

## Oral lesions in HIV Infected Patients in Abakaliki, Ebonyi State, Nigeria

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**Abstract:** Oral manifestations of HIV have been described as an important component of AIDS and possible indication of progression. This study investigated the common Oral lesions among HIV positive and negative patients in Abakaliki using dental instruments. A total of seventy (70) positive and seventy (70) negative HIV screened patients attending Ebonyi State University Teaching Hospital, Abakaliki, were examined using Mouth Mirror, Dental probe and College tweezers. It was shown that Oral Candidiasis (22.9%) was the most common Oral manifestation among HIV positive patients in Abakaliki. This was followed by Acute necrotizing ulcerative gingivitis-Anug (17.1%), Herpes Zoster (17.1%), Tuberculus Ulcer (12.9%), Kaposi Sarcoma (8.6%), Hairy Leukoplakia (7.1%), Necrotizing ulcerative periodontitis-Nup (7.1%) and Non Hodgkin Lymphoma (2.9%). Further investigations showed that Pseudomembraneous candidiasis; Erythematous candidiasis, Hairy leukoplekia and Non Hodgkin lymphoma were altogether completely absent from all the HIV negative patients examined. It was further shown that the pattern of oral manifestation among the HIV positive patients with respect to Sex, Age, Marital status, Occupational and Educational status were varied. However, there was evidence of reduced prevalence of oral lesions among the HIV positive patients on highly Active Anti Retroviral Therapy (HAART) compared with their counterpart not on HAART. Incorporation of oral examination into the routine medical check up of HIV/AIDS patient is hereby suggested.

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**Key Words:** Oral manifestation, lesion, HIV/AIDS, Patients, prevalence.

### 1. Introduction

The Acquired Immunodeficiency Syndrome (AIDS) was first reported in 1981 and the aetiologic agent –Human Immunodeficiency Virus (HIV) has been isolated in all continents of the world (Talaro and Talaro, 2002; Cheesbrough 2002).The impairment of the immune system occasioned by HIV is known to pave way for the proliferation of opportunistic infections which eventually culminates to AIDS (Cheesbrough, 2002; Aguirre-Urizar et al., 2004). Oral manifestation among HIV/AIDS has been reported widely (Taiwo et al., 2005; Lim et al., 2001; Schmidt-Westhauser et al., 2000; Pinheiro et al., 2004; Anteyi et al., 2003; Agbelusi and Wright, 2005; Reichart, 2003; Onunu and Obuekwe; 2002). Certain Oral lesions have been considered to be useful clinical indicators of early immunological dysfunction (Taiwo et al, 2005 Olaniyi and Sunday, 2005; Greenspan and Greenspan, 1996). In fact, oral lesions are among the first clinical features of HIV infection and could also predict the progression of HIV disease to AIDS (Greenspan and Greenspan 2002; Hodgson et al., 2006). Their presence in individuals whose serostatus is unknown strongly

suggests HIV infection (Greenspan and Greenspan, 1996).

Oral manifestation in HIV/AIDS are associated with adverse effects on quality of life such as pain, difficulty in eating, and bad breath (Agbelusi et al., 2011). Despite the relevance of the knowledge of oral manifestations, there seems to be poor awareness of the presentation and management of oral lesions among HIV/AIDS patients in specific geographical locations (Agbelusi et al., 2011). The present study investigated the common oral lesions among HIV/AIDS infected patients in Abakaliki, Ebonyi State, Nigeria.

### 2. Materials and Methods

Seventy (70) HIV positive and seventy (70) HIV negative patients visiting the Ebonyi State University Teaching Hospital (EBSUTH), Abakaliki between June and September 2006 was involved in the investigation. Simple random sampling techniques were used to select the patients. The patients HIV/AIDS status was confirmed using Enzyme-linked immunosorbent assay (ELISA) and immunoblot analysis at the Medical Laboratory Department of the

Teaching Hospital. The Oral cavities of the patients were examined using Dental probes, Spatula, Scalar and Mouth Mirror. The lesion in the oral cavity were diagnosed according to the European Community (EC) Clearing house on oral problems related to HIV infection and WHO Collaborating Centre on oral manifestation of the immunodeficiency virus. Structured questionnaire were also administered to all the patient to obtain demographic data.

### 3. Results

There was a significant difference ( $P>0.05$ ) between occurrence of Oral manifestation in HIV/AIDS positive and negative patients. Consequently, Oral lesions were associated with HIV/AIDS positive patients than their negative counterparts. Erythematous Candidiasis, Pseudomembranous Candidiasis, Hairy leukoplakia and Non-Hodgkins lymphoma were altogether absent among all the HIV negative patients examined. Oral Candidiasis was the most occurring Oral manifestation among the

HIV positive patients, with Erythematous Candidiasis accounting for (8.6%) and Pseudomembranous Candidiasis 5.7%). Non-Hodgkins lymphoma (2.9%) was the least prevalent among the HIV positive patients (Table 1 and 2).

There were no marked difference between the occurrence of oral manifestation among the HIV positive males and females examined. However, there were evidence of occurrence of oral manifestation more among the Single HIV positive patients than their Married and Divorced counterparts. Higher occurrences of oral manifestation were also observed among the HIV positive patients who were business inclined and within the age range of 31-60years. The least prevalence was noted among the HIV positive patients with MSc and PhD as their highest educational qualification (Table 1 and 2).

The overall occurrence of oral manifestation was observed to have reduced among the HIV positive patients on Highly Active Anti Retroviral. Therapy (HAART) (Table 3).

TABLE 1: PREVALENCE OF ORAL CANDIDIASIS, ACUTE NECROTIZING ULCERATIVE GINGIVITIS (ANUG) AND NECROTIZING ULCERATIVE PERIDONITIS (NUP) AMONG HIV POSITIVE AND NEGATIVE PATIENTS

CATEGORY		ERYTHEMATOUS CANDIDIASIS		PSEUDOMEMBRANEOUS CANDIDIASIS		ANGULAR CHELTIS		ANUG		NUP	
		+VE	-VE	+VE	-VE	+VE	-VE	+VE	-VE	+VE	-VE
SEX	M	4(5.7%)	0	2(2.9%)	0	4(5.7%)	1(1.4%)	5(7.1%)	2(2.9%)	3(4.3%)	1(1.4%)
	F	2(2.9%)	0	2(2.9%)	0	2(2.9%)	2(2.9%)	7(10%)	5(7.1%)	2(2.9%)	2(2.9%)
	TOTAL	6(8.6%)	0	4(5.7%)	0	6(8.6%)	3(4.3%)	12(17.1%)	7(10%)	5(7.1%)	3(4.3%)
AGE	0-30	0	0	0	0	1(1.4%)	0	1(1.4%)	2(2.9%)	0	1(1.4%)
	31-60	4(5.7%)	0	2(2.9%)	0	2(2.9%)	1(1.4%)	6(8.6%)	5(7.1%)	3(4.3%)	2(2.9%)
	61>	2(2.9%)	0	2(2.9%)	0	3(4.3%)	2(2.9%)	5(7.1%)	0	2(2.9%)	0
MARITAL STATUS	Single	1(1.4%)	0	2(2.9%)	0	0	2(2.9%)	2(2.9%)	2(2.9%)	4(5.7%)	1(1.4%)
	Married	2(2.9%)	0	1(1.4%)	0	2(2.9%)	1(1.4%)	4(5.7%)	3(4.3%)	0	0
	Divorced	3(4.3%)	0	1(1.4%)	0	4(5.7%)	0	6(8.6%)	2(2.9%)	1(1.4%)	2(2.9%)
OCCUPATIONAL STATUS	Studying	0	0	1(1.4%)	0	1(1.4%)	0	1(1.4%)	1(1.4%)	2(2.9%)	0
	Civil-service	2(2.9%)	0	1(1.4%)	0	1(1.4%)	1(1.4%)	3(4.3%)	2(2.9%)	0	1(1.4%)
	Buss/Others	4(5.7%)	0	2(2.9%)	0	4(5.7%)	2(2.9%)	8(11.4%)	4(5.7%)	3(4.3%)	2(2.9%)
EDUCATIONAL STATUS	Illiterate	3(4.3%)	0	2(2.9%)	0	2(2.9%)	1(1.4%)	5(7.1%)	3(4.3%)	1(1.4%)	1(1.4%)
	Sch. Cert. OND/HND/BSc	3 (4.3%)	0	2(2.9%)	0	3(4.3%)	1(1.4%)	6(8.6%)	3 (4.3%)	3(4.3%)	1(1.4%)
	MSc/PhD	0	0	0	0	1(1.4%)	1(1.4%)	1(1.4%)	1(1.4%)	1(1.4%)	1(1.4%)

TABLE 2: PREVALENCE OF HERPES ZOSTER, HAIRY LEUKOPLAKIA, KAPOKIS SARCOMA, TUBERCULUS ULCER AND NON-HODGKINS LYMPHOMA AMONG HIV POSITIVE AND NEGATIVE PATIENTS

CATEGORY		HERPES ZOSTER		HAIRY LEUKOPLAKIA		KAPOKIS SARCOMA		TUBERCULUS ULCER		NON HODGKINS LYMPHOMA	
		+ VE	-VE	+ VE	-VE	+ VE	-VE	+ VE	-VE	+ VE	-VE
SEX	M	8(11.4%)	3(4.3%)	4(4.7%)	0	2(2.9%)	1(1.4%)	2(2.9%)	3(4.3%)	0	0
	F	4(5.7%)	1(1.4%)	1(1.4%)	0	4(5.7%)	0	7(10%)	5(7.1%)	2(2.9%)	0
	TOTAL	12(7.1%)	4(5.7%)	5(7.1%)	0	6(8.6%)	1(1.4%)	9(12.9%)	8(11.4%)	2(2.9%)	0
AGE	0-30	5(7.1%)	1(1.4%)	0	0	3(4.3%)	0	5(7.1%)	3(4.3%)	0	0
	31-60	6(8.6%)	3(4.3%)	3(4.3%)	0	3(4.3%)	1(1.4%)	3(4.3%)	2(2.9%)	2(2.9%)	0
	61>	1(1.4%)	0	2(2.9%)	0	0	0	1(1.4%)	3(4.3%)	0	0
MARITAL STATUS	Single	6(8.6%)	2(2.9%)	3(4.3%)	0	1(1.4%)	0	4(5.7%)	5(7.1%)	2(2.9%)	0
	Married	3(4.3%)	1(1.4%)	1(1.4%)	0	3(4.3%)	1(1.4%)	3(4.3%)	2(2.9%)	0	0
	Divorced	3(4.3%)	1(1.4%)	1(1.4%)	0	2(2.9%)	0	2(2.9%)	1(1.4%)	0	0
OCCUPATIONAL STATUS	Studying	2(2.9%)	1(1.4%)	0	0	0	0	4(5.7%)	2(2.9%)	0	0
	Civil-service	2(2.9%)	1(1.4%)	0	0	1(1.4%)	0	1(1.4%)	1(1.4%)	0	0
	Buss/Others	8(11.4%)	2(2.9%)	5(7.1%)	0	5(7.1%)	1(1.4%)	4(5.7%)	5(7.1%)	2(2.9%)	0
EDUCATIONAL STATUS	Illiterate	4(5.7%)	1(1.4%)	2(2.9%)	0	2(2.9%)	0	2(2.9%)	2(2.9%)	1(1.4%)	0
	Sch. Cert. OND/HND/BSc.	7(10%)	2(2.9%)	3(4.3%)	0	4(5.7%)	1(1.4%)	7(10%)	6(8.6%)	0	0
	MSc/PhD	1(1.4%)	1(1.4%)	0	0	0	0	0	0	1(1.4%)	0

TABLE 3: THE EFFECT OF ANTIRETROVIRAL THERAPY (HAART) ON THE ORAL MANIFESTATION OF HIV/AIDS

	Erythematous Candidiasis	Pseudomembraneus Candidiasis	Angular-Chelitis	Anug	NUP	Herpes Zoster	Hairy Leukoplakia	Kaposi Sarcoma	Tuberculus Ulcer	Non Hodgkins Lymphoma
PATIENTS ON HAART	2	1	2	4	2	4	2	2	4	0

PATIENTS NOT ON HAART	4	3	4	8	3	8	3	4	5	2
TOTAL	6	4	6	12	5	12	5	6	9	2

#### 4. Discussion

It has been previously stated that Oral manifestation of HIV/AIDS are early and common clinical indicators of HIV infection and early immune dysfunction (Olaniyi and Sunday, 2005; Taiwo et al., 2005). The result of the study which revealed that there is a significant difference ( $P>0.05$ ) between the oral manifestation in HIV positive and negative patients in Abakaliki, appeared to corroborate the above assertion. This was further buttressed by the complete absence of Erythematous Candidiasis, Pseudomembraneous Candidiasis, Hairy leukoplakia and Non-Hodgkins lymphoma, commonly associated with HIV/AIDS (Vander Waal et al., 1991; Rudolf et al., 1991; Khongkuntian et al., 2001; Reichart et al., 2003; Pinheiro et al., 2004; Taiwo et al., 2006) among all the HIV negative patients examined. Several studies has provided impetus to support this type of relationship between oral manifestation and HIV/AIDS (Vander Waal et al., 1991; Jonsson et al., 1998; Khongkuntian et al., 2001; Reichart et al., 2003; Pinheiro et al., 2004; Agbelusi and Wright, 2005).

The discovery in this study that oral candidiasis was the most commonly occurring oral manifestation among the HIV positive patients examined is in conformity with previous reports (Pinheiro et al., 2004; Vander Waal et al., 1991; Agbelusi and Wright, 2005; Taiwo et al., 2005; Taiwo et al., 2006; Adedigba et al., 2008; Sales-Peres et al., 2012). The finding of this study along with those of other workers appeared to suggest that oral candidiasis is probably a universal marker of HIV/AIDS in both the developing and developed nations.

Although previous work had reported higher level of occurrence of oral lesions among female HIV

positive patients in Jos, Nigeria (Taiwo et al., 2006). There was no marked difference between the prevalence of oral manifestation among HIV positive male and female patients investigated in this study. Also contrary to the report of Taiwo et al., (2005) that oral manifestation was more among HIV positive patients within the age range 21-30, the result of the present study indicated the most prevalent group to be 31-60 years age bracket. The reason for these discrepancies is not presently obvious.

The resultant decrease in the prevalence of Oral lesions among HIV positive patients on Highly Active Antiretroviral Therapy (HAART) tends to highlight the immunological benefits of the therapy. A number of previous works had reported similar decrease in Oral manifestations among HIV positive patients on HAART (Schmidt-Westhauser et al., 2000; Reichart, 2003; Sales-Peres et al., 2012). The early and consistent use of HAART by HIV positive patients is thus suggested to reduce the rate of development of oral lesions which could invariably delay the evolution of full blown AIDS. Finally, a case is hereby made for the inclusion of oral examination in the routine medical check of HIV positive patients in Abakaliki, Ebonyi State, Nigeria. This would inevitably encourage HIV infected patients to go for dental management in good time.

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