



#### ABOUT US

The Florida/Caribbean AIDS Education and Training Center provides state-of-the-art HIV education, consultation, and resource materials to health care providers in Florida, Puerto Rico and the US Virgin Islands.

Major funding is provided by the US Public Health Service's Health Resources Services Administration (HRSA) DHHS-HAB Grant No. H4AHA00049 through the University of South Florida Center for HIV Education and Research, Michael Knox, PhD, Director.

#### EDITORS

Jeffrey Beal, MD, AAHIVS (239) 839-4645  
aetcbear@embarqmail.com  
Joanne J. Orrick, PharmD, AAHIVE (352) 273-7845  
orricji@ufl.edu

#### PEDIATRIC EDITOR

Belinda Beauchamp, MD (787) 281-8501  
belinda.beauchamp@upr.edu

#### MANAGING EDITOR

Pamela Gatches-Fort, BA (813) 974-2983  
pgatches@usf.edu

## Oral Health Update

**Carol Stewart, MS, DDS, MS**

Dental Director, Florida/Caribbean AIDS Education and Training Center  
Professor, University of Florida College of Dentistry

Oral Lesions associated with HIV infection are significant for several reasons. They may indicate onset of infection, the progression of the decline of the immune system, or resistance to antiretroviral therapy (ART). In addition, the lesions may adversely impact nutrition and medication adherence. Health professionals should also be cognizant of the adverse impact of oral lesions quality of life.

### ORAL LESIONS AND QUALITY OF LIFE (QOL)<sup>1</sup>

A study was conducted to assess the impact of oral HIV lesions on daily activities and QOL in HIV-infected adults (n=150, approximately 2/3 female) living in South Africa. Two groups of subjects were studied: Group one included 71 subjects (mean age of 36.73 years) with oral lesions, and the second group included 79 subjects (mean age of 33.48 years) with no oral lesions.

The Oral Health Impact Profile (OHIP), developed by Slade and Spencer in 1994, was the tool used to assess QOL. This measure has been used for many years for similar assessments and is well – validated. For this study, the Cronbach alpha statistic ranged between 0.81 and 0.95 for each of the seven subscales, indicating excellent reliability.

#### Frequency of oral lesions (Group 1):

Oral candidiasis was the most common oral lesion diagnosed:

- 70.4% with pseudomembranous candidiasis
- 66.2% with erythematous candidiasis
- > 50 % with angular cheilitis.
- 32.4% with oral hairy leukoplakia

#### Most Common QOL related concerns:

- Taste problems (dysgeusia) 70.83%
- Dry mouth 56.94%
- Lymphadenopathy 39.40%

Patients with oral lesions associated with HIV infection had significantly lower QOL than HIV-infected patients with no oral lesions.

These findings are quite significant as QOL is gaining increased recognition as a critical component of medicine and dentistry and a key outcomes indicator in research. Diminished oral health QOL

can adversely affect energy, attitudes towards maintaining oral and systemic health and self-care as well as self-esteem and improving QOL should be a primary goal in managing HIV-infected patients

These concepts support ongoing efforts to integrate oral health into the patient's general care plan. Oral health screenings and provision of care to eliminate infections and restore function and comfort should be incorporated into the care plan for every patient.

An Oral Health Care evaluation should include: baseline medical /dental history; head and neck assessment; treatment plan which includes appropriate periodontal and restorative care; fluoride program to reduce susceptibility to dental caries; education including nutrition, patient home care instructions (brushing and flossing), avoidance of frequent sugar intakes, avoidance of excessive alcohol intake, avoidance of tobacco products, and smoking cessation as appropriate.

### TREATING CANDIDIASIS IN HIV-INFECTED PATIENTS<sup>3</sup>

Despite the availability of ART, oropharyngeal candidiasis (OPC) remains a common problem in the HIV-infected population. This is particularly true for those with advanced immunodeficiency. The appearance of antifungal resistance within these causative yeasts, particularly in patients with recurrent OPC or with long-term use of antifungal therapies, involves a working knowledge of alternative antifungal agents.

Oral fluconazole is commonly used as a first-line treatment for OPC and may be associated with the development of resistance when repeated therapeutic and/or suppressive doses are prescribed.

Recent guidelines document OPC increased risk once CD4+ counts fall to < 200 cells/mm<sup>3</sup> or < 15%. Some experts report the viral load to be most predictive, of OPC noting increased risk at viral loads > 10,000 copies/mL.

For more information,  
please visit our website:

[www.FCAETC.org](http://www.FCAETC.org)

To request clinical consultation, please call the  
National Clinicians' Consultation Hotline:

**1-800-933-3413**

Candida species possess virulence factors that provide the ability to produce invasive infection. These include abilities to adhere to endothelial and epithelial cells, develop hyphae/ pseudohyphae, secrete lytic enzymes, and the capacity for phenotypic switching to gain access to the inside of a cell.

The diagnosis of OPC is often made on clinical presentation with dysphagia, and dysgeusia. Confirmation can be accomplished via 10% potassium hydroxide (KOH) preparation of a mucosal scraping, or a periodic acid-Schiff stain (PAS) revealing fungi pseudohyphae and budding yeast forms. If an infection does not respond despite compliance with antifungal therapy, a definitive culture and susceptibility testing should be considered.

Fluconazole remains first-line therapy dosed at 100 mg-once daily for 7-14 days. Topical clotrimazole troches or nystatin can be used for infection confined to the mouth, but relapse is more common. Itraconazole, voriconazole, or posaconazole in divided doses have been found effective, particularly with fluconazole failures. As reported in this article, some Candida species have intrinsic resistance to some antifungals (e.g. *C. krusei* resistance to fluconazole).

Echinocandins (e.g. caspofungin, micafungin, anidulafngin) may be useful for refractory OPC. They have a unique mechanism of action and lack cross resistance with triazoles; however, they are only available IV. The dental provider is encouraged to consult the Department of Health and Human Services Adult/Adolescent Treatment of Opportunistic Infections Guidelines treatments table (Table 2, [http://www.aidsinfo.nih.gov/contentfiles/Adult\\_OI\\_041009.pdf#page=149](http://www.aidsinfo.nih.gov/contentfiles/Adult_OI_041009.pdf#page=149)) and **F/C AETC Opportunistic Infections (OIs) in HIV/AIDS pocket card** for more information about recommended regimens for OPC.

#### ORAL MANIFESTATIONS IN HIV-INFECTED CHILDREN

Oral candidiasis and other oral manifestations seen in HIV-infected children differ from those seen in adults and are summarized here.<sup>4</sup>

**Oral candidiasis** is the most common lesion in adults and children, but occurs at a higher rate in children (affecting up to 72%). The diagnosis of candidiasis for children is more ominous in that it is associated with a more rapid rate of progression of HIV to AIDS.

#### Xerostomia and Decay

Children have a higher caries burden and more hyposalivation problems than do adults. These require prompt management and fluoride regimens.

#### Parotid Gland Enlargement

Parotid enlargement has been reported in 10%-30% of HIV-infected children, yet is rarely seen in HIV-infected adults.

#### Linear Gingival Erythema (LGE)

Linear gingival erythema is also more commonly seen in children than adults, believed to be due in part to its association with oral candidiasis.

#### HIV SHEDDING IN SALIVA

Levels of HIV shedding in saliva and the relationship to systemic health was studied in a group of 127 women enrolled in the Women's Interagency HIV Study (WIHS) over a period of 5.5 years (October 1998 through March 2004). Multiple saliva samples were analyzed for HIV-1 RNA.<sup>5</sup> Various factors were evaluated to determine possible associations with salivary HIV-1 shedding. The study demonstrated the following results:

Higher levels of HIV shedding in saliva were associated with:

- decreased CD4+ cell count
- higher plasma viral load
- diabetes
- higher proportion of gingival bleeding
- salivary gland hypofunction (low salivary flow rates).

Note: Saliva has not been implicated in the transmission of HIV unless it contains visible blood.

These results are not unexpected, and most coincide with greater disease burden often seen with advanced immunosuppression. However, it should be remembered that salivary gland hypofunction may occur early in the HIV disease spectrum due to salivary gland disease and/or medications.

#### DENTAL TREATMENT CONCERNS

As HIV-infected patients often need extractions due to advanced dental disease, a brief review of presurgical considerations is provided.<sup>6</sup> Baseline history and lab values should be obtained including: CD4, viral load, hepatitis status, CBC (WBC, Hgb, Hct, Platelet count), medications (prescription and OTC), and allergies.

Mild abnormalities in the CBC (e.g. mild anemia, neutropenia, and thrombocytopenia) are often observed in HIV-infected patients.<sup>6</sup> As long as the primary medical provider is experienced in HIV care, and agrees there is no contraindication to surgery, no further work-up may be required.<sup>6</sup> Special attention may be required for hemoglobin less than 7gm/dl, ANC less than 1,500 cells/mm<sup>3</sup>, and platelet count < 100,000 cells/mm<sup>3</sup> before surgical procedures but not routine dental care.<sup>6,8</sup>

The complete collection of previous issues of HIV CareLink are available online.

To view past issues, please visit the archives at:

[www.FCAETC.org/Newsletter](http://www.FCAETC.org/Newsletter)

### Potential drug interactions

Midazolam (Versed®) and triazolam (Halcion®) should not be used with any protease inhibitor or with efavirenz. An exception is that a single intravenous dose of midazolam can be given for a procedure if in a *monitored* setting. For anxiety management, consider lorazepam, oxazepam, or temazepam as these are the benzodiazepines that have the least potential for interactions with ART. The dental provider is encouraged to consult the Department of Health and Human Services Adult/Adolescent Treatment Guidelines drug interactions tables (Tables 14-16, <http://www.aidsinfo.nih.gov/contentfiles/AdultandAdolescentGL.pdf#page=141>) and [www.hiv-druginteractions.org](http://www.hiv-druginteractions.org) for more information about drug interactions with ART.

### Routine oral health care is important for maintaining oral health and life enjoyment

Oral health practitioners treating patients with HIV are finding that their role is similar to that for treating patients with other complex medical conditions.<sup>9</sup>

### Current and Future Challenges for the Dental Team

The scientific literature is replete with reports highlighting the importance of oral health, the impact of oral health on systemic health, and the importance of oral health to quality of life.

Emphasis is being placed on examination of the oral cavity in the initial and interim physical exams given by medical providers. Clinically significant manifestations of oral disease may impact prescribed treatment regimens. A recent publication based on data from a cohort of HIV-positive persons in Miami, Florida is particularly compelling in demonstrating this need.<sup>10</sup>

Cross-sectional data from the baseline of a randomized trial testing the efficacy of a risk reduction intervention was used to assess HIV-positive patients' discussion of oral health and dental health with their HIV primary care provider. Participants were HIV-positive male and female patients attending five HIV primary care clinics in Miami-Dade County. Overall, 37% of patients did not discuss oral health with their provider. After controlling for age, gender, education, and clinic, the odds of discussion of oral health for respondents with five or more primary care visits in the past year were half the odds of those with fewer visits (odds ratio (OR)=0.525, 95% confidence interval (CI): 0.336, 0.821).

There is a need to increase the focus on oral health in the HIV primary care setting knowing that more than one-third of patients reported no discussion of oral health with HIV primary care providers in the past year.

### References

1. Yengopal V, Naidoo S. Do oral lesions associated with HIV affect quality of life? *Oral Surg, Oral Med, Oral Pathol Oral Radio and Endod.* 2008, 106(1): 66-73.
2. National Resource Center. Oral Health Curriculum for Nursing Professionals HRSA / Award No. 6 U69HA00048-02 -02, 2005.
3. Thompson GR 3rd, Patel PK, Kirkpatrick WR, Westbrook SD, Berg D, Erlandsen J, Redding SW, Patterson TF. Oropharyngeal candidiasis in the era of antiretroviral therapy. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod.* 2010; Apr;109(4):488-95.
4. Gonzales CB, Smith S, Galvan A, Mabry J. The differences between providing oral health care to HIV-infected children and HIV-infected adults: a general dentist's guide. *Gen Den.* 2010 Sep-Oct;58(5):424-32; quiz 733-4.
5. Navazesh M, Mulligan R, Kono N, Kumar SK, Nowicki M, Alves M, Mack WJ. Oral and systemic health correlates of HIV-1 shedding in saliva. *J Dent Res* 2010; 89(10): 1074-1079.
6. Moswin AH, Epstein JB. Essential Medical Issues Related to HIV in Dentistry. *JCDA* Jan 2008; 73(10): 945-52.
7. Coyle TE (1997). Hematologic complications of human immunodeficiency virus infection and the acquired immunodeficiency. *Med Clin North Am* 1997; 81: 449-470.
8. Practice Guidelines for blood component therapy. A report by the American Society of Anesthesiologists Task Force on Blood Component Therapy. *Anesthesiology* 1996; 84(3):732-47. 13. Treatment Action Group. The 2007 Pipeline Report. Experimental treatments
9. Oral Patton L. Hematologic abnormalities among HIV infected patients. *Oral Surg Oral Med Oral Pathol* 1999; 88: 561-567
10. Pereyra M, Metsch LR, Gooden L. HIV-positive patients' discussion of oral health with their HIV primary care providers in Miami, Florida. *AIDS Care.* 2009 Dec;21(12):1578-84.
11. Centers for Disease Control and Prevention. Updated U.S. Public Health Service Guidelines for the Management of Occupational Exposures to HIV and Recommendations for Postexposure Prophylaxis. *MMWR* 2005;54(No. RR-9).

As dentists are not always immediately available for consultation in clinical care settings, the ability for intake medical professionals, including all nurses, physician assistants, and physicians to perform oral screenings and patient triage becomes increasingly important. The Florida/Caribbean AETC Dental Team is available to provide on-site training to increase knowledge and comfort level with oral screening procedures. To submit a consultation request, send an e-mail to [consultation@faetc.org](mailto:consultation@faetc.org).

The complete collection of previous issues of HIV CareLink are available online.

To view past issues, please visit the archives at:

[www.FCAETC.org/Newsletter](http://www.FCAETC.org/Newsletter)



Florida/Caribbean AIDS Education and Training Center

# HIV CareLink

A Newsletter for HIV/AIDS Primary Care Providers



Volume 12 - Issue 3

March 1, 2011

### FDA Recall Notice:

The FDA recently announced a voluntary recall of all lots of alcohol prep pads, alcohol swabs and alcohol swabsticks manufactured by the Triad Group and marketed under various brand names. This recall is being initiated due to concerns about potential contamination of the products with the bacteria *Bacillus cereus*. The alcohol prep pads are co-packaged and distributed with (Enfuvirtide) Fuzeon®, (pegylated interferon) Pegasys® and other products. The products were widely used in hospitals and stocked in retail pharmacies. These Triad products should not be used and patients should use an alternative product not included in the recall.

Go to the following link for more information:

<http://www.fda.gov/Safety/MedWatch/SafetyInformation/SafetyAlertsforHumanMedicalProducts/ucm239319.htm>



Find us on  
**Facebook**

**Become a Fan of F/C AETC**  
CLICK HERE

**REGISTER TODAY**  
**May 13-14, 2011**

**20<sup>th</sup> ANNUAL HIV CONFERENCE**  
of the Florida/Caribbean AIDS Education and Training Center  
**Hilton Orlando**

**CHOOSE FROM FOUR HIV/AIDS CONCURRENT CLINICAL SESSIONS:**  
Fundamentals • Advanced • Nursing Issues • Pediatrics  
Pharmacy and Medical Case Management Related Topics Available

**KEYNOTE SPEAKERS**

Friday, May 13  
**Mario Stevenson, Ph.D.**  
*Obstacles to Eradication of HIV through Antiretroviral Therapy*

Saturday, May 14  
**Julie Cross**  
*Health Care Reform and the National AIDS Strategy*

**USF HEALTH** **Florida/Caribbean AETC**

**www.FCAETC.org/Conference**  
Funded in part by DHHS-HAB Grant No. H4AHA00049





The complete collection of previous issues of HIV CareLink are available online.

To view past issues, please visit the archives at:

**[www.FCAETC.org/Newsletter](http://www.FCAETC.org/Newsletter)**