



DISTRIBUTION OF ORAL MANIFESTATIONS IN HIV PATIENTS UNDERGOING HAART REGIMEN

Oral Medicine

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ABSTRACT

Background: Oral health forms an important aspect of overall general health. HIV infection causes progressive deficiency in immune system leading to many opportunistic infections and wide range of oral manifestations. Oral manifestations have found a place in many classifications and staging related to HIV infection. Many earlier studies on oral manifestation of HIV are based on western population only. Aim: This study highlights the distribution of oral manifestation among HIV patients under HAART regimen.

Materials & Methods: Among the randomly selected patients have been undertaken in the government Rajaji Government Hospital, Madurai.

Results: Overall, mucosal hyper pigmentation was the commonest oral lesion seen followed by oral candidiasis, recurrent ulcers, periodontitis and parotid gland enlargement.

Conclusion: The HAART regimen significantly reduces the prevalence of oral manifestations of HIV infection and our data suggests and emphasizes HIV Oral Lesion's (HIV-OL's) as clinical markers of disease progression and reflects the viral load failure.

KEYWORDS

highly active anti-retroviral therapy, human immunodeficiency virus, acquired immune-deficiency syndrome, oral manifestations.

INTRODUCTION

At the beginning of the HIV pandemic it was reported that 41% of patients with the acquired immunodeficiency syndrome (AIDS) had head and neck manifestations. However, as awareness of these lesions has increased, it is now known that nearly 100% of patients with AIDS have head and neck manifestations. The presence of oral lesions is an indicator of progression to AIDS. They are strongly associated with immune suppression, as measured by CD4 cell counts.¹ Oral lesions serve as potential markers of HIV viraemia and the consequent destruction of the immune system with progressive HIV disease. The most widely available marker of immune system destruction in the HIV-infected subject is a reduction in the number of circulating CD4 cells. It provides a measure of the degree of damage to a patient's immune system and indicates the potential of the body to respond effectively to pathogens. Clinical symptoms appear as the virus destroys blood cells important for maintaining immunity. The most serious consequence of HIV infection is declining in the number and function of the helper-inducer (T4, CD4+) subset of lymphocytes. Progressive destruction of the immune function allows for the development of opportunistic infections and neoplasm's; and leads finally to the full-blown AIDS.

Hence, the CD⁺ cell count is one of the most important investigations in the clinical evaluation of the HIV-infected patient as it helps to evaluate the stage of the disease, initiation of anti-retroviral therapy and prophylaxis for opportunistic infections.³ CD⁺ cell counts are also of prognostic significance and are used as markers for assessing progression from HIV infection to AIDS. Oral lesions cannot only indicate infection with HIV but are also among the early clinical features of infection and can predict progression of the HIV disease to AIDS⁵. They can, therefore, be used as entry or exit points in therapy and vaccine-trials and can be determinants of opportunistic infection and anti-HIV therapy in addition to being used in staging and classification. Only few studies have been done correlating oral manifestations with CD⁺ counts in those who are HIV infected; and therefore, little is known about their relationship with HIV-associated oral lesions.

AIMS AND OBJECTIVES

- To find out the commonest oral manifestations in patients with HAART.
- Correlating oral manifestations with clinical classification for HIV.
- To explore if there is any association of oral manifestations with

CD4 counts in patients with HAART.

- To determine the therapeutic effects of HAART on oral lesions in HIV-seropositive patients.

MATERIALS AND METHODS:

Ethical committee clearance was obtained, and this cross-sectional study was conducted on 50, randomly chosen patients who were diagnosed as HIV positive and were on HAART regimen independent of age and sex. The patients who were in the window period and not on HAART were excluded from the study. This Study was carried out in Government Rajaji Hospital, Madurai, and Tamilnadu, including males, females and transgender after obtaining informed consent from patients. The Case history was recorded. The extra-oral, peri-oral and intra-oral soft tissues examination was done in patients receiving HAART regimen.

Sampling Criteria:

Inclusion Criteria:

- Patients who are HIV positive and receiving HAART (6 months to 2 year) with variable CD⁺ counts.
- Males, Females and Transgender above 20 years.

Exclusion Criteria:

- Patients who are not receiving HAART.

Oral lesions were diagnosed clinically according to the criteria established by the European Economic Community Clearinghouse on oral problems related to HIV infection.⁴ Oral examinations were performed by a Dental surgeon trained in the identification of HIV related oral lesions. Where multiple lesions were seen (in the same patient) at the time of clinical evaluation each lesion was considered independently for the analysis.⁵ The examined patients were documented by clinical photographs while they come to procure their monthly HAART medications and the same procedure was repeated for all. No antifungal therapy was administered post diagnosis of oral lesions. For each patient, the following information, clinical stage of infection' types of HAART prescribed and the HIV related oral lesion(s) noticed. Also documented were the CD4 cells (count/ml).

RESULTS:

Overall, mucosal hyper pigmentation was the commonest oral lesion seen followed by oral candidiasis, recurrent ulcers, periodontitis and parotid gland enlargement. Patients with Oral lesions had CD4+ cell count 200-400 cells/mm³. Few patients had CD4+ cell counts < 200 cells/mm³. All patients presenting with oral lesions showed the WHO clinical stage of II.

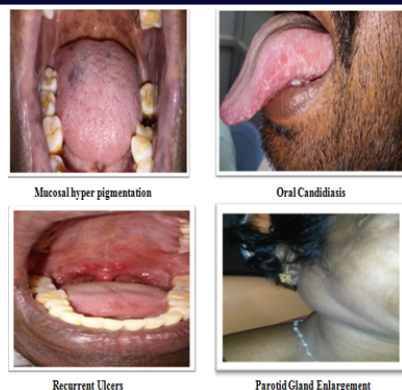


Figure 1: Common oral manifestations among the patients taking HAART regimen.

DISCUSSION

A total of 50 patients under HAART regimen were included in this study. Mucosal pigmentation (12%) was the commonest, followed by candidiasis (8%), oral ulcerations (8%) and parotid enlargement (0.5%). Literature says adults on HAART have lower risk of oral lesions, hence it has been postulated that due to access to oral health care, demographic and social factors, mode of HIV transmission, disease stage and immune reconstitution some authors believe that oral lesions are clinical markers of HAART failure.⁶ HAART usually results in improved CD⁴ counts and decreased viral load, a subset of patients experience a paradoxical condition termed immune reconstitution inflammatory syndrome (IRIS). Most cases of IRIS manifest themselves within first few of HAART, and those at highest risk are patients with low baseline CD4 counts and an underlying opportunistic infection when HAART is initiated.⁷

In our present study, 12% of population presented with mucosal hyper pigmentation was on ZLN combination. Mucosal hyper pigmentation in patients on HAART has been linked with increased melanin production in the epithelium.⁸ In our study there is an increase in number of hyper pigmentations noted in patients under HAART regimen and this result is in concurrent with the studies made by Umadevi et al.⁹

8% of the study population presented with Oral candidiasis. This is significantly less in HIV patients in pre HAART. Aspartyl proteinases (SAPs) which are an important virulence factor of *Candida*, apart from the improvement in the immunological response of the host from HAART.

2% of population presented with sialadenitis. HAART may act as an effect modifier and those patients who are in the initial stages of HAART are at the greatest risk of developing HIV Salivary Gland Disease.

1% of population presented with periodontitis which reveals decreased incidence of periodontal diseases in patients under HAART. The increase in CD⁴ counts in patients under HAART reduce the colonization of such microbes. In our study 8% of population presented with recurrent ulcers. As a result of decrease in CD4 counts there is decreased activity of regulatory T cells resulting in ulcer.

Table: 1 Percentage Distribution Of Oral Manifestations In Adult Patients:

Manifestations	Number	Percentage
Recurrent Oral Ulcers	4	8%
Mucosal hyper pigmentation	6	12%
Oral Candidiasis	4	8%
Sialadenitis/Salivary gland enlargement	1	2%
Without any manifestations	35	70%
Total	50	100%

According to Greenspan et al (2005)¹⁰, they classified the oral manifestations of HIV into three stages; our study also shows the presence of few manifestations correlating into their features to be classified. It is summarized as follows in Table: 2

This study illustrates clearly that HIV-associated oral lesions are common in this study population as has been reported elsewhere. The

frequency of candidiasis particularly hyperplastic, erythematous and angular cheilitis was high with CD4 cell counts of less than 200 cells/mm³ and CD4/CD8 ratio of less than one. Oral candidiasis is one of the most prevalent opportunistic infection in HIV-infected individuals.¹⁰

TABLE: 2

Oral manifestations of HIV features as defined by Greenspan et al (2005),

Stage	Manifestations	Our Present study
Stage I	Oral candidiasis	Present
	Hairy Leukoplakia	Absent
	Linear gingival erythema	Present
	Necrotizing ulcerative gingivitis	Absent
	Necrotizing ulcerative periodontitis	Absent
	Non- Hodgkin lymphoma	Absent
	Kaposi sarcoma	Absent
Stage II	Atypical ulcers	Present
	Salivary gland diseases	Present
	Viral infections like CMV, HSV, HPV, HZV Linear	Absent
Stage III	Diffuse osteomyelitis	Absent
	Squamous cell carcinoma	Absent
	Other rare lesions	Absent

According to studies conducted in some developed countries, pseudomembranous candidiasis is the most common clinical presentation (55.8% to 69.7%) of all candidal infections followed by the erythematous, angular and hyperplastic types (0-1.7%).¹¹ Long-term use of HAART reduces the opportunistic infections as stated by Selvi U et al¹² is evident in our study too, which is also similar to many researchers.

In resource poor countries, screening of patients with expensive laboratory tests of lymphocyte counts and viral loads in order to commence on anti-retroviral therapy is a financial burden on the patient. So, Oral examination is easy, non-invasive, does not require costly equipment and can be used for screening.

CONCLUSIONS

Since the advent of HAART, a decline in the prevalence of oral lesions associated with HIV such as hairy Leukoplakia, Kaposi sarcoma, herpes simplex, and oral warts. There is strong evidence that HAART significantly reduces the prevalence of oral manifestations of HIV infection and a few data suggest HIV-OLs as clinical markers of disease progression and reflects the viral load failure. These lesions alongside immunologic parameters can be used as indicators of success or failure of antiretroviral therapy.

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