

Management of Exposure Inoculation Injuries

Dr. Ngangom Lilavati

Senior Resident, Regional Institute of Medical Sciences, Imphal, India

All precautions should be undertaken to avoid exposure inoculation injury and occupational blood exposures to avoid transmission of HIV, Hepatitis B and Hepatitis C particularly in health care settings. Nevertheless, Hepatitis B immunisation and appropriate post exposure management are important strategies to prevent infection following blood borne exposure.

The guidelines of post exposure management describe the risks of infection, the preventive measures and the procedures to follow occupational exposure. National guidelines are available which is recommended by the National AIDS Control Organisation and these guidelines are inspired by the guidelines formulated by the US Public Health Services.

Professionals with frequent blood exposures or interns, medical students, nursing staffs and students, physicians, surgeons, emergency care providers, dentists, labour and delivery room personnels, laboratory technicians, cleaning staffs and clinical waste handlers.

The potentially infectious body fluids are considered at risk are blood, semen, vaginal secretions, csf, synovial, pleural, peritoneal, pericardial fluid, amniotic fluid, other body fluids contaminated with visible fluid. The average risk of acquiring HIV infection after different types of occupational exposure is low compared to risk of infection with HBV or HCV. In terms of occupational exposure the important routes are needle stick exposure (0.3% risk for HIV, 9-30% risk for HBV, 1-10% for HCV) and mucous membrane exposure (0.09% for HIV). Certain work practices increase the risk of needle stick injuries such as (1) Recapping needles (most important) (2) Transferring body fluids between containers (3) Failing to dispose the used needle properly in puncture resistant sharp containers (4) poor health care waste management system. All categories of health care personnels within the hospital should be informed about how to protect themselves against HIV and other pathogens transmitted blood or body fluids. The information must be reinforced regularly.

All staffs should share collective responsibility in this regard. The concerned authorities of the hospital or medical institute must constitute a hospital infection control committee which will regularly monitor hospital infection control including control including universal precaution and post exposure prophylaxis implementation and quality control. The Medical Superintendent must ensure that the hospital has a written protocol and SOP (standard operative procedure) to handle occupational exposure and these are disseminate at all relevant personnels /departments. All hospital staffs must know whom to report for PEP in case of occupational exposure. The various components of Universal precautions should be strictly practised by all

health care workers to prevent exposure to blood borne pathogens. The various steps for managing occupational exposure are (1) To manage exposure site. (2) Establish eligibility for PEP (3) counselling for PEP (4) Laboratory evaluation (5) Follow up and monitoring adherence. PEP must be started as soon as possible preferably within 2 hours. Expert opinions may be obtained in special situations. Whenever PZP is indicated and source is ART naive or unknown, recommended regimen is Tenofovir 300mg and Lamivudine 300 mg and Efavirenz 600 mg daily for 28 days. The first dose of PEP regular should be administered as soon as possible preferably within 2 hours of exposure and subsequent dose should be given at bed time with clear instruction to take 2-3 hours after and to avoid fatty food in dinner. There is approved protocol for PEP prescribed by NACO which considers both HIV exposure and HIV source code.

All health care workers should be vaccinated against Hep B virus. The vaccination for Hepatitis B consist of 3 doses i.e initial, 1 month, 6 months. There is no vaccine or prophylaxis against Hepatitis C. If the health care workers is exposed to HBV contaminated sharps, the HCW should be given HBIG. HBIG (0.06 ml/kg) IM as soon as possible and within 7 days after exposure. (With dose of Hep B vaccine given at different body sites: if HBV is not given, 2nd dose of HBIG should be given after 1 month.)

In conclusion the following points should be kept in mind .1) To establish a blood borne pathogen management system .2) To implement management policies (e.g. Training, Hepatitis B vaccination, exposure reporting, PEP access etc).3) To establish laboratory capacity for blood borne virus testing.4) To select and use appropriate PEP regimen.5) To provide access to counselling for exposed personnel.6) Monitor adverse events and seroconversion.7) To monitor exposure management programmes.

Management of exposure inoculation injury is complex. Therefore prevention is the best strategy to combat this problem. All HCWs should be vaccinated against Hepatitis B vaccine. All HCW should avoid occupational blood exposure.