

## Thirty Years of HIV/AIDS and Related Oral Manifestations and Management

Mahvash Navazesh, DMD

### Introduction

The early 1980s brought the explosion of information availability and the emergence of Human Immunodeficiency Virus (HIV) infection. Advances in information technology enabled humans to get access to information instantly. On June 5, 1981, Morbidity and Mortality Weekly Report published a rare type of pneumonia (pneumocystis carinii) in 5 previously healthy homosexual men in Los Angeles.<sup>1</sup> On the other side of the world, in Uganda, the emergence of a severe wasting syndrome locally known as "slim disease" was reported. What was originally perceived as a rumor turned to a stigma, fear, an epidemic and eventually a tragedy. The rare reported cases with respiratory diseases in Los Angeles were later marked as the beginning of the HIV epidemic. Slim disease was soon found to be associated with Acquired Immune Deficiency Syndrome (AIDS), an advanced stage of HIV infection. In 1984, LAV virus was discovered in France, and a year later HTLV III was isolated in the U.S. Both viruses were later found to be the same virus and renamed HIV. In 1999, HIV was found to be a variation of the Simian Immunodeficiency Virus (SIV) found in a chimpanzee species in West Africa.

At the beginning, not much was known about the etiology of HIV infection and its mode of transmission. Because the disease was more prevalent among men who had sex with men, sex workers and IV drug users, public anxiety grew and led to fear, prejudice and stigmatization. Ryan White, a 13 year old hemophiliac boy with AIDS, was banned from school, and gay men and drug users were seen as having brought the disease upon themselves. What was perceived as "a gay epidemic" started turning up in children, blood transfusion recipients and heterosexuals. On a global level and at the World Health Organization summits, the need for every country to have a supportive and non-discriminatory social environment was recognized. The U.S. Public Health Service added AIDS to its list of diseases for which

### Abstract

This manuscript was part of the proceedings from the conference Advances in Practice, hosted by the National Center for Dental Hygiene Research & Practice, held in Phoenix, Arizona, on June 12, 2012.

**Keywords:** HIV/AIDS, HIV infection, HIV oral conditions

This study supports the NDHRA priority area, **Clinical Dental Hygiene Care:** Investigate how dental hygienists identify patients who are at-risk for oral/systemic disease.

people on public health grounds could be excluded from the U.S., a ban which was only lifted in 2010 by President Barack Obama. The first World AIDS Day took place on December 1, 1988.

Throughout the 1990s, awareness of HIV and AIDS continued to grow, as information about HIV infection and its mode of transmission in high profile figures such as movie star Rock Hudson, iconic musician Freddie Mercury, pianist and entertainer Liberace, basketball player Magic Johnson and tennis player Arthur Ashe became public knowledge. The late 1980s through the mid-1990s introduced antiretroviral medications such as azidothymidine, dideoxyinosine, dideoxycytidine, protease inhibitors, combination drug therapy and Highly Active Antiretroviral Therapy (HAART). HIV infection is no longer looked at as a death sentence, however, there is still no available cure.

The estimated number of adults and children living with HIV worldwide in 2010 was 34 million. Newly infected individuals accounted for 2.7 million. The estimated number of children less than 15 years of age living with HIV is 3.4 million, and newly infected individuals account for 390,000.<sup>2,3</sup> In the U.S., the CDC estimated the number of individuals living with HIV as of the end of 2008 to be 1,178,350, and an estimated 594,496 having died of AIDS since 1981. The racial/ethnic distributions of AIDS diagnoses during 2009 in adolescents 13 to 19 years of age, young adults 20 to 24 years of age, and adults 25 and over in the U.S. and dependent areas revealed that in all 3 age groups, African Americans had the largest

percentage of AIDS diagnoses (68, 62 and 47%, respectively). In 2009, African Americans made up approximately 13% of the population of the 40 states, but accounted for 52% of diagnoses of HIV infection. Whites made up 68% of the population of the 40 states but accounted for 28% of diagnoses of HIV infection. Among Hispanic/Latino males in 2009, an estimated 71% of diagnosed HIV infections were attributed to male-to-male sexual contact, while in females, 83% of diagnosed HIV infections were attributed to heterosexual contact.<sup>4,5</sup>

In general, the advancement of science and enhancement of public knowledge have significantly contributed to the following facts:

- The number of people living with HIV infection in the U.S. (HIV prevalence) is higher than ever before
- The annual number of new HIV infections (HIV incidence) has remained relatively stable in recent years
- The great majority of persons with HIV infection do not transmit HIV to others
- More people in the U.S. with HIV know of their HIV infection
- Diagnoses of HIV infection reported to CDC have remained stable in recent years
- HIV diagnosis rates have remained stable in recent years

The following challenges still exist:

- HIV disproportionately affects certain populations
- Despite many prevention and treatment successes, people are still dying from AIDS
- Too many people are diagnosed with HIV late in the course of infection
- AIDS disproportionately affects different parts of the country/world

Many individuals who are 60 or older are sexually active and are at risk for sexually transmitted diseases. Older women may be especially at risk because age-related vaginal thinning and dryness can cause tears in the vaginal area. Some older persons inject drugs or smoke crack cocaine, which

can put them at risk for HIV infection. Some older persons, compared with those who are younger, may be less knowledgeable about HIV/AIDS and therefore less likely to protect themselves. Many do not perceive themselves as at risk for HIV, do not use condoms and do not get tested for HIV. Older persons of minority races/ethnicities may face discrimination and stigma that can lead to later testing, diagnosis and reluctance to seek services. Socioeconomic barriers, limited access to care, cultural differences and lack of compliance with recommended therapy have impact on the prevalence of HIV infection.

Fungal, viral and bacterial infections are often listed as common causes for oral lesions associated with HIV infection.<sup>6</sup> The prevalence of pseudomembranous candidiasis, erythematous candidiasis, HIV associated periodontal diseases and hairy leukoplakia is lower in some regions in the presence of HAART.<sup>7</sup> Salivary gland hypofunction leading to dental caries is a potential HIV associated condition as well as an adverse effect of some antiretroviral medications.<sup>8</sup>

The management of HIV infected individuals should include a thorough history and clinical evaluation, as well as diagnostic laboratory work up, that may include: sialometric, serologic, microbial, histologic and/or imaging evaluations, nutritional counseling, medical consult, and psychological evaluation. The treatment plan should focus on oral and systemic health promotion and disease prevention, salivary gland stimulation, salivary substitution, caries control and prevention, fungal infection prevention, and palliative therapy.

HIVdent is a good resource for dental professionals to use to find current information about HIV-related oral conditions and treatment. Oral health care providers continue to play a significant role in the early detection of signs and symptoms of HIV infection and its progression to AIDS.

*Mahvash Navazesh, DMD, is a Professor, Diagnostic Sciences, and Associate Dean, Academic Affairs and Student Life, at the Ostrow School of Dentistry of USC.*

## References

---

1. Centers for Disease Control (CDC). Pneumocystis pneumonia--Los Angeles. *MMWR Morb Mortal Wkly Rep.* 1981;30(21):250-252.
2. Joint United Nations Programme on HIV/AIDS. Global report: UNAIDS report on the global AIDS epidemic 2010. [Internet]. [cited 2011 May 26]. Available from: [http://www.unaids.org/global-report/global\\_report.htm](http://www.unaids.org/global-report/global_report.htm)
3. World Health Organization. Core slides HIV/AIDS Epidemiology, Health Care Response. November 2012 [Internet]. [cited 2013 April 3]. Available from: [http://www.who.int/hiv/data/2012\\_epi\\_core\\_en.pps](http://www.who.int/hiv/data/2012_epi_core_en.pps)
4. Centers for Disease Control and Prevention (CDC). HIV surveillance--United States, 1981-2008. *MMWR Morb Mortal Wkly Rep.* 2011;60(21):689-693.
5. Centers for Disease Control. Diagnoses of HIV infection and AIDS in the United States and dependent areas, 2009. HIV surveillance report, vol. 21. [Internet]. [cited 2011 May 26]. Available from: <http://www.cdc.gov/hiv/surveillance/resources/reports/2009report/index.htm>
6. Navazesh M. Current Oral Manifestations of HIV Infection. *J Calif Dent Assoc.* 2001;29(2):137-141.
7. Greenspan D, Gange SJ, Phelan JA, et al. Incidence of oral lesions in HIV-1-infected women: reduction with HAART. *J Dent Res.* 2004;83(2):145-150.
8. Navazesh M, Mulligan R, Karim R, et al. Effect of HAART on salivary gland function in the Women's Interagency HIV Study (WIHS). *Oral Dis.* 2009;15(1):52-60.