

Management of HIV induced oral lesions - A Review

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Abstract: To review the management of HIV induced oral lesions. Oral manifestations of HIV infection is a part of disease advancement process. However, the manifestations are enlisted in about 30 to 40 percentage of the patients. Oral manifestations are among the earliest and most important indicators of infection with HIV. Seven principal lesions, oral candidiasis, hairy Leucoplakia, Kaposi sarcoma, linear gingival erythema, necrotising ulcerative gingivitis, necrotising ulcerative periodontitis and non-Hodgkin lymphoma, which are strongly associated with HIV infection. The presence of these oral lesions is an indicator tool for HIV infection, is an indicator of the stage and classification of the HIV infection. Early recognition, diagnosis, and treatment of HIV-associated oral lesions is not the cure but however procrastinates morbidity. Hence the above discussed review promotes the significance of thorough oral examination at every level in the management of all HIV infected patients, as well as those thought to be at threat.

Keywords: HIV, oral, lesion, infection, management.

INTRODUCTION:

Oral manifestations of HIV infection is a part of disease advancement process. However, the manifestations are enlisted in about 30 to 40 percentage of the patients. (1) The presence of these oral lesions is an indicator tool for HIV infection, is an indicator of the stage and classification of the HIV infection, (2). Early recognition, diagnosis, and treatment of HIV-associated oral lesions is not the cure but however procrastinates morbidity (3). The AIDS Cost and Utilisation Study conducted a study on 1424 infected adults, wherein only 9.1% reported to treat the oral manifestations, the rest however chose to ignore the procedures (4).

ORAL LESIONS

Oral manifestations are among the earliest and most important indicators of infection with HIV. Seven principal lesions, oral candidiasis, hairy Leucoplakia, Kaposi sarcoma, linear gingival erythema, necrotising ulcerative gingivitis, necrotising ulcerative periodontitis and non-Hodgkin lymphoma, which are strongly associated with HIV infection, have been recognised and are seen in both developing countries (5). These lesions may be evident in 80% of the diagnosed population and 50 % of the infected population (6). The lesions result in decrease in numbers of CD4+ cells and an elevation in the viral population, and are signals of disease development (7). Hairy Leucoplakia and pseudomembranous candidiasis are the most common lesions seen in HIV infection (5). The above mentioned promotes the significance of thorough oral examination at every level in the management of all HIV infected patients, as well as those thought to be at threat (7).

CLASSIFICATION AND MANAGEMENT OF LESIONS

Fungal Infections:

The most prevalent Fungal infection associated with HIV is the oropharyngeal candidiasis. The predominant forms are erythematous candidiasis, pseudo membranous candidiasis and angular cheilitis.

Erythematous candidiasis

Description:

Red, flat subtle lesion, usually found on the dorsal surface of the tongue and/or the hard or soft palate. The lesions result in burning sensation and increased sensitivity of the oral cavity in the affected (4). Although erythematous candidiasis has been identified as one of the more common oral manifestation seen in association with HIV disease, this presentation is frequently under-diagnosed (8).

Treatment:

Topical antifungal therapy: Clotrimazole troches 1 Omg (dispense 70, Dissolve 1 troche in mouth 5 times a day for 2 weeks); Nystatin oral suspension 500,000u (Hold 1 teaspoonful in mouth for 5 minutes, 4 times/day for 2 weeks) (4). Topical antifungal treatment patients are relieved of the burning sensation 3–4 days after application.

Pseudomembranous candidiasis**Description:**

Pseudomembranous candidiasis (oral thrush) presents as creamy white lesions on the oral mucosa and an identifying attribute of this infection is that these can be eliminated by gentle scraping with an underlying erythematous mucosal surface residue(9). Characteristic creamy white, removable plaques on the oral mucosa are caused by overgrowth of fungal hyphae mixed with desquamated epithelium and inflammatory cells. The mucosa may appear red when the plaque is removed. This type of candidiasis may occur in mouth or pharynx(7)

Treatment:

Mild to moderate infection are treated by topical antifungal therapy. Moderate to severe presentations are treated by Fluconazole 100mg (dispense 15, 2 tabs on day 1, then 1 tab for the rest of the 2-week treatment period) (5). Systemic administration of Fluconazole, Ketoconazole, Itraconazole inhibits ergosterol biosynthesis(10).

Angular cheilitis**Description:**

Cracking or fissuring at the corner of the mouth. The clinical presentation of Angular cheilitis is erythema and/or fissuring of the corners of the mouth. Angular Cheilitis can occur with or without the presence of erythematous candidiasis or pseudomembranous candidiasis. Angular cheilitis can prolongate if untreated. Treatment involves the use of topical anti-fungal cream directly applied to the affected areas four times a day for the two-week treatment period (5).

Treatment:

Ketoconazole 2 percent cream (dispense 30gms, apply to affected area 4 times a day for 2 weeks) .Itraconazole (100-mg capsules) may be used for the treatment of oral candidiasis (200 mg daily orally for 14 days)(11, 12).

Other fungal infections include Hyperplastic Candidiasis which is unusual with white areas due to hyperkeratosis and, unlike the plaques of pseudomembranous candidiasis which can be excavated. These lesions may be misunderstood with hairy Leucoplakia. Diagnosis of hyperplastic candidiasis is made from the histologic appearance of hyperkeratosis and the characteristic hyphae. Periodic acid-Schiff (PAS) stain is often used to indicate hyphae (4). Linear Gingival Erythema (LGE), a periodontal disease, presents as a red belt along the gingival margin, which is escorted by occasional bleeding and discomfort. The anterior teeth rather than the posterior teeth is more predominantly infected. LGE can also present on attached and non-attached gingiva as petechial-like patches.

Treatment:

The primary step toward treatment includes the excavation of lesion followed by twice daily rinses with a 0.12% chlorhexidine gluconate suspension for two weeks and improved oral hygiene home care (18).

Effect on prosthesis:

The lesion is further aggravated by the usage of prosthetic appliances. The patients wearing the prosthetics are counselled to avoid wearing it overnight during sleeping. Soak the denture in a dilute solution of bleach (1 tsp for 8 oz of water) or in chlorhexidine gluconate 0.12% (8). Denture cleaning with a denture cleanser with anti-candidal properties such as 1% sodium hypochlorite preparations. Chlorhexidine (0.2%) should be used if the denture has metal components since hypochlorite will otherwise cause discolouration (13).

Viral Infections:**Oral hairy Leucoplakia:****Description:**

It is associated with Epstein- Barr virus. It is usually asymptomatic, but treatment is recommended to eliminate pathogenic microbe. OHL appears clinically as a white lesion absent of symptoms on the lateral side of the tongue, unilaterally or bilaterally, with untraceable boundaries, a flat, corrugated or hairy surface, that is not removed by excavation(14).

Treatment:

Gentian violet (15), Complete regression of OHL can be observed at a one-month follow-up, but after treating for a year the OHL lost its pathogenicity. Local application of 0.1% vitamin A twice daily was performed in twelve cases of OHL and regression of the lesions was observed after 10 days (16). The usual dose of topical therapy for OHL varied from 10 mg to 20 mg of podophyllin(17). Acyclovir is a chemotherapeutic antiviral agent against herpes simplex and Epstein – Barr virus (17).

Herpes simplex and Herpes Zoster infection:**Description:**

The hard palate and gums, followed by lips and keratinised tissue are more susceptible to it(18). Painful ulcers persist for more than a month. Diffuse mucosal ulcerations, associated with fever, malaise, and cervical lymphadenopathy occur. Ulcerations that follow the rupture of vesicles are painful and may persist for several weeks. Recurrent HSV usually appears in keratinizing oral mucosa (i.e., palate, dorsum of tongue, and gingiva) as ulcerations(19, 20).

Treatment:

Acyclovir helps terminate or reduce the life of the lesion. For herpes zoster, the standard oral dosage is 800 mg five daily for 7 to 10 days.

Human Papillomavirus:**Description:**

HPV lesions in the oral cavity may appear as solitary or multiple nodules. They appear as multiple smooth surfaced raised lesions resembling hyperplasia(3). Mainly located on the palate, buccal mucosa, and labial commissure.

Treatment:

Oral HPV lesions can be removed surgically using local anaesthetic. Carbon dioxide laser surgery can remove multiple flat warts, however it may reoccur.(3)

Cytomegalovirus:**Description:**

They appear necrotic with a white halo (21) Cytomegalovirus may give rise to large, chronic ulcers of the oral mucosa or gingiva (22).it may sometimes be confused with lymphoma.

Treatment:

It can be treated by Ganciclovir therapy(23).

Effect on prosthesis:

With the advent and popularity of osseointegrated implant replacements for missing teeth, the surfaces to which salivary proteins and bacteria bind to form biofilms is becoming even more diverse, resulting in further complications. Hence this may result in rupture of the pustules and inducing severe pain. Periodontium of the remaining teeth is compromised in the HIV infected patients and hence prosthodontic management is posed to be hard (24). It is best to avoid use of RPDs in these patients who are already prone for the periodontal diseases. Use of certain specially designed high risk design fixed partial dentures is beneficial to the HIV patient and their follow-up to strict plaque control by the doctors and patients before and after treatment is required in such patients(25)

BACTERIAL INFECTIONS:**Linear erythematous gingivitis****Description:**

It appears as marginal gingival erythema. There is mild gingival bleeding with mild pain. It is present on attached as well as non-attached gingiva as petechia like patches. In acute-onset ulcerative gingivitis, the tips of the interdental papilla and along the gingival margins experience ulcerations and often result in excruciating pain.(26)

Treatment:

Twice-daily rinses with a 0.12% chlorhexidine gluconate suspension for 2 weeks, and improved home oral hygiene.(19)

Necrotizing ulcerative periodontitis (NUP):**Description:**

It is characterised by deep osseous pain and erythema that is often associated with spontaneous bleeding and progressive loss of periodontal attachment and bone. The infection is so severe it can result in the loss of alveolar process of that area(26).

Treatment:

Treatment consists of rinsing twice daily with chlorhexidine gluconate 0.12%, metronidazole (250 mg orally four times daily for 10 days). Antibiotic therapy can be initiated.(27)

Bacillary Epithelioid Angiomatosis (BEA):

This lesion appears to be unique to HIV infection and cannot be clinically differentiated from oral Kaposi's sarcoma (KS). Both are present as an erythematous, soft mass that may result in bleeding even upon mild interactions.

Treatment:

Erythromycin is the treatment of choice.

Effect on prosthesis:

Implant therapy is also successful in these periodontally compromised individuals only if the lesion has been excavated and regular maintenance is after the procedures(28). The occurrence of xerostomia in HIV individuals is commonly reported in HIV/AIDS patients due to effect of viral and bacterial infection on salivary glands or as a side effect of antiretroviral and other medications used. Irritation and ulcerations of the HIV infected mucosa might result due to chronic denture movement, in addition to loss of retention of denture base in patients with xerostomia.(29)

Neoplasms

Description:

It is the most common intraoral malignancy associated with HIV infection. The lesion may appear as a red-purple macule, an ulcer, or as a nodule or mass. Intraoral KS occurs on the palate in 90% of reported cases in addition to occurring on the heavily keratinised mucosa .(30)

Treatment:

There is no accurate cure, however intraoral therapy could control the size and number of lesions at the earliest stage. Intralesional chemotherapy with vinblastine sulfate or sclerotherapy with 3% sodium tetradecyl sulfate is usually effective(30), if adverse, radiation therapy is advised.

Non-Hodgkin's lymphoma:

Description:

It appears as a rapidly enlarging mass, less commonly as an ulcer or plaque, and most commonly on the palate or gingiva. A histological examination is required for diagnosis and staging.(26)

Treatment:

Chemotherapy is a widely used treatment for non-Hodgkin lymphoma, however radiotherapy is used to treat the early stages. Other treatments include monoclonal antibody medication and steroid medication.

Development of HAART (Highly Active Anti-Retroviral Therapy):

Overall prevalence of the oral manifestations of HIV disease has changed since the introduction of highly active antiretroviral therapy (HAART). Reduction of oral lesions from 47.6% pre-HAART to 37.5% during the HAART era(4). This has improved the length and quality of the lives of HIV infected patients. There are five classes of drugs, which are usually used in combination, to treat HIV infection. Use of these drugs in combination can be termed anti-retroviral therapy (ART), combination anti-retroviral therapy (cART) or highly active anti-retroviral therapy (HAART). The use of multiple drugs that act on different viral targets is known as highly active antiretroviral therapy (HAART). HAART decreases the patient's total burden of HIV, maintains function of the immune system, and prevents opportunistic infections that often lead to death (31).

Virologic response: Suppressing the viral load to undetectable levels (<50 copies per ml) is the primary goal of ART. This should happen by 24 weeks after starting combination therapy (32). The prevalence of OC among patients who receive antiretroviral treatment is 50% lower compared to the prevalence before HAART era. An increase in oral warts was noticed among patients on HAART. Development of warts may be related to immune reconstitution(33)

Adverse effects of anti-retroviral therapy:

Oral hyper pigmentation can be observed if a patient is given zidovudine.(26). Erythema multiformes is a known side effect of NNRTIs. Xerostomia is also observed in patients on lamivudine, didanosine, indinavir and ritonavir. Other oral effects like paresthesias, lip edema, chelitis, and taste disturbances have been observed in patients on protease inhibitors (34).

Role of Dental Profession in the Management of HIV:

HIV related oral lesions have been prove to be first clinical sign of detection of the disease. Early diagnosis is required for optimal treatment of HIV related oral lesions such as necrotising ulcerative gingivitis and periodontitis which are potentially harmful. The dentists ply a major role in diet counselling to the individuals as they are deprived of the necessary nutrition required for survival.

Conclusion:

Hence the above discussed review promotes the significance of thorough oral examination at every level in the management of all HIV infected patients, as well as those thought to be at threat.

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