

Oral Health Fact Sheet for Dental Professionals

Children 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. It 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

- Children (birth – 13 years) <10,000 cumulative cases

Manifestations

Clinical – among untreated or treatment resistant children

- 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, and cryptococcosis
- Neoplasms (usually non-Hodgkin's lymphoma)

Oral

Oral lesions may be among the first manifestations of disease; generally oral manifestations are less common among children than adults

- Candidiasis of the oral mucosa (most common oral manifestation)
 - * Pseudomembranous type most common in children, followed by 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, Varicella-zoster, Human Papilloma Virus
- Necrotizing Stomatitis
- Hairy leukoplakia (primarily on the lateral border of the tongue, can involve other areas)
- Salivary gland enlargement
- Kaposi's sarcoma
- Intraoral, head and neck lymphomas
- Facial palsy
- May exhibit delayed dental development
- Increased caries risk with xerostomia that can be heightened by the use of sugar containing medicines

Other Potential Disorders/Concerns

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

Behavioral

- Apathy
- Depression
- Anorexia
- Fatigue

Medication Management and Side Effects

Highly Active Antiretroviral Therapy (HAART) to suppress viral load and delay immune suppression, can include:

- Protease inhibitors (PI)
- Nucleoside reverse transcriptase inhibitors (NRTIs)
- Non Nucleoside reverse transcriptase inhibitors (NNRTIs)
- Integrase inhibitors
- Fusion inhibitors

Side Effects

- Peripheral neuropathy
- Salivary gland enlargement
- Dysgeusia (taste alteration)
- Melanotic pigmentation and skin rashes
- Hepatotoxicity, Hyperglycemia, Hyperlipidemia, Lactic Acidosis, Lipodystrophy,
- Osteonecrosis, Osteoporosis, Osteopenia
- Neutropenia, Thrombocytopenia, which can cause an increase in the potential for bleeding
- Stevens-Johnson Syndrome/ Erythema multiformae

Dental Treatment and Prevention

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

- Rule out significant risk for infection due to immunosuppression 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.
- Thrombocytopenia increases risk for bleeding. Rule out risk for bleeding by obtaining INR (International Normalized Ratio) and platelet count (part of CBC) and ask physician about any other risks for bleeding. A physician consult is recommended for patients with a platelet count < 75,000. Other factors may also contribute to prolonged bleeding time.
- 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 (this is age dependent – young children are considered immune deficient at higher levels of CD4 counts than adults)
 - * Less than 200 CD4+ can be significant risk for infections
- Even *asymptomatic* children may experience infection after oral manipulation. Patients with neutropenia are in particular prone to infection and consideration for antibiotic prophylaxis may be indicated for procedures that place the patient at risk for infection.
- To prevent septicemia extraction of pulpally involved primary teeth is preferred to endodontic (pulpal) therapy.
- Provide dental procedures in accordance with parent/caregiver wants and needs.
- Render only more immediately needed treatment for children with advanced AIDS to control pain and infection.
- Consider aggressive caries prevention programs, including increased frequency of recall, fluoride varnish application, 5,000 ppm toothpaste for patients >6 yrs old.

Additional information: [Special Needs Fact Sheets for Providers and Caregivers](#)

Look for signs of sexual/physical abuse during the examination. Note findings in chart and report any suspected abuse to Child Protective Services, as required by law. Abuse is more common in children with developmental disabilities and often manifests in oral trauma.

Children with Human Immunodeficiency Virus (HIV) continued

References

- Little, J., Falace, D., Miller, C., Rhodus, N., (2008) Dental Management of the Medically Compromised Patient. 7th edition
- dos Santos Pinheiro R, França TT, Ribeiro CM, Leão JC, de Souza IP, Castro GF, Oral manifestations in human immunodeficiency virus infected children in highly active antiretroviral therapy era. *J Oral Pathol Med.* 2009 Sep;38(8):613-22. Epub 2009 Jul 15.
- Holderbaum RM, Veeck EB, Oliveira HW, Silva CL, Fernandes A. Comparison among dental, skeletal and chronological development in HIV-positive children: a radiographic study. *Braz Oral Res.* 2005 Jul-Sep;19(3):209-15. Epub 2005 Nov 21.
- Church, JA. HIV disease in children. The many ways it differs from the disease in adults. *Postgrad Med.* 2000 Apr;107(4): 163-6, 169-71, 175-7 passim.
- 5 Minute Clinical Consult

Additional Resources

- [NIH Institute for HIV](#)
- [Special Care: an Oral Health Professionals Guide to Serving Young Children with Special Health Care Needs](#)
- [Bright Futures Oral Health Pocket Guide](#)
- [American Academy of Pediatric Dentistry: 2011–2012 Definitions, Oral Health Policies and Clinical Guidelines](#)
- [MCH Resource Center](#)
- [ASTDD-Special Needs](#)
- [Block Oral Disease, MA](#)
- [NOHIC-NIDCR publications](#)
- Free of charge CDE courses: [MCH Oral Health CDE](#) (4 CDE hours); [NIDCR CDE](#) (2 CDE hours)