ACECC
Anaesthesia Continuing Education Coordinating Committee

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WELFARE OF ANAESTHETISTS SPECIAL INTEREST GROUP

INFECTIOUS DISEASES

INTRODUCTION

Exposure prone procedures (EPPs) are procedures involving contact between health care workers and patients. These contacts may occur (eg) via sharp surgical instruments, (such as needlestick injuries), sharp tissues in body cavities, instruments used in anaesthesia, or via droplet contamination of mucosae.

Such procedures constitute risks to both the patient and the proceduralist, ie the risk of transmission of blood-borne viruses from an infected health care worker to a patient, or from an infected patient to a health care worker.

Routes of transmission include hollow bore needle-stick injuries (which carry a higher risk than solid needles), droplet or mucosal contacts during intubation, airway or other procedures, or contamination via instruments such as endotracheal tubes, laryngoscopes, and suction catheters

BLOOD BORNE VIRUSES: HIV, HBV, HCV

Source	**Risks to health care workers after occupational exposure**
HIV	0.3%
HBV – HbsAG (+) only HBeAg	1-6% 22-31%
HCV +ve If virus PCR -ve	10% 1.9%

Hepatitis B, the most infectious of the blood borne disease, has a vaccination available. HBV vaccinations should be given immediately to those with significant exposures to the virus who have not been vaccinated. However, some individuals will be non-responders to HBV vaccines, and they are not protected against HBV. Anti HBs titres are measured to differentiate responders from non-responders. Those who are initial responders are not generally offered a booster, even if their titres drop, unless they are immuno-compromised.

There is no immunization or post exposure prophylaxis proven to be effective against **HCV** at present. However treatment of **acute hepatitis C** with interferon alfa-2b prevents chronic infection in most cases. Previous exposure dose not result in immunity, and re-infection can still occur if there is repeated exposure.

The risk of acquiring **HIV** after an occupational exposure to HIV-infected blood is low.

After significant exposures, post-exposure prophylaxis (PEP) should be commenced within 1-2 hours, but it is still effective until 72 hours post exposure. PEP is difficult to tolerate due to side effects. HIV sero-conversion is generally documented within 4 weeks from exposure.

It may be very stressful to be in a situation in which you may have acquired an infection with a blood-borne virus. Remember to seek help from your mentors and other support persons if necessary.

IMMEDIATE POST-EXPOSURE MANAGEMENT

(Hospital processes will vary)

- Wash the exposure site, rinse eyes and mouth with water.
- Risk assessment, including significance of the injury, the status of the source, and the health care workers affected.
- Fill in an incident report if required.
- Obtain patient consent for baseline tests to check infectious disease status.
- Consult infectious disease specialist, a service which should be provided by hospitals to all health care workers.
- Post-exposure prophylaxis for high risk exposures depends on the extent of the injury, the item that caused the injury, the body fluids, and volume involved.
- Organise follow up for further testing, treatment, expert consultation, counselling, and compensation.
- Confidentiality must be maintained at all times.

AIRBORNE DISEASES

Neisseria meningitides, measles, Mycobacterium tuberculosis, SARS

- These airborne diseases are spread by aerosols; small airborne particles as small as 1-5 microns. The pathogens are dispersed by air currents, and are inhaled by susceptible individuals in an area with shared air circulation. Respiratory protection can be provided by tightly fitted N-95 mask with a particulate filter to trap tiny aerosolized particles. Influenza and most respiratory viruses are spread by droplets.
- Droplets are expelled from an infectious person and fall within a radius of approximately 1 metre. Standard masks and contact precautions within a 2 metre radius of the patient are sufficient.
- Diseases with droplet transmission include pneumococcal pneumonia, streptococcal pharyngitis, pertussis, and parvovirus B19.
- BCG vaccine is available, but the protective efficacy is only around 50%.
- Flu vaccines have been reported to be 70-90% efficacious for preventing illness in healthy adult volunteers.

RECOMMENDATIONS

- It is recommended that anaesthetists participate in a **vaccination program** which includes Hepatitis B, Influenza, Pertussis, Measles, Mumps, Rubella, Varicella, and Hepatitis A. BCG should be included for anaesthetists working in high risk TB areas. The onus is on the individual to undertake these precautions.

- Some hospitals do not check the immunization status of their health care workers. In New Zealand, hospitals may request evidence of infectious status and immunizations.

- Anaesthetists who perform EPPs have a responsibility to know **their infectious status** with regards to blood-borne viruses HIV, HBV and HCV.

- Anaesthetists who perform EPPs should undergo **regular checks** every 1-2 years. Status should also be rechecked after significant exposures.

- Anaesthetists who are HIV antibody positive, HBeAg positive, HBV DNA positive, or HCV PCR positive should inform their employer. They should not perform EPPs. (*This recommendation is controversial because of privacy concerns*).

- **Standard precautions** should be applied whenever patient contact is made. These include safe handling of sharps, cough etiquette, respiratory hygiene, and protective barriers such as gloves, mask, and eye protection.

- Transmission-based precautions for diseases such as TB include minimization of unnecessary contacts between personnel and patients; respiratory protection is provided by a tightly fitted N-95 mask.

- An expert consultation should be sought after significant exposures for risk assessment and up to date prophylaxis treatment should be provided.

- Anaesthetists should check whether their income protection policies cover occupationally acquired infections. Employed anaesthetists should be covered for this eventuality by their employers.

Thanks to Dr Jenny Stevens and Dr Kim Weng for this document.

Further reading

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