bacterial infections:-Chanchroid, Hansens, Tuberculosis verrucosa cutis, Folliculitis, Pustular lesion, Lupus	2
6	Fungal infections:- Candidiasis, Cryptococcus, Histoplasma, TineaCorporis	2
7	Parasitic &Protozoal infections:- Leishmaniasis, Scabies	0
8	Drug reaction	0

9	Vascular lesion:- Leukocytoclastic vasculitis, Granuloma Pyogenicum	1
10	Connective tissue lesion:- DLE, Granuloma Annulare	1
11	Malignant/Premalignant lesion:- Verrucous Carcinoma, Squamous cell carcinoma, Bowenoid papulosis	1
12	Vesiculobullous lesion:- Pemphigus vulgaris, Bullous pemphigoid, Bullous impetigo, Erythema Multiforme	1
13	Others:- Follicular keratosis, Perforating folliculitis	2
	Total	20

It has been concluded that the lesions which are most difficult to diagnose clinically are the papular eruptions, followed by dermatitis and bacterial infections. The papular skin lesions include wide variety of lesions for which treatment and prognosis differs, histopathological confirmation is therefore required for proper treatment. Various histopathological diagnosis given after examining the biopsies of these papular lesions are – pruritic papular eruption, lichen planus, psoriasis, eosinophilic folliculitis, pustular psoriasis. Common dermatitis found in HIV seropositive patients which are difficult to differentiate clinically are – ashy dermatitis, pustular dermatoses, chronic nonspecific dermatitis, and post inflammatory hyperpigmentation. Among the bacterial lesion Hansens, lupus vulgaris, tuberculosis verrucosa cutis, and suppurative folliculitis are common [7-9].

According to Mohd Yunus *et al.* (2004) [10], papulosquamous diseases were seen more in males in comparison to females. Nailesh G. Patel *et al.* (2010) [11] found 6% cases of psoriasis on clinical examination. Our study found 4.5% proven cases of psoriasis on histology. According to Mohd Yunus *et al.* (2004) [10], psoriasis is a common papulosquamous disorder of unknown etiology showing a wide variation in severity and distribution of skin lesions and it was seen in 4.5% cases. Molluscum contagiosum & warts were commonly seen in age group which have predilection for activities or circumstances that involve skin-to-skin contact (e.g., play, sports such as wrestling, sexual activity, etc.), and thus, have been associated with increased risk for infection [12]. According to Mohd Yunus *et al.* (2004) [10], lichen planus may affect all the ages and incidence is equal in both sexes but distinctly rare in children – the same was seen in our study.

The early and accurate diagnosis of many HIV induced lesions help in guiding the treatment and predicting the prognosis. In our study we have diagnosed seven patients with lepsosy / HIV co-infection. HIV patients concomitantly infected with leprosy may not show any signs of that disease due to diminished cell mediated immunity (CMI) but could be a source of infection to healthy community. Since most of the clinical signs of leprosy are cell mediated immunity dependant, when HIV positive patient receive the antiretroviral treatment the cell mediated immunity improves and clinical disease manifests. Drastic improvement is seen in these patients when they are started on anti-leprotic treatment along with the anti-retroviral treatment [13].

Conclusion

Skin diseases were more common in males than females. There is a change in spectrum of skin diseases seen previously – maybe because of environmental issues such as global warming or depletion of ozone layer or use of chemicals. Histopathological correlation is therefore pivotal in the accurate diagnosis of many HIV induced skin diseases. The histopathological examination of such lesions helps in confirming the diagnosis as they have high sensitivity and specificity values.

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