

Information Sheet

EXPOSURE TO BLOOD-BORNE PATHOGENS - PREVENTION AND MANAGEMENT

INTRODUCTION

This sheet contains information about the risks of inadvertent exposure to blood-borne pathogens such as HIV and hepatitis viruses B and C, what measures you can take to help prevent these exposures and the steps you should follow if you sustain a needlestick or related injury during the course of your upcoming elective period in an overseas country where infection with blood-borne viruses is more common than in Australia. Please feel free to discuss any specific questions or concerns with the doctor at your information session.

RISKS

You will know that the risk of transmission after exposure to blood-borne viruses in the health care setting varies according to factors such as the specific body fluid involved, the particular virus and the nature of the exposure.

Potentially infectious body fluids are blood, CSF, pleural fluid, ascitic fluid, synovial fluid, vaginal fluid, amniotic fluid and semen. Urine, tears, sweat and faeces are not considered to be infectious, unless blood-stained.

For percutaneous injuries (injuries with penetration of intact skin, such as needlesticks) involving exposure to blood or another potentially infectious body fluid from a patient known to be infected with a blood-borne virus, the risks of transmission are: i) hepatitis B – 6-30%; ii) hepatitis C – 1-3%; iii) HIV – 0.3%. The risk is much less after exposures to mucous membranes (such as splashes to the eye) and to non-intact skin.

General factors that increase the likelihood of these exposures include emergency situations involving extensive bleeding, and certain surgical procedures such as gynaecological operations where tips of needles cannot always be kept under direct vision. Poor preparation and undue haste are other contributing factors.

PREVENTION

You can take a number of simple measures to substantially reduce your risk of being exposed to blood-borne viruses.

1. General

- experience – ensure you have received adequate instruction before performing new procedures. **You should not feel obliged to do a particular procedure if you feel uncomfortable about it.**
- preparation – before doing procedures such as venepuncture or IV line insertion, make sure that you have all the equipment you need (swabs, tourniquet, specimen tubes and so on) beforehand, that you have access within arm's length to a needle disposal box, that patient positioning is optimal and that lighting is adequate.
- assistance – do not hesitate to seek assistance from nursing and other staff; this is essential if the patient is uncooperative and might move suddenly during the procedure.

2. Standard Precautions - standard precautions apply in any health care setting regardless of its location. You should already be familiar with the essential elements, which are:

- assumption that any patient may be infected with a blood-borne virus
- hand hygiene before and after patient examination, and after removal of gloves
- use of appropriate barrier precautions – gloves (if hands are likely to be soiled), eye protection and masks (if splashes are anticipated), and gowns (if particularly heavy soiling may occur); because supplies may be limited where you are spending your elective period, you should take a supply of gloves, surgical masks and a pair of goggles with you.

- proper handling and disposal of needles and other sharp instruments – no needle recapping, no handing of uncovered needle from person-to-person, prompt disposal of sharps into puncture-proof container within arm's length at the bedside.

MANAGEMENT OF AN EXPOSURE AND ANTIRETROVIRAL MEDICATIONS

- If possible, it is highly desirable that you identify in advance a doctor at your hospital such as your supervisor to advise you in the event that you inadvertently sustain a percutaneous or mucous membrane exposure to blood or other potentially infectious body fluids.
- Knowledge of the HIV status of the source patient will considerably aid management. The doctor to whom you report the exposure should find out if the patient has already had an HIV test; if not, it will usually be possible to organise for a test to be done, although the availability of testing will obviously depend on local circumstances.
- The US Public Health Service guidelines for post-exposure HIV chemoprophylaxis should be used to decide if antiretroviral prophylaxis is indicated. You will be provided with a flowchart from the guidelines, which assigns risk according to the nature of the exposure itself and factors related to the source patient.
- Depending upon the level of risk, the recommendations are:
 - * no antiretroviral prophylaxis, or
 - * antiretroviral prophylaxis with 2 drugs (tenofovir plus FTC – Truvada)
 - * antiretroviral prophylaxis with 3 drugs (as above, plus lopinavir/ritonavir – Kaletra).
- **Under no circumstances should nevirapine (either as separate drug or as part of a fixed-dose combination) be taken as post-exposure prophylaxis.**
- If you obtain medications in Australia, you will be referred to the Fairfield Travel Health Clinic (Ground floor, Private Medical Centre); there, you will see a specialist who will provide you with:
 - * a prescription for a “starter pack” of antiretroviral drugs – a one-week supply of tenofovir plus FTC and lopinavir/ritonavir
 - * an information sheet about the antiretroviral drugs
 - * a flow chart outlining risk assessment following blood or body fluid exposure and recommendations for antiretroviral post-exposure prophylaxis
 - * an official letter in the event that you are requested to explain (by customs officials, for example) why you have the medications.
- You must pay for the cost of these medications yourself (currently \$340).
- The medications can be stored at room temperature.
- You may choose to obtain a supply of these or similar medications at your elective destination, where they will almost always be cheaper than in Australia – however, you should be aware that i) specific recommended drugs (eg. lopinavir/ritonavir) or formulations (eg. Truvada) may not be available, and ii) counterfeit antiretroviral drugs may be in circulation; if in doubt, it is best to obtain drugs in Australia.
- You should not use medications previously dispensed to another medical student for an earlier elective period.

If you sustain a needlestick or related injury and start antiretroviral prophylaxis, **you should strongly consider returning to Australia within one week.** This will allow further assessment of your situation and counselling in person (either in private, or in the Infectious Diseases clinic), as well as ongoing supplies of antiretroviral medications and monitoring of the therapy.

We hope that you have an enjoyable and rewarding time overseas. If you need further assistance or information while on your elective, please do not hesitate to contact myself, Dr Alan Street, by e-mail at alan.street@mh.org.au or via the RMH switchboard, 613 9342 7000 and page. If I am not available, ask to speak to the VIDS physician on call.