

AIDS : AN OVERVIEW

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Introduction

Today in our country, all age groups put together have an incidence of 5.7million HIV cases. Several factors put India in danger of experiencing a rapid spread, if effective prevention and control measures are not scaled up and expanded throughout the country. Medical professionals especially dentists are at high risk of being infected by HIV mostly because large number of cases still remain undocumented firstly because of social stigma attached to it and secondly the people being unaware about the cause, nature and spread of disease . We will discuss about the etiology, mode of transmission, management protocol and universal precautions to be followed for AIDS.

Etiology

Human immunodeficiency virus (HIV) a retrovirus belonging to family of lentivirus causes acquired immunodeficiency syndrome (AIDS).

Mode of Transmission

Basically there are 3 modes of transmission of HIV.

Through blood and body fluids-

It can occur through

- Contaminated blood transfusion
- Struck or pricked with a used/ infected/ dirty needle.
- Splashed with blood/ body fluids of infected person to an open wound or skin.
- Punctured with a contaminated instrument of infected person.
- Splashed by blood/ body fluids of infected person in the eye or nose or mouth.

Through mother to child transmission-

Infection to child occurs during child birth or breast feeding

Through unsafe sex

Clinical Signs and Symptoms

Fever, night sweats, myalgia, anorexia, weight loss which increases with absence of therapy, lymphadeno-pathy, unexplained signs and symptoms involving any organ system.

Diagnostic Tests

Test for known source

EIA test consider rapid test if EIA testing cannot be completed within 24-48hours

Confirmation of reactive result not necessary for PEP management

Direct virus assays e.g. PCR p24 antigen not recommended

Test for unknown/ unknown sources

- Consider information about exposure
- Where and under what circumstances- prevalence of HBV, HCV or HIV in population group.
- Testing of needle and other sharp instruments not recommended.

- Unknown reliability and interpretation of findings.
- Hazard of handling sharp instruments.

Evaluate exposed person

- Evaluate exposure for the potential to transmit HBV, HCV, and HIV
- Based on type of body substance involved and route and severity of the exposure

Management Protocol

Elements of Post exposure Management

- Wound Management
- Exposure Reporting
- Assessment Of Infection Risk
- Type and severity of exposure
- Blood borne infection status of source person
- Appropriate Treatment (PEP)
- Follow-Up, And Counseling

Wound Care

- Immediately wash with soap and water and rinse thoroughly to remove all potentially infectious particles.
- Pricked finger or the punctured part should not be put into mouth
- No evidence of benefit for application of Antiseptics or Disinfectants
- Even no evidence of letting the wound bleed or squeezing out blood.
- If eye is splashed/ involved: Flush immediately with water, then irrigate with normal saline for 30 minutes.
- Even splashes to the nose, mouth or skin should be flushed with water
- Avoid use of bleach and other agents caustic to skin
"HIV testing should be done immediately, 6 weeks, 6 months and 12 months"

Exposure Report

- Date and time of exposure
- Procedure details...what, where, how, with what device
- Exposure details...route, body substance involved, volume/ duration of contact (determination of exposure code EC)
- Information about source person and exposed person
- Exposure management details

Assessment of Infection Risk

Type of Exposure

- Percutaneous
- Mucous membrane
- Non-intact skin
- Bites resulting in blood exposure

Source Person

- Presence of HBsAg

- Presence of HCV antibody
- Presence of HIV antibody
- If source unknown, assess epidemiologic and clinical evidence

Body Substance

- Blood
- Bloody fluid
- Potentially infectious fluid or tissue

Evaluation of Exposure Source

- Test for Known Sources
- EIA
- Consider Rapid Test if EIA testing cannot be completed within 24-48 hours
- Confirmation of reactive result not necessary for PEP management
- Direct virus assays (e.g., PCR, p24 antigen) not recommended
- Unknown or Untestable Source
- Consider information about exposure
- Where and under what circumstances
- Prevalence of HBV, HCV, or HIV in the population group
- Testing of needles and other sharp instruments not recommended
- Unknown reliability and interpretation of findings
- Hazard of handling sharp instrument

Evaluate Exposed Person

Evaluate Exposure for the Potential to Transmit Hbv, Hcv, and Hiv based on the Type of Body Substance Involved & The Route And Severity of The Exposure.

Post Exposure Prophylaxis

HIV: PEP recommended

When PEP is recommended initiate it as soon as possible, preferably within 24 hours of exposure. (No benefit later than 24-36h)

Rationale of Treatment

Rationale for HIV Pep (Haart)

HIV systemic infection doesn't occur immediately.

The HIV virus in the recently exposed or infected cells does not migrate to regional Lymph nodes except after a brief window of 24-48 hours.

Virus is detectable in the Peripheral Blood within 5 days

Immediate Post Exposure Antiretroviral Intervention Might Modify Or Prevent The Viral Replication

HAART: Highly Active Antiretroviral Therapy

HAART Recommendations for HIV PEP (most commonly followed)

Basic Regimen (4weeks)

Zidovudine (ZDV/AZT)	200mg
Lamivudine (3TC)	150mg
Combivir	(AZT 300mg +3 TC (150 mg) 1 Tab daily

Expanded Regimen + 1 of the tablets

Indinavir (IDV)	800mg q 8h
Nifinavir (NFV)	750mg
Eavir (EFV)	600mg daily
Abacavir (ABC)	300mg bid

Follow up and counseling perform Hiv antibody testing [EIA standard test] for at least 6 months post exposure [at baseline ,6 weeks,3 months,6 months] to monitor seroconversion.

Perform HIV antibody testing if any illness compatible with an acute retroviral syndrome occurs as fever ,myalgia,fatigue,malaise or lymphadenopathy [acute viral infection] Follow Up Testing

HCP should be monitored for drug toxicity by testing at baseline and again 2 weeks after starting PEP [a complete blood count and renal and hepatic function tests blood sugar level] Perform HIV antibody testing /EIA standard test/ for at Diagnosis

Elisa Test

It is universally accepted screening test of HIV and if it comes positive then patient is asked to go for a Western blot test as a confirmatory test .

Rapid Test

With this test it is possible to obtain results within 20 minutes it is a serological test using similar technology and having equal reliability as ELISA test.

Oral Fluid Test

It is an oral fluid based serological test .It is a initial screening test ,results have to be confirmed by Western blot test .

CD4 Lymphocyte count test

Hiv directly infects and destroys a key component of the body's immune system

,the CD4 T-lymphocyte cell .These cells are critical as they coordinate the body's defence .

Universal Precautions

First recommended in 1987 by the centre of disease control in America.

Use of PPE [personal protective equipment] when there is potential for occupational exposure to BBP's- gloves [double glove technique], mask, protective eye wear, chin length face shield, protective clothing.

Hand washing with soap [antimicrobial/alcohol based].

Cover any existing cuts or lesions with a waterproof dressing.

Care must be taken when handling potentially infected sharp instruments/needles.

- Disinfection of surfaces.
- Disposal of contaminated material.

Conclusion

We should consider all patients as HIV infected, treat all blood/ saliva/ body fluids/tissues as infected, universal precautions should be strictly followed. Occupational exposure management is complex but not impossible; one should not forget prevention is better than cure.

References

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