Paper

Prevalence and Clinical Spectrum of Seborrhoeic Dermatitis in patients infected with Human Immunodeficiency Virus in Kano, Nigeria

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ABSTRACT

Background: Seborrhoeic Dermatitis is a common cutaneous manifestation in patient with HIV/AIDS. Its varied clinical forms may be seen at different stages of HIV/AIDS and are often the initial presenting features.

Objectives: To examine the prevalence and spectrum of SD and the relationship between various clinical forms of SD and CD4 cell counts in a hospital-based cohort of HIV-infected adults in Kano, Nigeria.

Patients and methods: All HIV patients attending the SS Wali centre (Special treatment clinic) at AKTH Kano between January 2010 and June 2011 were studied. The relationship between CD4 counts and various clinical forms of SD was analysed.

Results: A total of 631 HIV-positive patients were seen. The male: female ratio was 1: 2. The mean age of the sample was 34.6 years (range 16–60 years). The prevalence of SD in the studied population was 20.9% (132/631) patients. Localized (Scalp)/Dandruff is seen in 52 (39%) , Classic SD (scalp, face & chest) in 43 (32.5%), flexural (inverse) SD in 27 (21%), erythrodermic SD in 6 (4.5%) and psoriasiform/pityriasiform in 4 (3%) of the patients. More severe, widespread disease was observed exclusively as the CD4 count falls below 200×10^6/L

Conclusion: In atypical and severe forms, SD may represent a clinical indicator of deterioration of the underlying immunological disorder.

INTRODUCTION

Globally, it was estimated that 33.2 million people lived with HIV in 2007.[1] Sub-Saharan Africa was by far the worst affected region. An estimated 68% of all people living with HIV/AIDS and 76% of all AIDS deaths were from the region.[2] Nigeria had HIV prevalence of 4.4% with about 3.0 Million people living with the infection, which makes it the country with the second largest burden of HIV/AIDS in world.[3] Kano State, where this study was conducted had the prevalence rate of 3.4% which is slightly lower than the national average.[4]

Skin and mucocutaneous diseases are often the first indication that a patient is infected with HIV and can be seen in every stage of human immunodeficiency virus (HIV) infection.[5] The prevalence of mucocutaneous disorders in of HIV-infected patients is between 80 and 95%.[6-10] Seborrheic dermatitis (SD) is a chronic inflammatory skin disorder characterized by periods of exacerbation and remission. The overall prevalence of SD in the adult population ranges from 1 to 5 percent.[11, 12] In patients with human immunodeficiency virus (HIV) and acquired immunodeficiency syndrome (AIDS), the incidence of SD is between 30%-83%.[12-16] Seborrhoeic dermatitis in HIV-infected individuals has a broad clinical spectrum, ranging from mild dandruff to exfoliative erythroderma.[17] This study examined the relationship between the various clinical forms of SD and the CD4 cell count in patients with HIV.

OBJECTIVE

To evaluate the prevalence and the clinical spectrum of seborrhoeic dermatitis in ambulant HIV-infected individuals attending the special treatment clinic in Aminu Kano Teaching Hospital, Kano.

SETTING

The study was conducted at the S. S. Wali centre, a special treatment centre at Aminu Kano Teaching Hospital, a 500- bed tertiary referral centre situated in the heart of Kano city, the capital of Kano state, Nigeria.

METHODS

A cross-sectional observational study on HIV-positive out-patients in the Centre was performed. All consenting HIV-positive adult patients attending the special treatment clinic at S. S. Wali Centre in Aminu Kano Teaching hospital, Kano between January 2010 and June 2011 were enrolled for the study. Information on demographics, e.g., age, sex, height, weight, occupation, educational status, and possible source of infection was collected. A complete medical history and physical examination of patients were done by a dermatologist for optimal evaluation and diagnosis of dermatologic lesions on the basis of clinical appearance. Potassium hydroxide examination for hyphae and skin biopsy were performed where the diagnosis was in doubt. Patients with SD were examined for the extent and distribution of lesions. CD4 cell count was determined for any association.

Data were analyzed using the chi square test for establishing correlation between CD4+ cell counts and various dermatological disorders. P value < 0.05 was considered statistically significant.

RESULT

A total of 631 HIV-positive patients were seen. 210 (33.3%) were males and 421 (66.7 %) were females, with a male: female ratio of 1: 2. The mean age of the sample was 36.0 ± 11.9 years at presentation (range 16–60 years).

The predominant mode of transmission was through heterosexual contact in 484 patients (76.8%). Only 5 patients (1%) were infected through transfusion of infected blood. The mode of transmission could not be ascertained in 145 (32.2%) of the patients. There was no history of intravenous drug abuse or homosexual mode of transmission (table 1).

In our study population, housewives constituted the largest group 241(38.2%). They were followed by civil servants, 125 (19.8%), then manual workers, 83 (13.2%) and drivers, 71 (11.3%).Out of the 631 HIV patients examined during the study period, 132 had SD; 22 of them were in stage I (asymptomatic), 53 were in stage II whereas the remaining 57 had full-blown AIDS (table 1).

The prevalence of SD in the studied population was 20.9% (132/631) patients. Localized/Dandruff was seen in 39% of the study population(table 2), half of whom had a CD4 count above 500 x 10^6cell / L, similarly, classic SD was ` the commonest clinical form at CD4 count less than 200 x 10^6cell / L (53%), but constitute 32% of the study population (table 3, fig 7).

Twenty seven out of 132 patients had flexural SD, most of them (85%) had advanced disease (table 3). Six cases

TABLES

Table 1: Socio-demographic variables of respondents

Age of respondents	
16-24	172
25- 34	284
35-44	98
45-54	63
55 and over	14
Sex of respondents	
Males	210
Females	421
Occupation of respondents	
Civil servants	125
Farmers	29
Drivers (commercial)	38
Traders	71
Manual workers	83
Students	42
Housewives/others	241
Educational status of respondents	
Primary	125
Secondary	114
Tertiary	26
Informal	255
None	109
Marital status	
Married	332
Single	107
Widowed	150
Separated	42
Mode of transmission	
Heterosexual	484
Homosexual	0
Blood transfusion	1
Intravenous drug abuse	1
Not Known	145

Table 2:
Distribution of clinical subtypes of Seborrhoeic Dermatitis (SD)

Clinical forms	**No. of cases N (%)**
Localized (Scalp)/Dandruf	52 (39.4)
Classic (Scalp, face & chest)	43 (32.6)
Flexural (inverse) SD	27 (20.5)
Erythrodermic S D	6 (4.5)
Psoriasiform/pityriasiform	4 (3.0)
Total	**132 (100)**

Table 3: Distribution of clinical subtypes of Seborrhoeic Dermatitis (SD) by CD4 lymphocytes cell count

	CD4 lymphocyte counts (10^6 cell / L)			
	>500	200–500	≤200 cells/L	Total (%)
Localized (Scalp)/Dandruff	28	16	8	52(39.4)
Classic (Scalp, face & chest)	9	10	24	43(32.6)
Flexural (inverse) SD	1	3	23	27(20.5)
Erythrodermic S D	0	0	6	6(4.5)
Psoriasiform/pityriasiform	0	0	4	4(3.0)
Total (%)	**38(28.8)**	**29 (22.0)**	**65 (49.2)**	**132**

A CD4 cell count of less than 200 x 10^6cell /L was significantly associated with Extensive SD (P = 0.003) [odds ratio (OR), 6.76; 95% confidence interval (CI), 1.60- 27.16; P = 0.009],

Figure 1: Classic SD with scaly eruptions in the eyebrow and nasolabial area

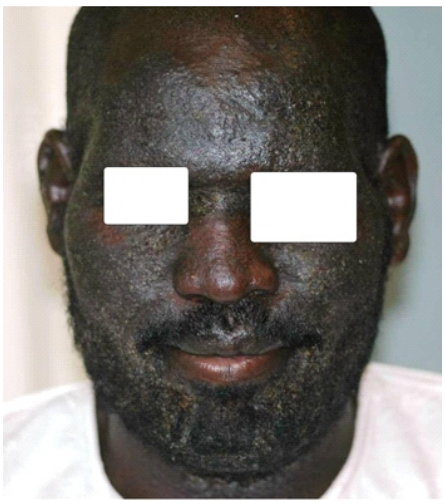

Figure 2: Extensive SD with greasy scales

Figure 3: Pityriasiform/ Psoriasiform SD

Figure 4: Flexural SD showing eruptions in the axillae and the groin

Figure 6: Erythrodermic S D

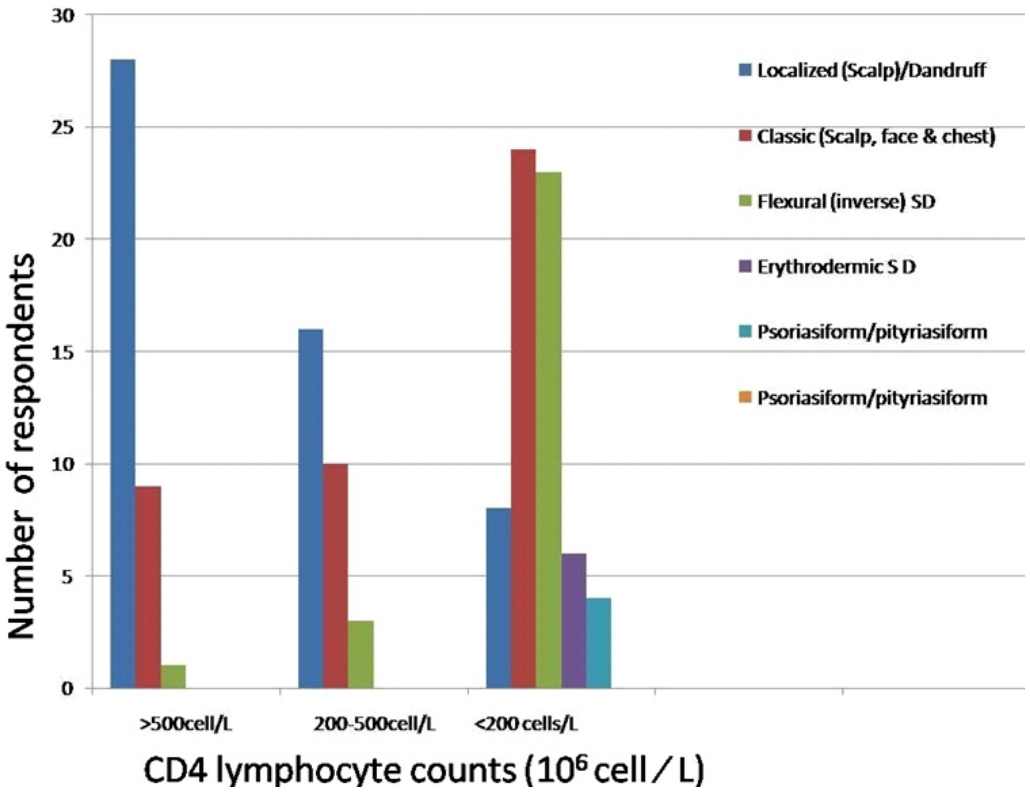

Figure 7: Distribution of patients by clinical form of SD and CD4 category

of erythrodermic and 4 cases of pityriasiform SD were exclusively seen in stage III patients (CD4 ≤200 cells/L).

DISCUSSION

We studied 631 patients, 210 males and 421 females, giving a Male to Female ratio of 1: 2. Various sentinel surveys have shown that females have a higher risk of acquiring HIV infection.[4, 15, 16] According to UNAIDS, 60% of HIV infected individuals in sub-Saharan Africa are females.[17] In Nigeria, adolescent girls were estimated to be three times more vulnerable than boys[16]. Our male to female ratio of 1:2 therefore reflects the general trend in Nigeria. Majority of these patients were under 35 years of age. HIV still affects the productive segment of the population. Although figures from latest surveys showed that HIV prevalence is declining,[18] this indicates that despite health education and awareness campaigns, transmission of the virus is still going on. Majority of our subjects admitted to heterosexual routes as the main mode of their HIV acquisition. This is the trend all over Africa[16]. Although homosexuality is known to be rarely practiced, it still remains a taboo and coming out in the open is generally not done in Africa.[15,] This may explain why none admitted to its practice. One person each admitted intravenous drug use and blood transfusion as the mode of HIV acquisition. Generally, IVDU is very rare in Nigeria.[15] A national HIV seroprevalence survey conducted in 2005 identified heterosexual mode of transmission in 80% of Nigerians. Blood transfusion related HIV acquisition was said to be the second commonest mode of acquisition.[4] A blood-borne transmission though possible may be difficult to establish and thus may equally be a way to avoid stigma.

Right from the beginning of the HIV epidemic more than 30 years ago, the presence of dermatologic conditions like herpes zoster, Kaposi sarcoma and oral candidiasis has had a strong role in predicting HIV seropositivity. In the general population, SD has a prevalence of 1-5%.[13] It was Eisenstat in 1984 that first noted the association of SD and acquired immunodeficiency syndrome.[20, 21] Since then several studies have been conducted globally which showed that HIV infected individuals have a higher prevalence of SD, although the figures varied greatly. For instance, Uthayakumar *et al*[22] in 1997 and Munoz-Perez *et al*[23] in 1998 both independently found SD to be the most frequently diagnosed skin disorder in HIV-infected patients in temperate settings. SD was also the most common HIV-related dermatological manifestations with the prevalence of 74.16% (89/137) from a study of 137 HIV-positive subjects in a tertiary care hospital in the tribal Bastar region of Chhattisgarh, India[24]. A similar study in France by Spira *et al*[25] in 1998 found seborrhoeic dermatitis to be the second most common skin manifestations in HIV/AIDS patients. Reduced immune surveillance associated with T cell lymphopenia may be responsible for the observed increase in the prevalence of SD in this population. SD is considered by many authors as an early manifestation of AIDS particularly if it appears for the first time or it showed sudden deterioration[20].

In this study, the prevalence of SD is 20.9%. This is similar to what Hengge *et al*[26] (25.3%) and Goh *et al*[27] (21.2%) reported. It is however, lower than what Wowanitkit[28] (46.7%), Rapentigny[29] (65.3%) and Tzung et al[7] (91.4%) reported but higher than what El Nour[30] (13.3%), Spira (14.0%) and Feroughi[31] (13.8%) reported. This worldwide variation of the prevalence of SD may be explained by genetic heterogeneity. The aetiology of SD is poorly understood. Although the presence of Malassezia spp on the skin plays a role, other factors like HLA type are also involved. In his 1976 study, Tsuji observed an increased frequency of HLA-AW30 and/or AW31 and HLA-B12 in patients with SD[20].

The spectrum of SD in our patients ranged from mild scalp involvement to very extensive disease. Nearly 90% (33/37) who had severe/extensive forms of SD in our study had a CD4 count of <200. A CD4 count of <200 was significantly associated with extensive SD (P<0.001). In this study, all patients with flexural and erythrodermic SD had a CD4 cell count less than 200. It will appear from the study that having flexural or erythrodermic SD may be associated with severe immunosuppression in HIV patients. This finding is in agreement of what Schechtman et al[32] and Goh et al[27] reported that there was a trend between severity of SD and low CD4 count in HIV-infected patients.

CONCLUSION:

SD is an important skin manifestation of HIV/AIDS. In atypical and severe forms, SD may represent a clinical indicator of deterioration of the underlying immunological disorder.

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