The following document contains updated information regarding current concepts of HIV disease, and information about recommendations for HIV testing. The content of this document can be used by dental and other health care providers for training.

Dental management of HIV infected patients does not differ from that of non-HIV infected patients. Most treatment can be performed by general practitioners. No special facility or equipment is required. “Standard Precautions”*(CDC,2003) have been proven to prevent the transmission of HIV and other infectious diseases in the dental office. HIV infected patients who require specialist care should be appropriately referred according to the same referral protocol as for the non-HIV infected patient.

HIV-related oral conditions include bacterial infections, fungal infections, and viral infections. Additionally, HIV infected persons often present with medical problems resulting from HIV-related immune suppression, drug therapy and co-morbid conditions and diseases.

A comprehensive medical and oral health assessment is an essential component for safe and appropriate oral health care. Early recognition and intervention for opportunistic infections (OIs) can significantly reduce morbidity and improve the quality of life for patients infected with HIV.

What is HIV?

HIV stands for human immunodeficiency virus. HIV affects specific cells of the immune system, called CD4 cells, or T cells. Over time, HIV can destroy so many of these cells that the body can’t fight off infections and disease. HIV can cause AIDS if left untreated. As a result, people with AIDS develop serious opportunistic infection(s) and cancers.

What is AIDS?

AIDS means Acquired Immunodeficiency Syndrome. Acquired means that the disease occurs due to contact with a disease-causing agent (in this case, HIV). Immunodeficiency means that the disease is characterized by a weakening of the immune system and syndrome refers to a group of sign and symptoms that characterize a disease. Today, someone diagnosed with HIV and treated with highly active antiretroviral therapy (HAART) before the disease is far advanced, can have a nearly normal life expectancy. (CDC, 2013)

The CDC Revised Recommendations for HIV Testing of Adults, Adolescents, and Pregnant Women in Healthcare Settings aim to make HIV testing a routine part of medical care in addition to expanding the gains made in diagnosing HIV infection among pregnant women. **(CDC,2006)


How do people become infected?

- HIV can be spread through any type of unprotected oral, vaginal, or anal sex if one of the partners has the virus. Having multiple sex partners or the presence of other sexually transmitted diseases (STDs) can increase the risk of infection during sex
- Sharing needles, syringes, or other equipment used to inject illicit drugs if contaminated with blood of an HIV+ person
- Infected women can pass the virus to their babies during pregnancy, birth, and breastfeeding
- Infection through blood transfusions, although testing of blood donors has minimized risk of transmission in the U.S.

HIV is not spread from contact with sweat, tears, saliva, hugs or casual kiss from an infected person. People do not become infected with HIV through casual contact with people at work, school, home, or anywhere else. People have not become infected with HIV through insect bites.

What is HIV-related Oral Health?

HIV-related oral conditions occur in many HIV patients. Bacterial infections, fungal infections, and viral infections are just some of the problems that HIV patients encounter. Unfortunately, a vast majority of dental problems in HIV patients go untreated.

Factors that Predispose to Oral Lesions

- CD4+ counts < 200cells/mm$^3$
- Viral load > 3000copies/mm$^3$
- Xerostomia
- Poor oral hygiene
- Smoking

Let’s take a look at some of the presentations HIV can cause in your patient’s mouth.

(Disclaimer: None of these oral lesions are diagnostic of HIV infection as they also appear with other systemic diseases.)

Fungal Infections

Candidiasis

Candidiasis or Yeast infections are caused by one of many types of fungus called Candida. Oral candidiasis is caused by Candida Albicans and may be the first apparent sign of HIV infection. It occurs in as many as 90% of patients infected with HIV.

HIV infection should be considered in patients with repeated oral candidiasis in the absence of other associated risk factors, such as steroid or antibiotic use. There are several clinical types of Candidiasis, each with their unique appearance and symptoms. Diagnosis is based on clinical presentation and exfoliated cytological exam.
Clinical Description of Different Types of Candida Infections

Pseudomembranous Candidiasis

The most common presentation of candidiasis in HIV infected individuals characterized by removable, white or whitish-yellow small solid rounded patches often on the mucous membranes of the cavity of the mouth, the roof of the mouth, and vestibule (the part of the oral cavity that lies between the teeth and gingivae and lips and cheeks). The condition tends to be asymptomatic. Taste alterations are common.

Erythematous Candidiasis

The condition appears as red flat lesions commonly on the dorsal surface of the tongue, mucosa and posterior hard palate. Some patients complaining of oral burning, most frequently when eating spicy or salty food, or when drinking acidic beverages.

Angular Cheilitis

This form of candidiasis is characterized by painful fissures with slight crust formation in the corner of the mouth, with or without abnormal redness of the skin.

Bacterial Infections

Gingival and Periodontal Diseases

Periodontal disease is a chronic inflammatory process involving specific bacteria and affecting the tissue and bone supporting the teeth. It is characterized by bleeding gums, bad breath, pain/discomfort, mobile teeth, and sometimes sores. Periodontal disease can occur in anyone regardless of HIV status.

Necrotizing Ulcerative Gingivitis (NUG)

Necrotizing Ulcerative Gingivitis (NUG) is characterized by the presence of ulceration, sloughing, and necrosis of one or more interdental papillae, accompanied by pain, bleeding, and fetid halitosis. NUG mainly affects the interdental papilla and marginal gingiva.
**Linear Gingival Erythema (LGE)**

Characterized by a defined linear marginal gingival erythema, limited to the soft tissue that both surround and support the teeth. LGE characteristically appears as red swollen gums with spontaneous bleeding. Occurs more frequently with front teeth, but can extend to the back teeth. This reflects inflammation as a consequence of bacterial invasion.

**Necrotizing Ulcerative Periodontitis (NUP)**

NUP is the most serious form of periodontal disease associated with HIV because involves bone loss and the loss of the mucous membrane that surrounds and attaches the teeth. NUP is characterized by severe bone pain, spontaneous gum bleeding, halitosis, ulcerated gum tissue between teeth. May involve only a few teeth but in severe cases it may affect all teeth. NUP is a marker of severe immune deterioration.

**Necrotizing Stomatitis**

Occurs when there is more extensive mucosal and bone loss beyond the gums and tissue surrounding and supporting the teeth. Stomatitis means a sore mouth.

**Viral Infections**

**Herpes Simplex Virus (HSV)**

Herpes simplex virus (HSV) types 1 and 2 cause both primary and recurrent oral and genital disease, produced by the virus herpes simplex (HSV-1) and herpes simplex 2 (HSV-2). The hallmark symptom of herpes is a group of painful vesicles also called fever blister on a fixed or keratinized tissue in the mouth, including the hard palate and gingiva, and lips. Appears also on the genital or perianal area crusting over and healing in approximately 7-14 days.
Herpes Zoster (VZV)

The initial infection with varicella zoster virus (VZV) causes the acute (short-lived) illness chickenpox which generally occurs in children and young people. Once an episode of chickenpox has resolved, the virus is not eliminated from the body and causes shingles many years after the initial infection. The skin lesions form crusts and the oral lesions join to form dermatone or nerve branch. The ulcers frequently affect the gingiva, so tooth pain may be an early complaint. Shingles can also appear on branches of the trigeminal nerve and show up on the face.

Oral Hairy Leukoplakia (OHL)

Oral hairy leukoplakia is an oral infection caused by Epstein-Barr virus (EBV). It appears as white corrugated lesions sometimes “hairy” in appearance, primarily on the lateral aspects of the tongue. This infection may spread across the entire dorsal surface onto the ventral surface of the tongue, and occasionally may be found on oral mucosa.

NEOPLASTIC LESIONS

Kaposi’s Sarcoma

Kaposi’s sarcoma has been the most common malignant tumor associated with HIV infection. Herpes virus (HHV-8) has been implicated in the etiology of Kaposi’s sarcoma. The palate is by far the most commonly affected oral site, followed by the maxillary gingiva, tongue and oropharynx. The lesions are often multifocal and usually present as flat purple plaques or raised nodules. Kaposi’s sarcoma oral lesions may interfere with function, be cosmetically objectionable, and proliferate uncontrollably.

Non-Hodgkin’s Lymphoma (NHL)

Predominately lymphoid tissue of gingiva, palate, or tonsil region. Firm, rubbery, initially painless, progressing to painful, focal swelling or poorly defined alveolar masses. This is an uncommon feature of HIV disease. It is however, the second most common malignancy in this condition, with 4% of patients developing Non Hodgkin’s Lymphoma (NHL) during the course of their disease.
Oropharyngeal Cancer (Squamous Cell Cancer)

HPV is the most common sexually transmitted virus and infection in the US. HPV is strongly associated with oropharyngeal cancer. In the U.S., more than half of the cancers diagnosed in the oropharynx are linked to HPV-16 and HPV-18 (~85 to 95%). The most common symptoms of oropharyngeal cancer are sores in the mouth that do not heal and/or mouth pain. Other possible signs and symptoms include a white or red patch on the gums, tongue, tonsil, or lining of the mouth, a lump in the cheek, sore throat, difficulty swallowing or hoarse voice changes.

Oral cavity and oropharyngeal cancer can be detected early through regular routine examinations by a dentist, doctor, nurse practitioner, physician assistant, or dental hygienist, and by self-examination. The American Cancer Society (ACS) also recommends that doctors examine the mouth and throat as part of routine cancer related checkups. Effective screening procedures for HPV related oral cancers are not available. Due to these limitations the HPV vaccine may be the most effective strategy to reduce HPV oral positive cancers*.

Others:
Salivary Gland Disease and Xerostomia

Salivary gland disease associated with HIV infection (HIV-SGD) can present as Xerostomia with or without salivary gland enlargement. Xerostomia is a major contributing factor in dental decay in HIV-infected individuals. The oral mucosal tissues appear dry and sometimes "shiny" in appearance. The lips may be dry and cracked, and the tongue dry. Dental Caries may be present on the cervical portion of the teeth near the gingival margin. Oral candidiasis may or may not be present.

Recurrent Aphthous Ulcers (RAU)

Aphthous ulcers usually appear on non-keratinized tissues such as the buccal mucosa and oropharynx. They appear as a painful well circumscribed shallow white or gray pseudomembrane surrounded by an erythematous halo and can be severe in people with advanced HIV disease.

Meth Mouth

Rampant caries is one of the hallmarks of chronic methamphetamine abuse. The caries associated with methamphetamine abuse is related to three risk factors: 1) Xerostomia caused by the drug; 2) a subsequent increase in sugared soft drink consumption; and 3) lack of oral hygiene during extended periods of abuse. This is compounded by the decreased resistance to infection experienced by these patients and by HIV-positive patients.
HIV Rapid Testing

Oral health professionals should encourage patients to know their HIV status. Everyone between the ages of 13 and 64 should be tested for HIV. If you know that your patient is at risk for HIV, you should suggest your patient be tested for HIV at least once a year.

The U.S. Food and Drug Administration has approved the use of the oral swab HIV test that produces results in only 20 minutes enabling patients to learn their status in a single visit and allows HIV positive patients to be connected to care immediately. The test uses an fluid called oral mucosal transudate, which lives in the cheeks and gums. It provides a safe, accurate, and rapid test for persons who do not like venipuncture or fingers tick.

These tests indicate the presence of HIV antibodies in oral fluid. If administered correctly, the tests are up to 99 percent accurate. A reactive HIV test result on oral fluid is a preliminary positive and must be confirmed by an additional, more specific test to verify whether HIV antibodies are present.

Should your patient be HIV tested? Should all patients be tested?

All patients in primary care should be offered HIV testing. The Centers for Disease Control and Prevention (CDC) now recommends that all people between the ages of 13 and 64 get tested for HIV regardless of risk.

Healthcare workers face a much lower risk of exposure to infectious diseases from oral fluid than from blood. Contact with saliva has never been proven to result in HIV transmission.

Under the Americans with Disabilities Act (AwDA), dentists have a legal obligation to treat patients with HIV/AIDS. Current medical standards encourage voluntary HIV testing for prevention of HIV transmission and early medical intervention.

CDC recommends that all patients seeking treatment for STDs, including all patients attending STD clinics, should be screened routinely for HIV during each visit for a new complaint, regardless of whether the patient is known or suspected to have specific behavior risks for HIV infection.
How oral swab HIV test works?

The oral swab HIV test was developed to reduce this fear and anxiety, providing results in 20 minutes. These tests indicate the presence of antibodies in oral fluid that have developed to combat HIV infection, and if administered correctly, the tests are up to 99 percent accurate.

1. Open the oral swab HIV test package. Remove the cap from the developer solution vial, and place it into the holder provided with the test kit.

2. Place the test device in your mouth, rubbing it along your gums on the top and bottom so that it collects saliva samples that can react with the developer solution. Do this once.

3. Place the test device in the developer solution vial. Set the timer for 20 minutes.

4. Wait for the timer to go off. Examine the results; if one line is present on the test, the results are negative. If two lines are present on the test, the results are positive, HIV blood test should be performed to confirm the result.

The oral swab HIV test does not actually test for the presence of HIV, but for antibodies often associated with HIV infection. False positives can occur, so positive results must be followed up with standard blood tests to confirm the presence of HIV infection.

A preliminary positive result suggests that antibodies to HIV may be present in a patient’s oral fluid. A negative result means that this test did not detect HIV antibodies in oral fluid. However, if your patient receives a preliminary positive result in the test, you should encourage the patient to get another test and take appropriate precautions. The oral swab HIV test can also produce a false negative test result. It should be explained to patients that there is a "window period" between infection and detectable level of antibodies. Retesting for persons who have tested negatively but have recently engaged in at-risk behavior may be recommended.
What are the advantages of a Rapid HIV Testing?

There are distinct advantages of rapid testing over conventional testing. They include:

- Rapid tests are less costly for HIV testing agencies whose budgets are limited.
- Results are delivered quicker, so positive people get into medical care quicker.
- By early prevention, potential exposures that would have occurred between traditional testing and receiving results are reduced.
- Rapid tests are easier to administer than blood tests.
- Results from rapid tests are as accurate as a traditional Elisa tests.

At all times, confidentiality must be maintained for all patients, regardless of HIV serostatus. Proper consent should be obtained before any confidential medical or dental information is released to other medical or dental providers.

Early identification of HIV infection can lead to earlier diagnosis and prophylaxis or treatment of opportunistic infections, as well as determination of when to initiate ARV therapy.

Recommendations for HIV Testing of Adults, Adolescents, and Pregnant Women in Health-Care Settings

- HIV screening is recommended for patients in all health-care settings after the patient is notified that testing will be performed unless the patient declines (opt-out screening).
- Persons at high risk for HIV infection should be screened for HIV at least annually.
- Separate written consent for HIV testing should not be required; general consent for medical care should be considered sufficient to encompass consent for HIV testing.
- Prevention counseling should not be required with HIV diagnostic testing or as part of HIV screening programs in health-care settings.

- For pregnant women HIV screening should be included in the routine panel of prenatal screening tests for all pregnant women.
- HIV screening is recommended after the patient is notified that testing will be performed unless the patient declines (opt-out screening).
- Separate written consent for HIV testing should not be required; general consent for medical care should be considered sufficient to encompass consent for HIV testing.
- Repeat screening in the third trimester is recommended in certain jurisdictions with elevated rates of HIV infection among pregnant women.

- In general, minors cannot be treated without a parent’s consent. Exceptions are for emergencies, and in some jurisdictions, either specific statutes or the Mature Minor Doctrine.
- Many states allow for HIV testing of minors without their parents’ or guardians’ knowledge or consent. Some states also allow for treating HIV and its manifestations without their parents’ or guardians’ knowledge or consent.
- It is important that medical providers be familiar with the applicable laws of their particular jurisdictions. The legal requirements for testing, reporting, confidentiality, counseling, and dealing with minors, vary from state-to-state. A compendium of the different states’ HIV laws can be found online at: http://www.nccc.ucsf.edu/consultation_library/state_hiv_testing_laws (maintained by the National HIV/AIDS Clinicians’ Consultation Center)
The Pennsylvania/ MidAtlantic AIDS Education and Training Center recognizes the complicated issues of providing quality HIV/AIDS care and focuses on the entire health care team including physicians, nurses, dentists, advanced practice nurses, physician assistants, and pharmacists. The AETC custom designs programs, taking into account the providers’ rural or urban settings, experience, and volume of HIV patients.

The Pennsylvania/ MidAtlantic AIDS Education and Training Center provides HIV/AIDS-related training and technical assistance to health care providers in the District of Columbia, Delaware, Maryland, Ohio, Pennsylvania, Virginia, and West Virginia. The purpose of the project is to increase the providers’ capacity to provide high quality HIV/AIDS care within the region’s health care systems.

For more information on HIV/AIDS education and training opportunities visit: The Pennsylvania/ MidAtlantic AIDS Education and Training Center at www.pamaaetc.org

References


For More Information Visit:

The Pennsylvania/ MidAtlantic Education and Training Center
AETC National Resource Center
Centers for Disease Control and Prevention
HRSA,HIV/AIDS Bureau
American Dental Association
The Americans with Disabilities Act (ADA)
National HIV/AIDS Clinicians’ Consultation Center
HIVdent

www.pamaaetc.org
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