

Oral Health Fact Sheet for Dental Professionals

Adults with Human Immunodeficiency Virus (HIV)

Human immunodeficiency virus (HIV) disease is a syndrome resulting from the acquired deficiency of cellular immunity caused by a complex family of lentiviruses. These are composed of 2 sub types HIV-1 and HIV-2.

HIV infection is characterized by the reduction of the Helper T-lymphocytes in the peripheral blood and the lymph nodes. (ICD 9 code 042)

United States Prevalence

- >1,000,000 persons in US living with HIV infection; 21% are undiagnosed

Manifestations

Clinical – among untreated or treatment resistant adults

- Generalized lymphadenopathy, fever, weight loss, and chronic diarrhea
- Marked suppression of immune function resulting in opportunistic infections such as: pneumocystis carinii pneumonia, cytomegalovirus (CMV) infections, tuberculosis, HSV infections, and cryptococcosis
- HIV-associated Neoplasms (usually non-Hodgkin's lymphoma and Kaposi's Sarcoma)

Oral – oral lesions may be among the first manifestations of disease

- Candidiasis of the oral mucosa (most common oral manifestation)
 - * Pseudomembranous type is most common, followed by atrophic/erythematous type and angular cheilitis
- Aphthous lesions
- HIV-associated periodontal diseases
 - * Linear gingival erythema
 - * Necrotizing ulcerative gingivitis (NUG) and Necrotizing Ulcerative Periodontitis (NUP)
- Viral Infection: Herpes Virus Family – HSV, CMV, EBV, VZV, and Human Papilloma Virus lesions
- Aphthous ulcerations
- Hairy leukoplakia (primarily on the lateral border of the tongue but can involve other areas)
- Salivary gland enlargement and decreased salivary gland function
- Kaposi's sarcoma
- Intraoral, head and neck lymphomas
- Increased caries risk with xerostomia that can be heightened by the use of sugar containing medicines

Other Potential Disorders/Concerns

- Progressive wasting disease if not well managed
- Nausea, vomiting, and diarrhea

Behavioral

- Apathy
- Depression
- Anorexia
- Fatigue

Medication Management and Side Effects

- Highly Active Antiretroviral Therapy (HAART) are multidrug protocols that allow for suppression of HIV replication (thus lowering viral load) and will allow for recovery to CD4 cell counts and ultimately can lead to improved immune function. Several classes of antiretroviral drugs are available and HAART protocols can include one or several drugs from the drug classes listed below:
 - * Protease inhibitors (PI)
 - * Nucleoside reverse transcriptase inhibitors (NRTIs)
 - * Non Nucleoside reverse transcriptase inhibitors (NNRTIs)
 - * Integrase inhibitors
 - * Fusion inhibitors

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Side Effects

- Peripheral neuropathy
- Dysgeusia (taste alteration)
- Lactic acidosis
- Lipodystrophy (disturbances in fat distribution, one of which results in “sunken cheeks”)
- Skin rash
- Melanotic pigmentation and skin rashes
- Hepatotoxicity, Hyperglycemia, Hyperlipidemia, Lactic Acidosis, Lipodystrophy
- Altered bone metabolism: Avascular necrosis of the hip and shoulder, Osteoporosis, Osteopenia
- Neutropenia, Thrombocytopenia, which can cause an increase in the potential for infection and bleeding
- Stevens-Johnson Syndrome/ Erythema Multiforme

HAART therapy can significantly affect the metabolism and elimination of drugs by the liver. Some HAART drugs will cause medications to be broken down and eliminated from the body more slowly than usual resulting in higher than usual blood levels with standard doses. Other HAART drugs can have the opposite effect leading to more rapid breakdown and elimination of drugs from the blood stream resulting in sub optimal blood levels with standard dosing. When prescribing medications to HIV+ patients on HAART therapy, be sure to have considered these possibilities and check with the patient's physician or pharmacist about needs to adjust the doses of drugs you will be prescribing.

Generally, the most commonly prescribed antibiotics for dental infections (e.g., amoxicillin and clindamycin) are not affected by HAART therapy. Additionally, dosing of nystatin rinses and clotrimazole troches are not affected by HAART therapy. However, as noted above, it is always wise to check with the patient's medical team before prescribing for patients on HAART therapy.

Dental Treatment and Prevention

Consult with patient's physician to establish current level of immunocompromise and acceptable procedures specific to treatment plan

- Rule out significant risk for infection due to immunosuppression associated with neutropenia by obtaining blood values from a current CBC with Differential. Look specifically for ANC (absolute neutrophil count) prior to treatment. ANC <1000/mm³ indicates a significant increase of risk for infection and the need for consideration of prophylactic antibiotics for any dental treatment that potentially can cause bacteremia or put the patient at risk for aspiration pneumonia.
- Rule out risk for excessive/prolonged bleeding. Thrombocytopenia (low platelet count) increases risk for bleeding. Platelet count should be obtained and a physician consult is recommended for patients with a platelet count <60,000. Other factors that can also contribute to prolonged bleeding time are liver diseases and medications (including Warfarin and NSAIDS). Obtain INR (International Normalized Ratio) – a value above 2.5 to 3, can require medical interventions if surgeries or invasive treatment is planned. Ask physician about any other bleeding risk factors.
- Document history of any opportunistic infections.
- Determine the current CD4+ lymphocyte count as this will indicate the current level of immunosuppression:
 - * Those with CD4+ cell counts of more than 400 may have reasonable immune response.
 - * As CD4 counts drop below 400 there can be a steadily increasing risk for systemic opportunistic infections such as PCP (Pneumocystis carinii Pneumonia), and other opportunistic systemic as well as local infections. There can be a significant risk for infection when CD4 counts drop below 200.
- Even **asymptomatic** adults may experience infection after oral manipulation. Patients with neutropenia, in particular, are prone to infection and consideration for antibiotic prophylaxis may be indicated for procedures that place the patient at risk for infection. Risk for infection in association with dental treatments will still primarily be related to neutrophil count.
- Obtain a complete list of the patient's medications including non-prescription agents and supplements.

Adults with Human Immunodeficiency Virus (HIV) continued

- Provide dental procedures in accordance with patient's desires and needs. For patients with advanced AIDS, render only more urgently needed treatment to control pain and infection, consistent with the patient's desires and needs.
- Consider aggressive caries prevention programs for patients with xerostomia and/or poor oral hygiene including increased frequency of recall, fluoride varnish application, 1.1% neutral sodium toothpaste/gel or concentrated calcium/fluoride products.
- As needed for patients with xerostomia:
 - * Educate on proper oral hygiene (brushing, flossing) and nutrition.
 - * Recommend brushing teeth with a fluoride containing dentifrice before bedtime. After brushing, apply neutral 1.1% fluoride gel (e.g., Prevident 5000 gel) in trays or by brush for 2 minutes. Instruct patient to spit out excess gel and NOT to rinse with water, eat or drink before going to bed.
 - * Recommend xylitol mints, lozenges, and/or gum to stimulate saliva production and caries resistance.

Additional information: Special Needs Fact Sheets for Providers and Caregivers

References

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- [5 minute clinical consult](#)
- [NIH Institute for HIV](#)

Additional Resources

- [NIH Institute for HIV](#)
- [HIV/AIDS Oral Health Care Resource \(HIVdent.org\)](#)
- Free of charge CDE course: [NIDCR CDE](#) (2 CDE hours)



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