AIDS AND INFECTION CONTROL IN DENTISTRY

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Many of us recognise, the challenges of infection control, hazards communication and infectious waste disposal have created a high level of confusion, some of which continues to plague practitioners and staff persons as they perform their treatment duties.

It was New England Journal of Medicine in December 1981 to first report about this dreaded disease, viz. AIDS. Since then by a decade in 1993, 3,40,000 in USA and about 10-20 million people throughout the world were recorded affected by AIDS.

We have seen many epidemics before this namely: bubonic plague, smallpox, typhoid, cholera, dysentry, syphilis, gonorrhoea, influenza, etc. Each time we have seen its serious effect on the nation, its policies and structures of society.

Some of the good and bad aspects can be grouped as under respectively:

Good	Bad
Decrease in no. of quacks	Drastic drop in population
Reduction in blind beliefs	Reduction in manpower
Increase in public health measures	Increase in price index
Setting of health centres	Disturbance in man power: labour
Slum clearance	
Improved measures of sanitation	
Stringent F&D controls	
Introduction of sex education	

Ironically, "those most at risk tend to be least afraid and those least at risk are most afraid".

Urbanisation has led to a demographic shift and which in turn has created the following living conditions:

1. Increase in no. of single men dwelling.
2. Crowding cities, increasing competition.
3. Poor economic conditions of living.
4. Increase unemployment and frustration.

All these above mentioned factors lead to stress, strain and vices like drug abuse, homosexuality, visiting brothels, etc.

AIDS is not a disease acquired from outer space, but the animal population does show origin of lentivirus HIV-2. A good and a sure way to curb AIDS is to advise abstinence from sex or have safe sex and stoppage of injectible drug use for the high risk group.

Another way is to prevent its spread by use of correct methods of infection control, hazardous communication and infectious waste disposal.

We have today many bodies working towards this goal, such as,

1. Centres for Disease Control and Prevention (CDC).
2. Occupational Safety and Health Administration.

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3. Office Sterilisation and Asepsis Procedures (OSAP).

4. Environmental Protection Agency (EPA).

Till date Hepatitis B and Tuberculosis are more infectious and prevalent. AIDS can spread by way of the following means of transmission:

DOCUMENTED: Sexual transmission, exposure to blood or blood products, vertical transmission from M other to child.

UNDOCUMENTED: Aerosols, Dental rotary instruments, Tears, Urine, Sweat, Hepatitis B vaccine, Insect bites, Casual contact.

It is essential to review infection control to prevent, minimise and control disease process in the oral cavity. According to one estimate there are more than 400 diseases affecting the oral cavity. A large number of these are due to accumulation of bacterial aggregates on the teeth, e.g., plague. Although over 300 species of bacteria are currently recognised in the oral cavity, only 5% of these are considered to be strongly associated with chronic inflammatory periodontal diseases.

While the quest for a disease free oral cavity goes on, with the recent onset of life threatening diseases like AIDS and our old foe, Hepatitis, Herpes and TB, the fight against infection control is gaining titanic momentum. Here the dictum appears to be *"When you cannot solve the problem, manage it"*.

It is estimated that one drop of saliva contains upto 6 lakhs bacteria. With this background knowledge, one must understand, the explicit demand for infection control. It is necessary, for every dental practitioner to develop modes of infection control that are acceptable, practically feasible and simple to follow.

These four goals form the golden rule of infection control:

1. Measures to avoid patient to patient cross contamination.

2. Use of appropraite universal precautions to avoid operator to patient body fluid transfer.

3. Maintenance of general office cleanliness and sanitation with professional standards of care in dentistry.

4. To ensure each patient that there will be no cutting corners on safety or cost factors.

Guideline for infection control practices in dentistry

A) Care should be taken that the operatory should not be open to general appointment seekers, patient escorts and children. A reception, where they can be seated and removal of footwear will be an added advantage.

B) A precise medical history that entails questions regarding those of any exposure, diagnostic tests or treatment of a disease is deceptive. As the old proverb goes "prevention is better than cure". We can atleast get ourselves vaccinated against the known foes like hepatitis.

C) Attire and Barrier techniques.

1) Gowns serve as a barrier to the splatter and aerosols. Clinical aprons must be as far as possible restricted to the operatory only. It must be changed every day and washed with a fabric bleach.

2) Hand washing: Use of soap solutions with a high percentage of total fatty matter should be used to avoid damage to the keratin of our palms as we wash a number of times. (Neutral pH). Care should be taken that dirt from the nail bed region and cuticle of the nail must be removed and properly trimmed as it has been proved, to harbor microbes for

five days. Use of antimicrobial solutions especially designed for the same is ideal.

3) Gloves: Do not don the gloves unless ready for work. Use of soap over gloved hands will lead to leaching of fatty acids to the surface of the glove and make it sticky and difficult for work. Petroleum based lotions used for hand's protection degrade the latex material. Drying of hands and powdering before gloving is necessary as moisture can lead to irritation and be misdiagnosed as allergy to latex.

4) Mask should be of good fit, with a nose rest to prevent misting of glasses and changed after every session and not left dangling around the neck. Mask should be able to filter 3.0 µm to 5.0 µm particles.

5) Protective eye wear must be worn by the operator as the eyes have limited vascularity and can be easily infected. It is advisable to ask the patients to keep their eye wear on during being treated for protection of their eyes.

6) Caps must follow the hair line and long pleats tugged inside the cap.

D) Handling of instruments:

The rule is "if you can sterilize, sterilize it". Plan your procedures systematically so that all the requisite for work is at hands' reach. Avoid leaving the patient alone, as it encourages the patient to pick our instruments, i.e. Mouth mirror to examine. Possibly arrange the instruments at the side trolley.

Disposal of sharp instruments should be in a separate container to avoid needle stick injuries as 0.1 ml of blood can transmit the microbes through the parental route.

All invasive procedures should be performed by autoclaved instruments and stored in proper receptacle. Air cooling of instruments and not by dipping into an antiseptic solution or blowing of air through mouth should be done as it will recontaminate them.

Dental chair should be seamless for proper cleaning. A spray could be used for removal of the smear layer.

E) Use of high speed evacuation tips will be of great help to minimise infection by way of aerosolisation. A pre-rinse also can reduce microbial splatter.

F) Disinfectants used should have a high level of substantivity to be effective.

G) Biopsy specimens should be transported in sturdy containers or leak proof bags.

H) Disposing of bio-hazardous materials or waste fluids should be connected to sanitary sewer system and solids send for incineration. Used instruments should be kept soaked in solution containing a disinfectant unless it could be immediately cleared of from the bio-matter.

I) Dental auxiliaries: There should be separate group of staff cleaning and sanitary work and qualified personnel's for sterlilisation work. The personnel should be properly explained the scientific bases behind the infection control procedures to remove fear and prejudice from their mind.

J) Educational talk, pamphlets and counselling of the patients must be done to clear the doubts in the patient's mind. We must make the patient aware that you, our patients are important to us, and we your dentists want you to know that we care for your dental and general health.

If we are looking for quality in our work "Quality is never an accident, it is always the result of intelligent effort".