

Precautions for HIV and hepatitis

Viral hepatitis

- Commonest liver disease in the world.
- May cause acute liver failure or chronic active hepatitis.

Hepatitis A

Formerly known as infectious hepatitis. This is the most common form of jaundice in children and young adults.

- Spread is by the faecal-oral route. The incubation period is 1 month.
- The antibody to the virus is anti-HAV.
- There is no vaccine and health care workers do not have to be tested.

Hepatitis B

Double-shelled DNA virus: 10% adults fail to clear the virus after infection. Up to 5% people worldwide are carriers.

- Infection is largely blood-borne and is transmitted by blood transfusion, inoculation, sharing syringes (drug addicts), sexual intercourse during menstruation (with an infected partner), and anal intercourse.
- Transmission from a contaminated sharps injury is 30%.
- Antigens appear in the serum: HBsAg the surface antigen; HBcAg, the hepatitis core antigen; HBeAg the antigen; the Dane particle; double-stranded DNA; and DNA polymerase activity.
- Antibodies formed against these antigens (anti-HBs, anti-HBe) can be detected in the peripheral blood.
 - HBsAg +ve: failure to clear infection, residual infectivity.
 - HBsAb +ve: protection marker from immunization or infection.
 - HBeAg +ve: close correlation of infectivity.
- Hospital staff is routinely offered vaccination for hepatitis B.
- **Treatment.** Any healthcare worker who remains HBeAg +ve may undergo antiviral therapy under supervision by a hepatologist including:
 - immunomodulation with interferon;
 - Viral suppression with nucleoside analogues.

Hepatitis C

RNA virus that causes cirrhosis of the liver and primary liver cancer. There is no vaccination. Detected in 1 in 150 screened blood donations. 0.4% of the UK population are chronically infected. Transmission from a contaminated sharps injury is 2-3%. Surgeons have to be tested for hepatitis C, and may not carry out exposure-prone procedures if hepatitis C +ve.

Human immunodeficiency virus (HIV)

Double-stranded RNA retrovirus transmitted by passage of infected body fluids from one person to another by several methods: anal and vaginal sexual intercourse; peri-partum; sharps; and infected blood products.

HIV infection results in widespread immunological dysfunction, manifested by a fall in CD4 +ve lymphocytes, and monocytes,.

- There is usually a 3 month asymptomatic but infective viraemia.
- During this period ELISA tests for HIV antibodies are negative.
- At seroconversion an acute illness can occur.
- This is followed by generalized lymphadenopathy.
- Acquired immunodeficiency syndrome (AIDS) develops in 5-10y.
- Median survival with untreated AIDS is 2y; treated is > 15y.

High-risk procedures

The UK General Medical Council has made it clear that surgeons are obliged, if required, to operate on patients with AIDS or HIV infection. Always use universal precautions. **High-risk procedures include:**

- Any invasive procedure in HIV +ve patients;
- Invasive procedures in at-risk populations (see above);
- Biopsies for the diagnosis of opportunistic infection or suspected HIV;
- Procedures to deal with malignancies, e.g. Kaposi's sarcoma, B-cell and non-Hodgkin's lymphoma, squamous oral carcinoma.

Precautions

- The HIV risk from an HIV contaminated hollow needle is 0.3%.
- The risk from splashes on broken skin or mucous membranes is 0.1%.

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Universal Precautions

1. All health care workers should use appropriate barrier precautions routinely to prevent skin and mucous membrane exposure when contact with blood or other body fluids of any patient is anticipated. Gloves should be worn for touching blood and body fluids, mucous membranes, or non-intact skin of all patients; for handling items or surfaces soiled with blood or body fluids; and for performing venipuncture and other vascular-access procedures.

Gloves should be changed after contact with each patient. During procedures that are likely to generate aerosolized droplets of blood or other body fluids, masks and protective eyewear or face shields should be worn to prevent exposure of mucous membranes of the mouth, nose, and eyes. Gowns or aprons should be worn during procedures that are likely to generate splashes of blood or other body fluids.

2. Hands and other skin surfaces should be washed immediately and thoroughly if contaminated with blood or other body fluids. Hands should be washed immediately after gloves are removed.

3. All health care workers should take precautions to prevent injuries caused by needles, scalpels, and other sharp instruments or devices during procedures; when cleaning used instruments; during disposal of used needles; and when handling sharp instruments after procedures. To prevent needle-stick injuries, needles should not be recapped, purposely bent or broken by hand, removed from disposable syringes, or otherwise manipulated

by hand. After they are used, disposable syringes and needles, scalpel blades, and other sharp items should be placed in puncture-resistant containers for disposal; the puncture-resistant containers should be located as close as practical to the area of use. Large-bore reusable needles should be placed in a puncture-resistant container for transport to the reprocessing area.

4. Although saliva has not been implicated in HIV transmission, to minimize the need for emergency mouth-to-mouth resuscitation, mouthpieces, resuscitation bags, or other ventilation devices should be available for use in areas in which the need for resuscitation is predictable.

5. Health care workers who have exudative lesions or weeping dermatitis should refrain إمتنع from all direct patient care and from handling patient care equipment until the condition resolves.

6. Pregnant health care workers are not known to be at greater risk for contracting HIV infection than health care workers who are not pregnant; however, if a health care worker acquires HIV infection during pregnancy, the infant is at risk for infection resulting from perinatal transmission. Because of this risk, pregnant health care workers should be especially familiar with and strictly adhere to precautions to minimize the risk of HIV transmission.

Special precautions

- 1) All personnel involved in patient care should be aware of the risk
- 2) Any patient considered as risk should be indicated as belonging to high risk category on the operating list
- 3) Arrangement should be made for contaminated fluid ,dressing,etc. to be handled and disposed of correctly.
- 4) Appropriate theater technique should be adopted:
 - Minimize theater staff;only essential personnel.
 - Remove all but essential equipments.
 - Double gloving and use of indicator glove system.
 - Visors to prevent splashing in eyes.
 - Blunt suture needles.
 - Stapling device rather than needles when possible.
 - Pass instruments in kidney dish.
 - All disposable equipments should be removed in specifically marked containers.
 - The theater should be thoroughly cleaned with dilute bleach المادة القاصرة solutions at the end of the procedure.
 - Recovery staff must also be aware of the risk.
 - No touch technique

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