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Original Research Article

Histopathological Patterns of Skin Manifestations of HIV/AIDS in JOS, North Central Nigeria

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ABSTRACT

Objectives: To determine the common skin manifestations among HIV/AIDS patients over a one year period and correlates with CD4 + lymphocytes counts.
Methods: A one year prospective cross-sectional histopathological analysis of 150 cases of skin manifestations among HIV/AIDS patients diagnosed in the Department of Pathology, Jos University Teaching Hospital, Plateau State Nigeria from December, 2010 to November, 2011.
Results: A total of 150 incisional biopsies were taken from HIV patients and analyzed. The male to female (M:F) gender ratio was 43:107 (1:3) spectrum of skin lesions in HIV/AIDS was Kaposi sarcoma 68 (45.3%), psoriasis 16 (10.6%) molluscum contagiosum 1 (10%), Lichen Planus 13 (8.7%) condyloma acuminatum 8 (5.3%), dermatitis herpetiformis 8 (5.3%), Eosinophilic Folliculitis 6 (4.0%) Malignant melanoma and Pemphigus vulgaris 5 (3.3%), Seborrhoeic Keratosis 3 (2.0%) Nevus sebaceous, squamous cell carcinoma (SCC) and Basal cell carcinoma (BCC) 1 (0.7%).
Conclusion: This study demonstrates that, Kaposi sarcoma remains the most common skin lesion among HIV/AIDS patients in Jos and cutaneous manifestations can be considered as a good clinical indicator for immune status in an individual. Adequate tissue biopsy and early diagnosis with commencement of HIV drugs may reduce the disorder.

Keywords: Skin, HIV/AIDS, JOS, North-Central Nigeria.

INTRODUCTION

The skin is the largest organ in the body and is composed of many types of cells. [1,2] Skin disease is a major problem in tropical countries like Nigeria where the weather is hot and humid. [3] About 90-98% of HIV infected persons have skin disorder which may be atypical and resistant to regular medications. [4,5] skin disease can be the only presentation of HIV disease in some patients and can not only act as markers of the disease but also reflect the patients underlying immune status. [6]

Our objective in this study is to determine the common skin manifestations among HIV/AIDS patients and correlates them with CD4+lymphocytes counts.

MATERIALS AND METHODS

This was a prospective study of 150 HIV/AIDS patients attending Aids Preventive Initiative of Nigeria (APIN) clinic in the Teaching Hospital in Jos who had skin changes that are characteristic of HIV/AIDS for a period of one year from December 2010 to November 2011.

A total of 150 punched skin biopsies were taken and analysed in the Department of Pathology of Jos University Teaching Hospital, Jos North Central Nigeria in a 10% formalin and processed in paraffin wax. Histology slides stained with hematoxylin and eosin (H and E) were reviewed. Clinical information and bio-data of patients such as HIV screening results confirmed by ELISA methods,CD4+ lymphocytes counts were extracted from patients folder.

RESULTS

The age ranges from 5-60years with a peak age of 35 years and male to female gender ratio of 43:107 (1:3).

The spectrum of lesions encountered as patterns of skin manifestations of HIV/AIDS was categorized into malignant, inflammatory, infectious and others (Table1). The most common malignant skin lesion was Kaposi sarcoma (KS) 68 (45.3%) with M:F 1:2 with lower limb most frequently affected site, psoriasis 16 (10.6%) with M:F 1:7 was the most common inflammatory skin disease with lower limbs most frequently affected site. Molluscum contagiosum 15(10%), 6(4%) male, 9(6%) females) with M:F 2:3 was the most common infectious skin disease with the face most frequently affected site. Lichen planus 13(8.66%), 3(2%) males 10(6.66%) females with M:F 1:3.Condyloma accuminata 8 (5.3%), Eosinophilic folliculitis 6 (4%), Malignant Melanoma 5 (3.3%), Pemphigus vulgaris 5 (3.3%), Seborrhoiec keratosis 3 (2.0%).

Nevus sebaceus, squamous cell carcinoma and Basal cell carcinoma was 1 (0.7%) each, The prevalent site distribution of these lesions were the lower limbs.

In this study skin manifestations occurs more with low CD4+counts. Fifty three (35.3%) out of 150 skin lesions with CD4+< 200cell/µl, 65(43.3%) out of 150 skin lesions with CD4+counts of between 200-499 cells /µl and 33(22%) out of 150 skin lesions with CD4+≥ 500 cell/µl as shown in Table2.

Table 1. Histopathological patterns of skin manifestation analysis in HIV & AIDS.

Histological diagnosis	Male	Female	Total	(%)	p-value
MALIGNANT					
Kaposi sarcoma	24 (32.4)	44 (59.5)	68	(91.9)	
Malignant melanoma	2 (2.7)	3 (4.1)	5	(6.8)	0.743
Squamous cell carcinoma	0 (0.0)	1 (1.4)	1	(1.4)	
INFLAMMATORY					
Psoriasis	2 (5.3)	14 (36.8)	16	(42.1)	
Lichen planus	4 (10.5)	9 (23.7)	13	(34.2)	0.318
Eosinophilic folliculitis	3 (7.9)	3 (7.9)	6	(15.8)	
Seborrhoiec dermatosis	1 (2.6)	2 (5.3)	3	(7.9)	
INFECTIONS					
Molluscum contagiosium	3 (10.3)	10 (34.4)	13	(44.8)	
Condyloma accuminatum	2 (6.9)	6 (20.7)	8	(27.6)	0.759
Dermatitis herpetiformis	3(10.3)	5 (17.2)	8	(27.6)	
OTHERS					
Pemphigus vulgaris	2 (33.3)	3 (50.0)	5	(83.3)	
Nervous sebaceous	1 (16.7)	0 (0.0)	1	(16.7)	0.273
TOTAL	50	100	150	(100)	

Table 2. Skin diseases correlated with CD4 lymphocyte counts (cell/µl)

Skin disease	<200	200-449	>500	
Kaposi's sarcoma	20	32	16	68
Psoariasis	4	11	1	16
Molluscum contagiosum	9	2	2	13
Lichen planus	6	3	4	13
Condyloma acuminatum	6	1	1	8
Dermatitis herpetiformis	8	-	-	8
Eosinophilic folliculitis	-	4	4	8
Malignant melanoma	-	4	2	6
Pemphigus vulgaris	-	5	-	5
Seborrhoiec keratosis	-	-	2	2
Nevus sebaceous	-	1	-	1
SCC	-	1	-	1
BCC	-	1	-	1
TOTAL	53	65	32	150

Table 3

Skin disease	<200	200-449	>500		p-value
Malignant	20 (13.3)	38 (25.3)	18 (12.0)	76 (50.7)	0.063
Non-malignant	33 (22.0)	27 (18.0)	14 (9.3)	74 (49.3)	
Total	53 (35.3)	65 (43.3)	32	150 (100.0)	

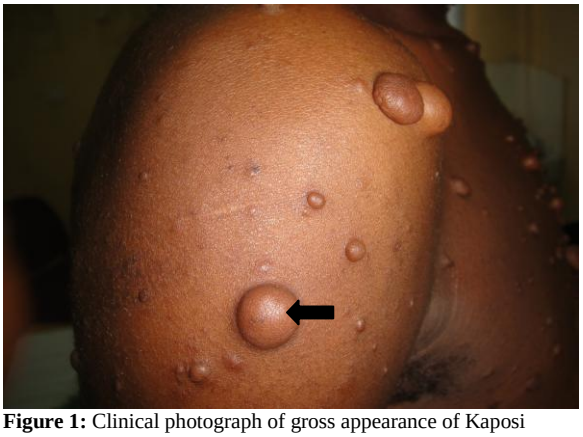

Figure 1: Clinical photograph of gross appearance of Kaposi sarcoma in a HIV/AIDS patient showing generalized skin nodules over the body, the arrow shows the biopsied nodule.

Figure 3: Clinical photograph of psoriasis in a HIV/AIDS showing hyperpigmented scaly thickened skin on the extensor surface of the right forearm.

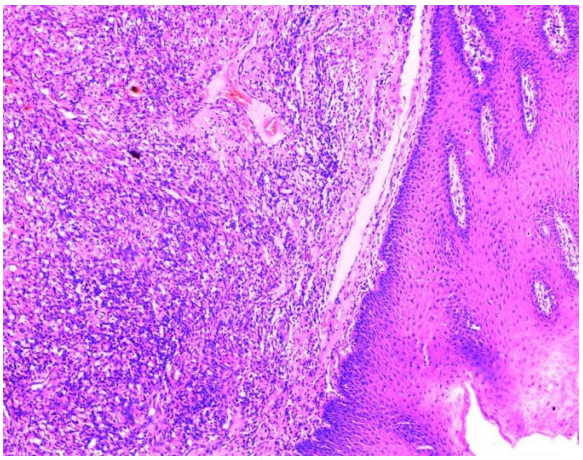

Figure 2: Photomicrograph of histology of Kaposi sarcoma showing a stratified squamous epithelium with a fibrocollagenous stroma within which are seen proliferating plumped spindle cells which are lined by slit-like vascular channels (H & E stain x 20).

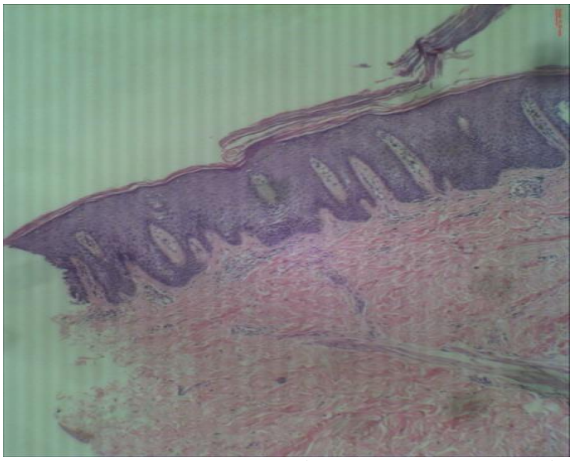

Figure 4: Photomicrograph of the skin showing stratified squamous epithelium with confluent parakeratosis with collections of neutrophils, diminished granular layer, regular epidermal hyperplasia with thining of suprapapillary plates, dilated blood vessels are also seen in the papillary dermis (H/E stain x 20).

DISCUSSION

The skin is a structurally complex organ which performs several vital functions.[7] It also has immunological functions and has T-lymphocytes with CD4+ molecules hence making it a target for HIV infections. Up to 90-98% of HIV infected patients have skin disorders which may be atypical and resistant to regular medications.[8-13] Kaposi's sarcoma was the most common in the study. Several studies have reported it as the commonest cancer in HIV/AIDS in black Africans. [14] The lower limbs were the predominantly affected sites in our study. This finding is consistent with other reports in many parts of Nigeria. [15]

Data from the Centre of Disease Control in the United States also confirmed this study,[16] and other previous International studies.[17] The incidence of Kaposi Sarcoma is highest in those areas with the highest seroprevalence of human herpes virus-8. The difference in prevalence of Kaposi Sarcoma can represent geographical and ethnic distribution of the virus. This explains the more frequent report of Kaposi Sarcoma in Northern Nigeria. [18]

Psoriasis was the commonest inflammatory skin disease. A similar trend was noted in spectrum of skin disorders in HIV/AIDS infected patients in Singapore where out of 124 patients, psoriasis ranked second after pruritic papular eruption. [19] It is relatively a common recurrent Th^{-1} mediated chronic troublesome disease. [20]

The pathogenesis of HIV-associated psoriasis is poorly understood. Several mechanisms proposed to explain the exacerbation of psoriasis in HIV infection including disruption of skin immune system; psoriasis is a chronic long live disease that affects 2% of the population worldwide. [21]

Molluscum contagiosum was the most frequent infectious skin disorder 15 (10%) with a M:F 2:3. In one study it is the most frequent in HIV-infected children (up to 5% of children in the United States), In this study, only one patient was below 5 years. However, this study agrees with the fact that it occurs in about 10-20% of HIV-infected persons. [22]

Lichen planus was the fourth most frequent skin disorder 13(8.66%) with M:F 1:3. Condyloma acuminata was the fifth most common skin disease 8(5.3%). A study from South Africa showed that condylomas are more common in immunocompromised individuals and are more extensive and resistant to treatment. [23]

Eosinophilic foliculitis was the seventh common skin diseases 6(4%). An earlier study in Lagos had found eosinophilic foliculitis as the most common skin disorder in HIV patients. [19]

Seborrhoeic dermatosis was found in 3 (2%) of HIV patients. A dermatology clinic based Lagos study had reported the prevalence of 2.87%.[19] This is in close relation to this study (2%)

In conclusion, Kaposi sarcoma remains the commonest skin lesion in HIV/AIDS which is in accordance with what is obtainable in other centres across the country and the world in general.

Also psoriasis, molluscum contagiosum, lichen planus, condylomata acuminatum as well as eosinophilic folliculitis are relatively common among HIV/AIDS patients in Jos.

The study also correlated CD4 counts as most skin diseases were prevalent with low CD4 counts.

CONCLUSION

This study demonstrates that, Kaposi sarcoma remains the most common skin lesion among HIV/AIDS patients in Jos and cutaneous manifestations can be considered as a good clinical indicator for immune status in an individual. Adequate tissue biopsy and early diagnosis with

commencement of HIV drugs may reduce the disorder.

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