KNOWLEDGE, PRACTICE AND ATTITUDE OF MEDICAL STUDENTS ON HIV/AIDS ORAL MANIFESTATIONS

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Abstract

Objective: To determine the knowledge, practice and attitude of Medical students on HIV/AIDS oral manifestations.
Materials and Methods: Closed ended self-administered questionnaires were distributed in July 2006 to Fourth (n=150) and fifth (n=114)) year students doing clinical rotations at the Muhimbili National Hospital, Dar es Salaam, Tanzania. Variables included year of study, dichotomous response on knowledge (8 questions) and practices (6 questions); and attitude was evaluated using 5 questions on a 5 point scale. After coding, frequencies for variables were determined using Epi-info software (2000).
Results: Students had knowledge that oral lesions were the earliest HIV manifestation commonly observed (65.2%) and were able to identify at least three of the HIV oral manifestations; Candidiasis (93.9%), Hairy Leukoplakia (80.3%) and Kaposi's sarcoma (69.7%). The practice of routine oral examination of every patient was performed by less than half the students (45.5%) and they hardly referred those seen with oral lesions to a dental clinic (18.2%). The attitude of most students was that added precautions should be taken once a patient is known to have HIV/AIDS (95.8%). Knowing the patients HIV/AIDS status prior to being attended was regarded as important (53%) and a few students were of the attitude of not attending a known HIV/AIDS patient.
Conclusion: Medical students have adequate knowledge on oral manifestation of HIV/AIDS but could not describe adequately their clinical presentation. Routine practice of oral examination may enhance dental referral. The positive attitude of students observed towards HIV/AIDS patients is encouraging.

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Key Words: Knowledge, Practice, Attitude, Medical students, HIV/AIDS, Oral Manifestations.

Introduction

HIV is one of the systemic infections which commonly manifests through the oral cavity and no other condition is associated with oral disease in a wide and significant spectrum as it is with HIV infection.[1] It is estimated that more than 90% of HIV infected individuals will have at least one oral manifestation of AIDS some-time during the course of their disease.[1,2]

Many of the HIV associated oral manifestations appear early following infection and their detection assists the clinician in the diagnosis.[1,3] Early detection assists prevention of more serious complications by initiating early management.[3] A comprehensive oral examination therefore may not only reveal presence of HIV but also assist in the recognition of an unaware HIV patient.[4] Furthermore, the clinician can monitor the disease progression by specifying the staging and classification of the oral lesion.[5]

The World Health Organization uses oral lesions as important criteria for diagnosing AIDS in places where laboratory tests such as HIV serology or CD4 counts may not be available.[6] It is a cost effective examination which may be useful in screening large populations in developing countries and in cases where HIV testing is difficult.[1, 7] To assist clinicians in the diagnosis of oral manifestations, the

World Health Organization (WHO) classified oral lesions into three groups: Lesions strongly associated with HIV, lesions less commonly associated with HIV and lesions seen in HIV infection.[8] Lesions strongly associated with HIV infection include: Candidiasis (Erythematous and Pseudomembranes type), Hairy leukoplakia, Kaposi's sarcoma, Non–Hodgkin's lymphoma and periodontal disease such as linear gingival erythema, Necrotizing (ulcerative) gingivitis and Necrotizing (Ulcerative) periodontitis.

Improving quality of life and prevention of serious complications of HIV infection requires the attending clinician to have adequate knowledge on HIV/AIDS oral manifestations.[8] The aim of this study was to determine the knowledge, practice and attitude on HIV/AIDS oral manifestations of students in their fourth and fifth year Doctor of Medicine (MD) degree course.

Methodology

This cross sectional study was done in July 2006 and included 264 fourth and fifth year Doctor of Medicine (MD) degree students doing clinical rotations at the Muhimbili National Hospital, Dar es salaam, Tanzania. Permission to conduct this study was obtained from the Directorate of Research and Publications, Muhimbili University College of Health Science.

Informed consent was obtained from every respondent before administering the closed ended self-administered questionnaire. For confidentiality purposes, serial numbers instead of names were used on the questionnaires.

Variables included year of study, dichotomous response on knowledge (8 questions) and practices (6 questions). Attitude was evaluated using 5 questions on a 5 point scale.

Responses were coded and frequencies of variables were determined using Epi Info software (2000). The variables analysed were year of study (MD IV or MD V) and responses to the questions on knowledge (adequate/inadequate); attitude (positive/negative) and practices (good/poor) on HIV/AIDS oral manifestations.

Results

Of the 264 (fourth year=150, fifth year=114) students who participated in the study approximately two thirds (65.2%) had knowledge that oral lesions were the earliest HIV manifestation commonly observed (Table 1). Knowledge of HIV oral manifestations were as follows: Candidiasis (93.9%), Hairy Leukoplakia (80.3%), Kaposi's sarcoma (69.7%), Necrotizing Ulcerative Periodontitis (58.3%), Linear Gingival Erythema (45.5%) and Non Hodgkin's Lymphoma (33.7%). More than half (57.6%) of the students were knowledgeable that oral manifestations of HIV occurs in almost every HIV infected person and that it could be used as a monitor of disease prognosis (64.8%).

Table 1. Percent frequency of knowledge of medical students on HIV/AIDS Oral Manifestations.

Item in questionnaires	Frequency (%)		
	Md4	Md5	Total
1.1 Most common HIV manifestations			
Genital lesion	30 (20.0%)	30 (26.3%)	60 (22.7%)
Oral lesion	99 (66.0%)	73 (64.0%)	172 (65.2%)
Skin lesions	65 (43.3%)	70 (61.4%)	135 (51.1%)
1.2 HIV oral manifestations			
Oral Candidiasis	134 (89.3%)	114 (100.0%)	248 (93.9%)
Hairy Leukoplakia	122 (81.3%)	90 (78.9%)	212 (80.3%)
Kaposi's Sarcoma	88 (58.7%)	96 (84.2%)	184 (69.7%)
Necrotizing Ulcerative Periodontitis	73 (48.7%)	81 (71.1%)	154 (58.3%)
Linear Gingival Erythema	65 (43.3%)	55 (48.2%)	120 (45.5%)
Non Hodgkin's Lymphoma	42 (28.0%)	47 (41.2%)	89 (33.7%)
1.3 Oral manifestation of HIV occurs in almost every HIV infected person			
Yes	80 (53.3%)	72 (63.2%)	152 (57.6%)
No	70 (46.7%)	42 (36.8%)	112 (42.4%)
1.4 HIV/AIDS oral lesions can be used as a monitor of disease prognosis			
Yes	86 (57.3%)	85 (74.6%)	171 (64.8%)
No	64 (42.7%)	29 (25.4%)	93 (35.2%)
1.5 Clinical presentation of Oral Candidiasis			
White patches in the oral mucosa	148 (98.7%)	114 (100.0%)	262 (99.2%)
Lesion can be easily wiped off	70 (46.7%)	51 (44.7%)	121 (45.8%)
Burning sensation	34 (22.7%)	51 (44.7%)	85 (32.2%)
Pain	62 (41.3%)	62 (54.4%)	124 (47.0%)
1.6 Clinical presentation of Hairy Leukoplakia			
White vertically corrugated patches	99 (66.0%)	91 (79.8%)	190 (72.0%)
Lesion can not be wiped off	65 (43.3%)	68 (59.6%)	133 (50.4%)
Occur dorsum of the tongue	70 (46.7%)	57 (50.0%)	127 (48.1%)
1.7 Clinical presentation of Kaposi's Sarcoma			
Seen when immunesupresion is severe	107 (71.3%)	84 (73.7%)	191 (72.3%)
Present as a reddish or whitish lesion	102 (68.0%)	94 (82.5%)	196 (74.2%)
Does not blanch with pressure	40 (26.7%)	69 (60.5%)	109 (41.3%)
Enlarges rapidly	32 (21.3%)	35 (30.7%)	67 (25.4%)
1.8 Clinical presentation of Necrotizing Ulcerative Periodontitis			
Tongue ulceration	55 (6.7%)	52 (45.6%)	107 (40.5%)
Rapid gum tissue loss	82 (54.7%)	79 (69.3%)	161 (61.0%)
Rapid deterioration of tooth attachment	59 (39.3%)	75 (65.8%)	134 (50.8%)

Knowledge on the clinical presentation of oral lesions varied. Most students knew Oral Candidiasis (99.2%) by its appearance as white patches in the oral mucosa and Hairy Leukoplakia (72.0%) by its white vertically corrugated patches. Kaposi's sarcoma was known to present as a reddish or whitish lesion (74.2%) while 61.0% of the students were of the knowledge that Necrotizing Ulcerative Periodontitis presents with rapid gum tissue loss.

In regard to practices (Table 2), less than half of the students (45.5%) performed oral examinations on most patients examined and over three quarters (78.8%) reported to have seen HIV/AIDS associated oral manifestations. When an HIV associated oral lesion was seen, students mainly requested for confirmatory investigations (76.5%), some provided symptomatic treatment (59.5%) and few (18.2%) referred patients to a dental clinic. Approximately two-thirds of the students reported to perform oral examinations using a mouth mirror (65.5%) while more than a half said they used a wooden spatula (52.3%). The light source used for examination was mainly a torch (78.4%) but natural light (56.1%) and electrical lighting was also used (25.8%).

Table 2: Percent frequency of Practices of medical students on HIV/AIDS Oral Manifestations

Item in questionnaires	Frequency (%)		
	Md4	Md5	Total
2.1 Performance of oral examination			
Every patient examined	61 (40.7%)	35 (30.7%)	96 (36.4%)
Most of the patients I examine	52 (34.7%)	68(59.6%)	120 (45.5%)
Few patients I examine	8 (5.3%)	4 (3.5%)	12 (4.5%)
Patients who have a complaint only	13 (8.7%)	3 (2.6%)	16 (6.1%)
No patients	23 (15.3%)	18 (15.8%)	41 (15.5%)
2.2 Have seen HIV/AIDS associated oral lesions			
Yes	110 (73.3%)	98 (86.0%)	208 (78.8%)
No	40 (26.7%)	16 (14.0%)	56 (21.2%)
2.3 Actions taken toward patient with HIV oral manifestations			
Request for confirmatory investigations	111 (74.0%)	91 (79.8%)	202 (76.5%)
Give ARV	14 (9.3%)	10 (8.8%)	24 (9.1%)
Provide symptomatic treatment	84 (56.0%)	73 (64.0%)	157 (59.5%)
Refer to a dental clinic	26 (17.3%)	22 (19.3%)	48 (18.2%)
Do nothing	11 (7.3%)	8 (7.0%)	19 (7.2%)
2.4 Instruments used in performing oral examination			
Mouth mirror	83 (55.3%)	90 (78.9%)	173 (65.5%)
Wooden bar	61 (40.7%)	77 (67.5%)	138 (52.3%)
2.5 Light source normally used when examining the oral cavity			
Natural light	75 (50.0%)	73 (64.0%)	148 (56.1%)
Electric lighting	25 (16.7%)	43 (37.7%)	68 (25.8%)
Torch	112 (74.7%)	95 (83.3%)	207 (78.4%)

Eighty nine percent of the students were of the attitude that it is necessary to perform an oral examination to every patient but only 48.9% were of a negative attitude that HIV/AIDS can be diagnosed by such an examination (Table 3). However, 95% were of the attitude that a regular dental check up to HIV patients is important. Majority (95.8%) were of the attitude that added precautions should be taken when attending to a known HIV/AIDS patient and 88.7% of students were of the attitude that one is at risk of being infected when attending to such patients. Most (87.5%) of the students were of the attitude that they would not avoid attending to a known HIV/AIDS patient, however over half of them (53%) would like to know the patients' HIV status prior to attending them.

Table 3: Percent frequency of Attitudes of medical students on HIV/AIDS Oral Manifestations

Item in Questionnaires	Frequency (%)		
	Md4	Md5	Total
3.1 Necessary to perform oral examination to every patient			
Agree	132 (88%)	103 (90.4%)	235 (89%)
Neutral	14 (9.3%)	4 (3.5%)	18 (6.8%)
Disagree	4 (2.7%)	7 (6.1%)	11 (4.2%)
3.2 HIV/AIDS can be diagnosed by oral examination			
Agree	59 (39.3%)	46 (40.4%)	105 (39.8%)
Neutral	23 (15.3)	7 (6.1)	30 (11.4%)
Disagree	68 (64%)	61 (53.5%)	129(48.9%)
3.3 Regular dental check up to HIV patients			
Important	141 (94%)	110 (96.5%)	151 (95%)
Neutral	9 (6.0%)	3 (2.6%)	12 (4.5%)
Not important	0 (0.0%)	1 (0.9%)	1 (0.4)
3.4 Added precautions should be taken when attending a known HIV/AIDS			
Agree	140 (93%)	113 (99.1%)	253 (95.8%)
Neutral	6 (4.0%)	0 (0.0%)	6 (2.3%)
Disagree	4 (2.7%)	1 (0.9%)	5 (1.9%)
3.5 One is at risk of infection by attending HIV/AIDS patient			
Agree	131 (87.4%)	103 (90.3%)	234 (88.7%)
Neutral	2 (1.3%)	5 (4.4%)	7 (2.7%)
Disagree	17 (11.4%)	6 (5.3%)	23 (8.7%)
3.6 I always avoid attending to a known HIV/AIDS patient			
Agree	12 (8%)	9 (7.9%)	21 (8%)
Neutral	4 (2.7%)	8 (7.0%)	12 (4.5%)
Disagree	134 (89.3%)	97(85.1%)	231 (87.7%)
3.7 I would like to know patients HIV/AIDS status prior to attending			
Agree	68 (45.3%)	72 (62.2%)	140 (53%)
Neutral	23 (15.3%)	4 (3.5%)	27 (10.2%)
Disagree	59 (39.3%)	38 (33.4%)	97 (36.7%)

Discussion

This study was conducted using medical students in their final years before qualifying in order to obtain their knowledge, attitude and practices regarding patients with HIV/AIDS oral manifestations.

As it has been reported that 70-90% of HIV patients will have at least one oral manifestation at some point during the course of the disease[1,2], adequate knowledge, positive attitude and good practices on care of HIV/AIDS patients are essential requisites for a qualifying medical doctor. Furthermore, medical doctors rather than dentists tend to see such patients probably due to inadequate visits to dentists by majority of Tanzanians.

This study revealed that students were knowledgeable of lesions strongly associated with HIV infection and were able to describe the clinical presentation unlike the low sensitivity in precise description of the HIV associated oral lesions observed among medical clinicians in another study.[9]

The practice of occasionally or never at all examining the oral cavity of patients by students was also noted in a study conducted in Nigeria.[9] Furthermore, Ogunbodede and Rudolph[10], found that there was poor practice in the management of patients diagnosed with HIV/AIDS oral manifestations as was also seen in this study. Very few students referred patients diagnosed with HIV/AIDS oral lesions to a dentist and this is probably because the guidelines used in the management of these patients are not clear or just not practiced. Late referral to dentists may compromise the quality of care to the HIV patients with oral manifestations and worsen the prognosis of the disease as was also documented by Davidson and Gillies.[11]

A positive attitude was observed among students in attending to a known HIV/AIDS patient, however, as the serology status was not known in most patients, students preferred that this information should be available prior to attending them. Students were also aware of the importance of taking added precautions when attending to a known HIV patient and this positive attitude will assist in minimizing transmission of not only HIV but many other infectious diseases.

Early presentation of oral lesions in HIV/AIDS patient can be useful in the clinical diagnosis of the disease and prompt management thereby improving quality of life and can be used as an alternative to costly screening laboratory tests.

Conclusion

Very few students have the practice of examining the oral cavity of their patients although they were aware of its importance. Regardless of year of study many of the medical students doing their clinical rotation had adequate knowledge in regard to HIV/AIDS oral manifestations but few referred patients for appropriate management. It was encouraging to observe that students had a positive attitude towards patients with HIV/AIDS.

Recommendation

So as to be able to use oral lesions as surrogate markers in HIV infection it is important that health care workers should receive education and training on the relevance of oral health needs and emphasis should be placed on the integration of oral health care with the general care of the patient. These workshops should be conducted for all health care workers. The importance of early referral of patients with oral lesions to dentists is emphasized.

References

1. Weinert M, Grimes RM, Lynch DP. Oral Manifestations of HIV infection. Annals of Internal Medicine. 1996;125:485-496
2. Sedano HO: Frequent oral diseases in HIV positive and AIDS patients. Los Angeles. University of California Los Angeles School of Dentistry. Available at www.dent.ucla.edu/pic/members/oralaids/index.html. Accessed Feb. 2, 2006.
3. Rangnathan K, Reddy BV, Kumarasamy N, Solomon S, Viswanathan R, Johnson NW. Oral lesions and conditions associated with human immunodeficiency virus infection in 300 South Indian patients. Oral Dis. 2000;6:152-7.
4. Chapple IL, Hamburger J. The significance of oral health in HIV disease. Sex Transm Inf. 2000;76:236-243
5. Sciubba JJ. Recognizing the oral manifestations of AIDS. Oncology (Williston Park). 1992;6:64-70.
6. Greenspan JS, Greenspan D, Agabian N, *et al.* The mouth as a window on HIV infection. Science to Community. 2002;Clinical #4:1-4
7. Greenspan D and Greenspan J. Oral Lesions of HIV/AIDS in Industrialized Countries. 5th World Workshop on Oral Health and Disease in AIDS. http://www.hivdent.org/oralm/5thWorldWorkshopOnOralHealthAndDiseaseInAIDS/5WWOHDA-OLHAIC.htm
8. Coogan MM, Greenspan J, Challacombe SJ. Oral lesions infection with human immunodeficiency virus. Bull World Health Organ. 2005;83:700-6
9. Sofola OO, Uti OG, Emeka O. Access to oral health care for HIV patients in Nigeria: Role of attending physicians. African Journal of Oral Health.2004;1:37-41
10. Ogunbodede EO, Rudolph MJ. Oral Manifestations of HIV and Dentists in South Africa. The 4th International Workshop on Oral Manifestations of HIV Infection Abstracts. 2000
11. Davidson G, Gillies P. Safe working practices and HIV infection: knowledge, attitudes, perception of risk, policy in hospital. Qual Health Care. 1993;2:21-6