

Barriers in Providing Dental treatment to HIV/AIDS Patients

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ABSTRACT

HIV/AIDS is a pandemic, affects globally. There are millions of people in this world who lives with HIV/AIDS, some are unaware of their disease. Health care including oral health care is essential for them. Even though, the chance of transmitting HIV in dental setting is less, but the lack of knowledge about proper infection control and poor management of the HIV patients will lead to a risk of transmission. This article discuss about the barriers in providing treatment to HIV/AIDS infected patients and standard procedures to be followed when treating such patients.

Keywords: HIV/AIDS, infection, treatment, health-care

INTRODUCTION

Human Immunodeficiency Virus is an infection that afflicts globally and the end point of it being AIDS. In 2015 there were 2.1 million new infections worldwide, adding up to a total of 36.7 million people living with HIV.¹ According to India HIV estimations 2015 report, the total number of people living with HIV in India is estimated at 21.17 lakhs, among which children (<5 years) accounting for 6.54% and 40.5% of infections are among females.²

HIV and AIDS have profoundly affected every aspect of the public health sector and the infection constitutes an unparalleled public health challenge.³ The risk of transmission of HIV in dental setting is less, but the chance of transmission cannot be neglected. The main concern of clinicians regarding proving care to HIV positive patients is about occupational contagion, they do not trust the honesty of HIV patients and they believe that there are additional costs involved in treating this patients.^{4,5} Even though, there are many disconcertment regarding the dental treatment of HIV/AIDS infected patients, a positive attitude was reported among dental professionals in providing treatment to HIV infected patients.^{5,6}

Health-care workers are key players in the prevention and management of HIV infection. This includes oral health-care workers (OHCWs) who have a significant role to play in the overall health-care delivery to patients with HIV/AIDS.³ Poor knowledge about HIV transmission among health care workers will lead to potential stigma and lack of treatment for people living with HIV.

The aim of this review paper is to address the barriers in providing dental treatment to HIV/AIDS infected patients and the standard procedures that have to be followed by the clinicians to overcome this stigma.

Barriers in providing dental treatment to HIV/AIDS infected patients

HIV-related oral conditions occur in a large proportion of individuals who are HIV-positive and frequently are misdiagnosed or inadequately treated. The provision of dental care for people who are HIV-positive is essential for their overall health and well-being. Previous studies have suggested that knowledge may affect attitudes towards treatment of HIV/

AIDS patients. A thorough understanding of the barrier will help us to avoid the stigma of treating HIV/AIDS infected patients.⁷ The main barriers involved are

1. Infection control procedures necessary for treatment of the patients with HIV/AIDS could be time consuming
2. Lack of belief in an ethical responsibility to treat patients with HIV
3. Fears related to cross infection
4. Financial burden for practice.^{7,8}

Procedures to avoid transmission between patients and dental care workers and from one patient to another should be routinely applied, regardless of whether patients are known to be HIV-positive. Dentists should be taught that universal precautions should be used with all patients, since dentists and patients themselves will not always be aware of who is HIV-positive⁷

Steps to mitigate the barriers

To prevent HIV/AIDS, universal precautions are mandatory while treating all patients, Proper infection control should be exercised and practiced and also by improving the knowledge of practioners and conducting intervention programmes. The following steps should be taken to mitigate the barriers.

1. Reducing the potential for disease transmission

A major concern for any clinician treating HIV-infected patients is to minimize the risk of exposure for themselves, their staff, and other patients. Dental procedures frequently cause bleeding and exposure to infected blood is a known means of HIV transmission. Saliva has not been shown to transmit HIV in a dental setting, but the potential for exposure to bloody saliva does exist. To reduce the risk of disease transmission, the American Dental Association (ADA), the Occupational Safety and Health Association (OSHA), and the CDC have set standards of infection control for dental health care personnel (DHCP)⁹

- Standard precautions include use of PPE (e.g., gloves, masks, protective eyewear or face shield, and gowns) intended to prevent skin and mucous membrane exposures. Other protective equipment (e.g., finger guards while suturing) might also reduce injuries during dental procedures

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- Engineering controls are the primary method to reduce exposures to blood and OPIM (other potentially infectious material) from sharp instruments and needles. These controls are frequently technology-based and often incorporate safer designs of instruments and devices (e.g., self-sheathing anesthetic needles and dental units designed to shield burs in hand pieces) to reduce percutaneous injuries
- Work-practice controls establish practices to protect DHCP (Dental health care professionals) whose responsibilities include handling, using, assembling, or processing sharp devices (e.g., needles, scalers, laboratory utility knives, burs, explorers, and endodontic files) or sharps disposal containers. Work-practice controls can include removing burs before disassembling the hand piece from the dental unit, restricting use of fingers in tissue retraction or palpation during suturing and administration of anesthesia, and minimizing potentially uncontrolled movements of such instruments as scalers or laboratory knives¹⁰

2. Risk screening

Risk screening is a brief assessment of behavioral and clinical factors associated with transmission of HIV and other STDs. Risk screening identifies patients at greatest risk for transmitting HIV so that prevention and referral recommendations can be focused on these patients. Screening methods include probing for behaviors associated with transmission of HIV and other STDs, eliciting patient reports of symptoms of other STDs, and laboratory testing for other STDs. This can be achieved through a proper history taking that includes sexual behavior of the patient. Before the patient is seen by the clinician, screening for behavioral risks can be done with a self-administered questionnaire; a computer-, audio-, or video-assisted questionnaire; or a brief interview with ancillary staff; the clinician can then review the results on the patient's medical record. Alternatively, behavioral risk screening can be done during the medical encounter (e.g., as part of the history); either open-ended questions or a checklist approach with in-depth discussion about positive responses can be used.¹¹

3. Rapid HIV tests

Rapid HIV test are similar to Standard HIV test ELISA which looks for antibodies to HIV in patient's blood. The advent of rapid HIV screening technologies allows the individuals to learn their HIV status approximately in 20 minutes, well within time

frame of a routine dental visit. If the rapid test is positive it should be followed up with a confirmatory tests like western Blot or immunofluorescence antibody. Table 1 shows FDA approved Rapid HIV tests.¹²

4. Prevent sharps and needle stick injury

Percutaneous exposure of blood was reported among dental workers with cutting devices such as scalers, burs; smaller gauge hollow –bore needles and explores and also during use of device or afterward during cleanup /disassembly or recapping. These injuries can be prevented if dental workers are adhering to the current recommendations for safe handling of needles and other sharp instruments. Preventing other injuries may require additional interventions such as development of safer devices and continued modifications in work practice.¹³

Key recommendation for sharps safety in dental setting (CDC)

1. Develop and maintain infection prevention and occupational health programs.
2. Provide supplies necessary for adherence to Standard Precautions (e.g., hand hygiene products, safer devices to reduce percutaneous injuries, personal protective equipment).
3. Assign at least one individual trained in infection prevention responsibility for coordinating the program.
4. Develop and maintain written infection prevention policies and procedures appropriate for the services provided by the facility and based on evidence-based guidelines, regulations, or standards.
5. Facility has system for early detection and management of potentially infectious persons at initial points of patient encounter.¹⁴

5. Post exposure prophylaxis

Prospective studies of HCWs (Health care workers) have estimated that the average risk for HIV transmission after a percutaneous exposure to HIV-infected blood is approximately 0.3% and that after a mucous membrane exposure it is 0.09%. After an occupational blood exposure, first aid should be administered as necessary. Puncture wounds and other injuries to the skin should be washed with soap and water; mucous membranes should be flushed with water. No evidence exists that using antiseptics for wound care or expressing fluid by squeezing the wound further reduces the risk of blood borne pathogen transmission; however, use of antiseptics is not

Test name and manufacturer	Specimen to be tested	CLIA-Walved Specimens	Time to complete
Ora Quick ADVANCE ½ Ora sure technologies, Inc www.oracare.com	Whole blood, saliva, serum/plasma	Whole blood and saliva	25-30 minutes
Reveal G-3 HIV-1 www.medmira.com	Serum/plasma	None	30-60 minutes
Uni-Gold Recombigen Triality Biotech	Whole blood, serum/plasma	Whole blood	10-15 minutes
Multisport HIV1/HIV2 BioRad Laboratories	Serum/plasma	None	10-15 minutes
Clear view 1/2 stat-Pak and clear view complete HIV1/2	Whole blood, serum/plasma	Whole blood, serum, plasma	20 minutes

Table-1: FDA approved Rapid HIV test

contraindicated. The application of caustic agents (e.g., bleach) or the injection of antiseptics or disinfectants into the wound is not recommended. Exposed DHCP should immediately report the exposure to the infection-control coordinator or other designated person, who should initiate referral to the qualified health care professional and complete necessary reports¹⁰ Information from a retrospective case-control study of HCWs from France, the United Kingdom, and the United States suggesting that ZDV (Zidovudine) PEP may reduce the risk for HIV transmission after occupational exposure to HIV infected blood. ZDV and other reverse transcriptase inhibitors may be important for PEP by preventing early viral dissemination.¹⁵

Sterilization and disinfection of dental instruments

1. Surgical and other instruments that normally penetrate soft tissue and/or bone (e.g., forceps, scalpels, bone chisels, scalers, and surgical burs) should be sterilized after each use. Instruments that are not intended to penetrate oral soft tissues or bone (e.g., amalgam condensers, plastic instruments, and burs) but that may come into contact with oral tissues should also be sterilized after each use, if possible; however, if sterilization is not feasible, the latter instruments should receive high-level disinfection
2. Before high-level disinfection or sterilization, instruments should be cleaned to remove debris. Cleaning may be accomplished by a thorough scrubbing with soap and water or a detergent, or by using a mechanical device (e.g., an ultrasonic cleaner). Persons involved in cleaning and decontaminating instruments should wear heavy-duty rubber gloves to prevent hand injuries. Metal and heat-stable dental instruments should be routinely sterilized between use by steam under pressure (autoclaving), dry heat, or chemical vapor. The adequacy of sterilization cycles should be verified by the periodic use of spore-testing devices (e.g., weekly for most dental practices). Heat- and steam-sensitive chemical indicators may be used on the outside of each pack to assure it has been exposed to a sterilizing cycle. Heat-sensitive instruments may require up to 10 hours exposure in a liquid chemical agent registered by the U.S. Environmental Protection Agency (EPA) as a disinfectant/sterilant; this should be followed by rinsing with sterile water. High-level disinfection may be accomplished by immersion in either boiling water for at least 10 minutes or an EPA-registered disinfectant/sterilant chemical for the exposure time recommended by the chemical's manufacturer.
3. At the completion of work activities, countertops and surfaces that may have become contaminated with blood or saliva should be wiped with absorbent toweling to remove extraneous organic material, then disinfected with a suitable chemical germicide. A solution of sodium hypochlorite (household bleach) prepared fresh daily is an inexpensive and very effective germicide. Concentrations ranging from 5,000 ppm (a 1:10 dilution of household bleach) to 500 ppm (a 1:100 dilution) sodium hypochlorite are effective, depending on the amount of organic material (e.g., blood, mucus, etc.) present on the surface to be cleaned and disinfected. Caution should be exercised, since sodium hypochlorite is corrosive to metals, especially aluminum¹⁶

6. Dental anxiety in HIV patients

Dental anxiety has been defined as a barrier in to receiving dental care among HIV infected individuals.¹⁷ In a qualitative study assessing HIV-related stigma in the dental setting, 45 percent of 60 HIV-infected individuals interviewed indicated that they anticipated judgment, stigmatization, or disrespectful treatment in the dental office because of their HIV status. Thirty-five percent endorsed a fear of the dentist and an equal number concerns about confidentiality and receiving humane treatment. Management of dental fear may require counseling, sedation and sometimes cognitive behavioral psychology. Several strategies related to local anesthesia and oral sedation may be helpful in managing the fearful patient. These include the use of vibration injection syringes, the use of lidocaine and prilocaine dental gel to produce a profound topical anesthesia during deep scaling and root planning, and the use of the sedative/anxiolytics for sedation.¹⁸

CONCLUSION

Modern medicine has developed many new treatment techniques and management procedures for HIV patients, so that they can live longer. As there are many oral problems associated with HIV, dental care will become part of their routine. As the number of individuals with HIV are increasing day by day, dentist must be aware of the special precautions that has to be taken while treating a HIV positive patient. Lack of knowledge will lead to stigma related issues and negligence of treatment. This article discuss about all clinical considerations that has to be followed while treating HIV infected patients.

REFERENCES

1. WHO. Global AIDS update UNAIDS report, May 2016. Accessed on 12/5/17 Online. Available at <http://www.who.int/hiv/pub/arv/global>
2. India HIV Estimations 2015. (Technical report). Accessed on 2/5/17 Online. Available at <http://www.naco.gov.in/sites/default/files/India%20HIV%20Estimations%202015.pdf>
3. Taiwo OO. Dental practice, human immunodeficiency virus transmission and occupational risks: views from a teaching hospital in Nigeria. *Annals of medical and health sciences research*. 2014;4:94-8.
4. Lapidus A, Sandler M. HIV and the dental profession. *The Journal of the Dental Association of South Africa*. 1997; 52:721-6.
5. Azodo CC, Ehigiator O, Oboro HO, Ehizele AO, Umoh A, Ezeja EB, Omili M, Ehigiator L. Nigerian dental students' willingness to treat HIV-positive patients. *Journal of dental education*. 2010;74:446-52.
6. N Vijayalaxmi, Reddy L, LA Swapna, S Reddy, T Ramesh, M Padmareddy. Are you willing to treat patients with HIV?. An anonymous survey among staffs and students of a dental institution. *Oral Health Dent Manag*. 2014;13:745-8.
7. Oberoi SS, Sharma N, Mohanty V, Marya C, Rekhi A, Oberoi A. Knowledge and Attitude of Faculty Members Working in Dental Institutions towards the Dental Treatment of Patients with HIV/AIDS. *International Scholarly Research Notices*. 2014;2014:429692.
8. McCarthy GM, Koval JJ, MacDonald JK. Factors associated with refusal to treat HIV-infected patients: the results of a national survey of dentists in Canada. *Am J*

- Public Health. 1999;89:541–5.
9. HIV/AIDS in Dental Care. A Case-Based Self-Study Module for Dental Health Care Personnel. Accessed on 28/4/17 Online available at http://www.hivdent.org/_oralmanifestations_/PDF/Dental%20HIV.pdf
 10. Guidelines for Infection Control in Dental HealthCare Settings --- 2003. Accessed on 23/4/17 Online available at <https://www.cdc.gov/mmwr/preview/mmwrhtml/rr5217a1.htm>
 11. Incorporating HIV Prevention into medical care of persons living with HIV. Recommendations of CDC, the Health Resources and Services Administration, the National institutes of health, and the HIV Medicine Association of the Infectious disease society of America. MMWR Recomm Rep. 2004;53:744.
 12. David A. Reznik. Rapid HIV Testing in the Dental Setting. Accessed on 26/4/17 Online available at http://www.hivdent.org/_oralmanifestations_/PDF/Dental%20HIV.pdf
 13. Gooch BF, Cardo DM, Marcus R, McKibben PS, Cleveland JL, Srivastava PU, Culver DH, Bell DM. Percutaneous exposure to HIV Infected blood among dental workers enrolled in CDC needle stick study. J Am Dent Assoc. 1995;126:1237-42.
 14. Summary of Infection Prevention Practices in Dental Settings. Accessed on 16/5/17 Online Available at. <https://www.cdc.gov/oralhealth/infectioncontrol/pdf/safe-care.pdf>
 15. Beltrami EM, Williams IT, Shapiro CN, Chamberland ME. Risk and management of blood-borne infections in health care workers. Clinical microbiology reviews. 2000;13:385-407.
 16. CDC. Recommended infection control for dentistry. Accessed on 22/5/16 Available online at <https://www.cdc.gov/oralhealth/infectioncontrol/pdf/safe-care.pdf>
 17. Singer R, Cardenas G, Xavier J, Jeanty Y, Pereyra, M, Rodriguez A, Metsch, L. R. Dental Anxiety and the Use of Oral Health Services Among People Attending Two HIV Primary Care Clinics in Miami. Public Health Reports. 2012;127:36–44.
 18. Burgess J. HIV and Dental Treatment. JSM Dent. 2016;4: 1062.

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