

**MANAGING HIV POSITIVES IN ORAL & MAXILLOFACIAL SURGERY**

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**ABSTRACT**

AIDS stands for acquired immunodeficiency syndrome which is a symptom complex caused by HIV, i.e. human immunodeficiency virus which is a retrovirus. In India, the current dramatic spread of blood-borne infections from HIV/AIDS and hepatitis C is increasing the morbidity and mortality and hence aggravating the suffering of the community. AIDS was officially recognized for the first time in June 1981, at the Centres for Disease Control, USA. Transmission of HIV still remains the primary concern for dental providers who treat infected patients. The fear of contracting HIV is also a major concern in community at large, and providers need to be well informed regarding known modes of transmission.

**KEYWORDS:** AIDS; HIV; Oral Surgery**INTRODUCTION**

India has the second largest population of HIV infected individuals. Since the first case of HIV was detected in Chennai in 1986, cases of HIV infection have been detected in all states across the country. As HIV gains a strong hold in the body, CD4 cells, the primary target of HIV begin to decline.

HIV can be transmitted by 3 modes:

1. Sexual intercourse
2. Blood borne infection
3. HIV infected women to her fetus.

The natural history of HIV infection is divided into following stages:

1. Viral transmission
2. Primary HIV infection
3. Seroconversion
4. Clinical latent period with or without persistent generalized lymphadenopathy.

5. Early symptomatic HIV infection
6. AIDS (CD4 cell count <200/cumm)
7. Advanced HIV infection (CD4 cell count <50/cumm)

The AIDS epidemic has provided ample opportunities to cast blame. Initially the world seemed to "blame" Africa for starting the epidemic. Some of America's fundamentalists evangelists cited AIDS as a sign of GOD's wrath on homosexuals and drug users. As scientific understanding has increased and superstition subsided, much has changed about epidemics throughout history.<sup>[1]</sup>

**ROUTES OF TRANSMISSION**

Based on Programme data, unprotected sex (87.4% heterosexual and 1.3% homosexual) is the major route of HIV transmission, followed by transmission from Parent to Child (5.4%) and use of infected blood and blood products (1.0%). While Injecting Drug Use is the predominant route of transmission in north eastern states, it accounts for 1.6 percent of HIV infections.<sup>[2]</sup>

**DOCUMENTED AND UNDOCUMENTED MODES OF HIV TRANSMISSION****DOCUMENTED MODE OF TRANSMISSION**

Sexual transmission, exposure to blood and blood products, vertical transmission from mother to fetus/child

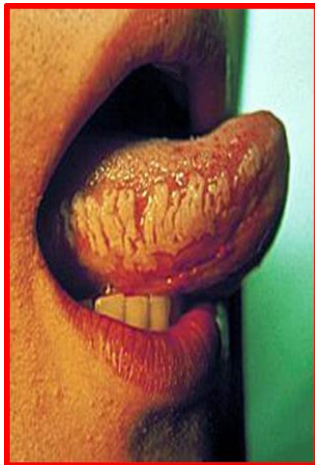
**UNDOCUMENTED MODE OF TRANSMISSION**

Aerosol, dental rotary instruments, tears, urine, sweat, hepatitis B vaccine, insect bites, casual contacts.<sup>[3]</sup>

**CLINICAL STAGES**

The WHO system for adults classifies patients into one of the four hierarchical clinical stages ranging from stage 1 (asymptomatic) to stage 4 (AIDS).

**Stage 1:** Patients who are asymptomatic or have



**Fig. 1**



**Fig. 2**



**Fig. 3**



**Fig. 4**

e persistent generalized lymphadenopathy.  
**Stage 2:** It is mildly symptomatic stage characterized by: a) unexplained weight loss of <10% of total body weight; b) recurrent respiratory infections & dermatological conditions.  
**Stage 3:** It is moderately symptomatic phase characterized by: a) Unexplained weight loss of >10% of total body weight; b) Prolonged unexplained diarrhea; c) Pulmonary tuberculosis; d) Severe systemic bacterial infections and mucocutaneous conditions.  
**Stage 4:** Severely symptomatic phase involves all of the AIDS defining illness.<sup>[4]</sup>

**CLINICAL MANIFESTATIONS OF HIV DISEASE**

The clinical manifestations associated with the HIV disease remain the most visible indicator of a patient's disease progression. The most significant early manifestation of HIV infection in Africa was marked by: slim disease (diarrhoea and wasting); tuberculosis; variety of opportunistic Infections (OI); weight loss, fever;

and dermatological symptoms, Aspergillosis, Parvovirus B19, Candidiasis, Cryptococcosis, Cytomegalovirus, Herpes simplex virus, Kaposi's sarcoma, Pneumocystitis pneumonia, Molluscum contagiosum, Dermatoses, Anogenital warts and Immune reconstitution disease.<sup>[5]</sup>

**INTRAORAL MANIFESTATIONS ASSOCIATED WITH AIDS**

Oral candidiasis with or without oropharyngeal involvement (OPC), oral hairy leukoplakia (OHL), recurrent aphthous-like ulcerations (RAU), oral Kaposi's sarcoma (OKS), orolabial herpes simplex infection (HSV), oral herpes zoster infection (VZV), intraoral or perioral warts (HPV), and HIV-associated periodontal diseases.<sup>[6]</sup>

**CURRENT HIV TESTING SYSTEM**

The first test applied to a blood specimen is an antibody test, a **3rd generation enzyme immunoassay (EIA) test**. This test has high sensitivity and is used as a screening test. To confirm or to rule out HIV infection, any degree

of reactivity on EIA testing leads to a series of further tests including:

- a) **4th generation EIA test:** This test identifies specimens that are positive for p24 antigen or HIV antibody, but does not distinguish between them.
- a) **Western Blot test:** The Western Blot test is considered the gold standard for confirmation of HIV infection. Specimens that are reactive on both EIA screening tests and on Western Blot are considered to be confirmed HIV-positive

**Individual RNA Nucleic Acid Amplification Test (NAAT):** If there is a weak signal on EIA testing and the Western Blot is non-reactive or indeterminate, an individual RNA NAAT is performed. A negative RNA NAAT result can rule out HIV infection.<sup>[7]</sup>

#### TREATMENT PLANNING GUIDELINES

As part of informed consent, the clinician should carefully explain the risks and benefits of oral and maxillofacial surgery to all patients. Because of the multiple systemic effects caused by HIV infection and its progression to AIDS, the clinician should perform a complete medical history prior to each surgical encounter and should consult with the patient's medical provider. All surgical procedures should be performed in a manner that minimizes bleeding and avoids introducing oral pathogens into the deeper fascial planes and oral spaces. HIV infection in itself is not a contraindication to oral and maxillofacial surgery or to elective surgery (e.g., placement of osseointegrated implants and orthognathic surgery). Antibiotics should be used judiciously in patients with HIV disease. Routine antibiotic prophylaxis is contraindicated. If the absolute neutrophil count is  $<500$  cells/mm<sup>3</sup>, perioperative antibiotics should be prescribed to prevent infection following surgical procedures.

#### PROTOCOL FOR DENTAL MANAGEMENT

1. Annual routine dental check up
2. Oral prophylaxis every 6-12 months
3. Annual radiographic assessment
4. Institute an appropriate treatment schedule based on patient's requirements
  - Identify, diagnose & manage fungal, bacterial, viral and other oral lesions
  - Manage xerostomia

- Cellulitis and osteomyelitis can be treated with penicillin V 2 gm per day for 5-10 days + metronidazole 400mg at 8 h intervals.
- Complex periodontal surgeries can be postponed in individuals with CD4 count  $<200$ .<sup>[8]</sup>

#### INFECTION CONTROL PRACTICE IN DENTISTRY

There are two levels of infection control precautions:

1. Standard precautions which are applied to all patients
  2. Additional precautions
- The principles of standard precautions include:
- a) Handwashing
  - b) Protective barriers i.e. the use, of personal protective clothing, e.g. gloves, surgical masks, eye protection.
  - c) Management of healthcare waste
  - d) Correct handling and disposal of needles and sharps
  - e) Effective cleaning, decontamination and sterilisation of equipment, instruments and environment (including blood spillages).
  - f) Use of appropriate disinfectants at the correct working dilution and for the appropriate disinfection time on clinical contact surfaces, non-sterilisable instruments and equipment.<sup>[9]</sup>

There are four types of transmission based precautions:

- a) **Airborne precautions:** e.g. for active TB, influenza and varicella. This may involve the use of appropriate respiratory masks by immunized HCW preferably in negative pressure rooms.
- b) **Droplet precautions:** e.g. for meningococcal disease or whooping cough. This involves the use of respiratory masks and eye protection by HCW.
- c) **Contact precautions:** e.g. for Impetigo, Shingles or MRSA. This involves the use of gloves and plastic aprons by HCW's when performing clinical procedures.
- d) **Sterilisation precautions:** e.g. for transmissible spongiform encephalopathies. This involves incineration, even of non-disposable instruments, following treatment of a patient known to have a transmissible spongiform encephalopathy, such as vCJD.

**PROTECTION OF STAFF****IMMUNISATION**

Vaccination against hepatitis B virus (HBV) is strongly recommended for all clinical dental personnel including dental nurses, chairside assistants, dental hygienists and students.

**HAND PROTECTION**

Handwashing is the primary disease prevention procedure for HCW's. Hands must be washed (and dried) thoroughly with a proprietary disinfectant liquid soap (designated sink) and dried prior to donning and after removing gloves. Any cuts or abrasions to the hands or wrists should be covered with adhesive waterproof dressing.

**EYE PROTECTION**

Operators and close support dental nurse should protect their eyes against foreign bodies, splatter and aerosols which may arise during operative dentistry, especially during scaling (manual and ultrasonic), the use of rotary instruments, use of the air/water syringe, adjusting and cutting of orthodontic wires and the cleaning of instruments and equipment.

**FACE MASKS**

A well-fitting surgical facemask should be worn by HCW, particularly when using an ultrasonic scaler or high speed rotating instruments, or when undertaking surgical procedures. The theatre or dome type facemask is preferable to the paper type which rapidly become permeable and inefficient.

**PROTECTIVE CLOTHING**

Protective clothing which covers areas likely to be contaminated should be worn (chest, forearms, lap). The material should be able to withstand the relatively high temperatures required for disinfection.

**PLASTIC APRONS/FLUID REPELLENT GOWN**

For contact with infected patients, excretions, contaminated equipment or materials. Isolation gowns are used as specified by Standard and Transmission-Based Precautions, to protect the HCW's arms and exposed body areas and prevent contamination of clothing with blood, body fluids, and other potentially infectious material.<sup>[10]</sup>

**CONCLUSION**

**“An ounce of prevention is better than a pound of cure”**

Keeping this in mind an oral surgeon prior to carrying out any procedure must ask the patient to undergo the required investigatory procedures and if needed physician's concern so as to manage the patient in best possible way.

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