ORIGINAL ARTICLE

Prevalence Of HIV - Related Oral Lesions In Nigerian Women

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ABSTRACT

Background: *Human immunodeficiency virus (HIV) infection affects an increasing number of women throughout the world. Oral lesions are among the earliest clinical manifestations of HIV infection and are associated with its progression. We describe the oral manifestations of HIV/AIDS in Nigerian women and its clinical correlates.*

Methods: *Nigerian women with HIV/AIDS were examined for the presence of oral lesions attributable to HIV/AIDS. These lesions were diagnosed clinically, according to the criteria established by the European Community Clearinghouse (ECC) on oral problems related to HIV infection.*

Results: *Two hundred and sixty-nine sero-positive women were examined with a range of 17-60 years (mean of 32.4 years < 8.09). The age group of 21 30years was the worst affected (n = 125, 46.5%). Of these patients, 109 (40.5%) were married, 67 (24.9%) were single while 47 (17.5%) had multiple sexual partners. One hundred and eighteen (43.9%) had at least an oral lesion associated with HIV/AIDS. The most common was oral candidiasis, which was present in 98 (36.4%) patients. Pseudomembraneous candidiasis (n=66, 24.5%) and angular cheilitis (n=23, 8.6%) were the commonest variants seen. The former was the only lesion significantly associated with the clinical stage of the infection (p=0.002) while necrotizing gingivitis, linear gingival erythema and angular cheilitis were associated with the age of the patients (p<0.05).*

Conclusion: *Oral manifestations are common features of HIV infection among Nigerian women. Oral candidiasis (OC) was the most notable oral lesion associated with HIV/AIDS. It may be a useful clinical indicator of early immune dysfunction mediated by HIV.*

KEY WORDS: *Oral manifestations; HIV/AIDS; Candidiasis; Women.*

Paper accepted for publication 2nd February 2005

INTRODUCTION

There is an increasing awareness that gender differences affect both health and disease[1]. Women experience HIV/AIDS differently from men. For example, women have a higher risk than men for contacting HIV through heterosexual intercourse and they progress to AIDS at lower viral load levels and higher CD4 counts than men[2]. There are also a number of HIV-related conditions that occur solely or more frequently in women than men; notable among these are those that relate to gynaecological manifestations, especially vulvovaginal candidiasis, pelvic inflammatory diseases (PID) and cervical dysplasia. Other common HIV disease manifestations among women and men are oral and oesophageal candidiasis, herpes simplex virus infection and cytomegalovirus infection[2].

Oral lesions are among the earliest clinical manifestations of HIV infection and are associated with disease progression[3, 4-6]. These lesions can serve in several HIV disease staging[7,8] and classification designation because of their prognostic significance[9] and diagnostic simplicity requiring no sophisticated laboratory tests[3,10].

Oral examination of HIV infected individuals is of great importance, not only because it is an uncomplicated procedure, but also because of its valuable clinical information[3]. These lesions can cause pain, discomfort and other symptoms and in most cases warrant treatment[4]. It appears that the prevalence of oral lesions among HIV positive women and its clinical correlates in Nigeria have not been fully explored. In this study, we investigated the oral mucosal conditions in a group of HIV positive women to determine the relationships between the observed oral lesions and their ages, route(s) of transmission and the clinical stage.

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MATERIALS AND METHODS

This was a prospective study of HIV sero - positive Nigerian women living in and around Jos, Plateau state, Nigeria. They were seen at the Special Treatment Clinic (STC) and the Medical wards of the Jos University Teaching Hospital (JUTH) between June 2002 and February 2003. The study protocol was approved by the Ethics Committee of the hospital and informed consent from all the patients were obtained prior to data collection.

Examinations were carried with patients lying supine with the aid of a hand held light. Oral lesions were diagnosed clinically, according to the criteria established by the European Community Clearinghouse on oral problems related to HIV infection[8]. Demographic and clinical data were recorded on an adapted form which WHO recommended[11].

These examinations were conducted by a dentist (TOO). All patients examined were those who had not commenced the use of any anti-retroviral drug. Appropriate treatment and advice on oral health were given as necessary.

Statistical analyses of all data were done using SPSS software version 8.0 and P values <0.05 were considered statistically significant. Association of baseline characteristics was made by means of Pearson's Chi Square test for qualitative variables.

RESULTS

Demographic and Clinical data of the study samples. A total of 269 HIV sero-positive women were examined with age range of 16-70 years and a mean of 32.4 ± 8.09 years. The overall age distribution of the examined women showed that 95.2% of the women were in the age bracket of 20-49 years. The age group of 21-30 years was the most affected (n = 125, 46.5%). Thirty (11.2%) patients were students in various tertiary institutions and 116 (43.1%) had a form of tertiary education. Twenty-two (8.2%) had no formal education. One hundred and one (37.5%) women were civil servants. One hundred and nine (40.5%) were married, 67 (24.9%) were single, while 65 (24.2%) were widowed. Forty-seven (17.5%) women had multiple sexual partners. Other demographic and baseline characteristics of the subjects are summarized in Table I.

Heterosexual contact accounted for 229 (85.1%) of the modes of HIV transmission. Two hundred and fifty-three (94.1%) of the population's HIV status had undergone confirmation using a Western Blot based technique. According to the Center for Disease Control (CDC) clinical staging of 1992[12], 222 (83%) of the women fell into group 4 with full blown lesions of various opportunistic infections. Others were as follows: group 2, (15.3%), group 1, (1.1%) and group 3, (0.7%) (Table II).

Prevalence of oral lesions

Of the 269 women examined, 118 (43.9%) had at least an oral lesion associated with HIV/AIDS and 35 (13%) had multiple oral lesions (Table II). The mean number of lesions reported in each patient was 1.4 with a maximum of 4 lesions per patient. Oral candidiasis (OC) was the most common oral lesion seen in 98 (36.4%) patients. Out of these number, pseudomembraneous candidiasis (n = 66, 24.5%) and angular cheilitis (n = 23, 8.6%) were the commonest variants seen. This is followed by linear gingival erythema (5.6%) and then xerostomia (3.7%). Oral hairy leukoplakia was evident in 9 (3.3%) of the women seen while Kaposi's sarcoma was seen in 4 women (1.5%) (Table III).

Associations between the occurrence of oral lesions and patient's age, route of transmission and clinical stage.

Statistically significant relationships were found between necrotizing gingivitis, linear gingival erythema and angular cheilitis with the age of the patients ($p<0.05$) (Table IV). Apart from the association between recurrent aphthous ulcers, necrotizing gingivitis and linear gingival erythema with the route of transmission ($p<0.05$), no other relationship was evident between any type of oral lesion and the route of transmission ($p>0.32$). Pseudomembraneous candidiasis was significantly associated with angular cheilitis ($p = 0.001$) and it was the only lesion associated

with the clinical stage of the infection (p = 0.002).

Table III. Prevalence of oral manifestations of 269 HIV positive Nigerian Women attending JUTH.

Type	Total	
Any oral disease		
Candidal lesion	N	%
1. Pseudomembraneous Candidiasis	66	(24.5)
2. Angular Cheilitis	23	(8.6)
3. Erythematous Candidiasis	9	(3.3)
Total	98	(36.4)
Gingival/ Periodontal lesions		
4. Linear gingival erythema	15	(5.6)
5. Necrotizing Gingivitis	7	(2.6)
6. Necrotizing Periodontitis	4	(1.5)
Total	26	(9.7)
7. Oral hairy leukoplakia	9	(3.3)
8. Herpes labialis	2	(0.7)
9. Herpetic Stomatitis	2	(0.7)
10. Oral ulcerations	7	(2.6)
11. Kaposis Sarcoma	4	(1.5)
12. Enlarged salivary gland	6	(2.2)
13. Xerostomia	10	(3.7)
14. Unidentified lesions	5	(1.9)

Table I. Demographic characteristics of 269 HIV positive Nigerian Women attending JUTH.

Characteristics	Total	
	N	(%)
Educational Status		
None	22	(8.2)
Primary	60	(22.3)
Secondary	71	(26.4)
Tertiary	116	(43.1)
Marital Status		
Married	109	(40.5)
Single	67	(24.9)
Divorced	16	(5.9)
Separated	12	(4.5)
Widowed	65	(24.2)
Sexual Partners	173	(64.3)
Single	49	(18.2)
Multiple	47	(17.5)
None	0	0

Table IV. Chi-Square test of the association between oral manifestations of HIV/AIDS, age, route of transmission and the clinical stage in 269 Nigerian women. (Significant results)

Lesion + Age	χ^2	df	p-value
Linear Gingival Erythema	11.25	5	0.047
Necrotizing Gingivitis	18.62	5	0.002
Angular Cheilitis	11.91	5	0.036
Lesion + Route Of Transmission			
Linear Gingival Erythema	9.12	3	0.028
Necrotizing Gingivitis	25.16	3	<0.0001
Recurrent Aphthous Ulcers	29.04	3	<0.0001
Lesion + Clinical Stage			
Pseudomembraneous Candidiasis	13.37	3	0.04

Table II. Clinical characteristics of 269 HIV positive Nigerian Women attending JUTH

Characteristics	Total	
	N	%
Route of Transmission		
Sexual Contact	229	(85.1)
Inoculation by blood or blood components	12	(4.5)
Intravenous drug use	0	(0)
Unknown (not sure)	28	(10.4)
HIV sero - positivity status		
Confirmed positive	253	(94.1)
*Presumed positive	16	(5.9)
Clinical Stage		
CDC I	3	(1.1)
CDC II	41	(15.3)
CDC III	2	(0.7)
CDC IV	222	(82.8)
Presentation with Oral Manifestation associated with HIV/AIDS		
No Presentation	151	(56.1)
With Presentations	118	(43.9)
1 Lesion	83	(30.9)
2 Lesions	21	(7.8)
3 Lesions	12	(4.5)
4 Lesions	2	(0.7)

* Patients found to be positive after screening but had not undergone a confirmatory test.

DISCUSSION

Heterosexual contact still remains the most common mode of HIV transmission in Nigerian women from findings in this study. Unfortunately, presentations for treatment at the clinics is rather late as evidenced by the population with AIDS in our study, going by the CDC staging of 1992[12]. Candidiasis was the most common oral lesion associated with HIV/AIDS in our subjects.

Previous reports have shown that oral lesions associated with HIV/AIDS were regularly found in subjects with advanced disease[3]. Our findings of an overall prevalence of 43.9% is higher than the 39% reported by Schmidt-Westhauser *et al* in 70 German women[13] but less than the 56.6% reported among Italians[14]. It is still not clear whether these differences could be attributed to racial, communal or environmental factors.

A review of studies on the epidemiology of HIV-related oral manifestations prior to the availability of highly active antiretroviral therapy (HAART) shows a 15% - 71% prevalence with candidiasis as the most common oral lesion in HIV infected women worldwide[12]. Oral candidiasis, particularly the pseudomembranous variant, was the most frequently reported lesion associated with HIV/AIDS in our subjects. The prevalence of oral candidiasis in this study (36.4%) was higher than reports from Tanzania (20%) and Zambia (25%) but lower than that of South Africa (46%)[15].

While other studies have not demonstrated an association between age and oral lesions,[3,13] these were not reproduced in our study, though the probable roles of confounders such as tobacco smoking and alcohol were not explored. A statistically significant relationship between the age of the patient and HIV related oral lesions was found with necrotizing gingivitis, linear gingival erythema and angular cheilitis in our study ($p<0.05$). Bendick *et al* reported a significant correlation between oral candidiasis with age and time of AIDS diagnosis in 101 Cambodians[16].

Oral hairy leukoplakia (HL) and Kaposi's sarcoma (KS) have been shown to be less common in women[3,15,17,18]. This is confirmed by the low figures in this study (3.3% and 1.5% respectively). Oral hairy leukoplakia, however has been reported to occur more frequently in heterosexual HIV-infected women than in intravenous drug users[14,19]. None of the patients we examined had any history suggestive of intravenous drug use. It has been proposed that the hairy leukoplakia gender association may be related to gender differences in the mode of expression of Epstein - Barr virus (EBV)[18].

A number of questions still remain unanswered about specific anatomical and physiological characteristics of women and girls that may play a role in transmission, acquisition or resistance to HIV infection[2]. Some authors have reported that the route of transmission does not have any effect on the oral manifestations of HIV/AIDS in sero-positive women[13,14] while a study in Mexico City demonstrated a significant association between erythematous candidiasis and blood transfusion as the route of transmission[3]. Our findings demonstrate an association between the heterosexual route and recurrent aphthous ulcers, necrotizing gingivitis and linear gingival erythema ($p < 0.028$).

In conclusion, our study has shown that oral manifestations are common features of HIV infection among Nigerian women. The preponderance of married women in our sample reflects the role of the heterosexual route as the dominant mode of transmission in the female gender. Oral candidiasis (OC) was the most notable lesion in our study with presentations commoner in patients with advanced disease. Oral candidiasis may be a useful clinical indicator of early immune dysfunction mediated by HIV.

ACKNOWLEDGEMENT

This project was sponsored by a grant from the Regional Centre for Oral Health Research and Training Initiatives (RCORTI) for Africa, Jos (in collaboration with the World Health Organization) Jos, Plateau State, an arm of the Oral Health Division of the Federal Ministry of Health, Nigeria. We are grateful to them.

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