

## Pearls in Dermatology

# How I manage health care workers infected with human immunodeficiency virus and those with needle stick injury

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When managing health care workers infected with human immunodeficiency virus (HIV), one must consider their job nature, their standards of infection control and their working environment. They should be advised to refrain from performing exposure prone procedures. While HIV infection is not notifiable in Hong Kong, physicians are encouraged to report to the Special Preventive Programme (SPP) of Department of Health. When difficulty arises in balancing public interests and the wish of the concerned worker, advice can be sorted from an expert panel coordinated by SPP. Accidental needle stick injury exposes health care workers to the risk of contracting blood borne infections. Management is determined by the nature of the injury and the risk of the source. The workers should be screened for blood borne infections and concerned immune status. Hepatitis B immunoglobulin, hepatitis B vaccination, anti-retroviral agents and specialist referral are offered if appropriate.

**Keywords:** HIV infection, health care workers, needle stick injury

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## Introduction

A commonly asked question in dermatology and venereology specialty examination is the management of a health care worker (HCW) infected with human immunodeficiency virus (HIV). Unfortunately, few candidates know the principles in handling these clients. The

important medical principles and local practices for handling these cases will be described. Another important HIV-related issue is the management of HCW who sustained needle stick injury (NSI) in health care settings. This will also be described.

## Management of HIV infected health care workers

Important considerations include firstly whether a system of infection control practice is implemented in the working environment of the HCW, secondly, whether the HCW has adequate training in infection control and thirdly, whether the concerned HCW need to

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perform 'exposure prone procedures' (EPP). EPP are defined by the UK Health Department as those procedures with an inherent risk that injury to the worker may result in exposure of the patient's open tissues to the blood of the worker. These procedures include those where the worker's gloved hands may be in contact with sharp instruments, needle-tips or sharp tissues (spicules of bone and teeth) inside a patient's open body cavity, wound or confined anatomical space where the hands or finger tips may not be visible at all times.

The principles can be demonstrated by the following case scenarios. An HIV infected dermatologist can probably be advised to continue his/her profession as he/she is unlikely to be involved in procedures as stated in the above provided he/she observes all the provisions in infection control. On the other hand an HIV infected dental surgeon should be advised to quit his/her involvement in all procedures with the potential leading to handling of fracture teeth as it is envisaged that the oral cavity is relatively not as easily accessible and visible in many circumstances. However, he/she may still continue his/her practice not doing these procedures.

As HIV is not notifiable in Hong Kong, one is not required to report the case to the Department of Health (DH). Nonetheless, one is encouraged to report to the Special Preventive Programme (SPP) of DH via a voluntary reporting system. It is an anonymous reporting system and the name and identity number of the patient are not required. It is important to discuss with and counsel your client who has the duty to report to his/her governing body him/herself. The risk of transmission to the clients of the HIV infected HCW should be discussed. The exact job nature of the concerned HCW and the infrastructure for infection control in his/her working environment should be explored. If he/she poses any risk to his/her client despite all the effort to change his/her

practice and convince him/her to report to his/her governing body himself/herself, he/she should be informed that his/her doctor in charge will have a duty to, and will report to the governing Councils (i.e. breaching the confidentiality of your patient) in order to safeguard the interest of the public.

A panel of experts coordinated by the SPP may be approached for advice in handling these cases. The panel is chaired by a non-medical community leader and two other doctors with experience in HIV medicine. The Consultant of SPP is the secretary of this expert panel.

## **Needle stick injury**

When performing venepuncture, accidental NSI exposes the HCW to the risk of contracting blood borne infections such as hepatitis B virus (HBV), hepatitis C virus (HCV) and HIV. Expressing excessive blood from the wound and cleansing with soap and water to wash away potential remnant contaminants are of the utmost importance. The HCW should attend the respective hospital's accident and emergency department (AED). Blood will be taken and saved for testing of hepatitis B surface antigen (HBsAg), anti-HBV, anti-HCV and HIV antibodies (Ab). HBsAg, anti-HBV will be tested immediately by the laboratory. Depending on HBV immune and vaccination status, the AED doctor may give a dose of hepatitis B immunoglobulin (HBIG) if the HCW has never been vaccinated and antibody status to HBV is unknown. This is done before blood results are available if the exposure or injury is significant. Further advice on prophylaxis against HBV will depend on the status of HBV immunity.

If both HBsAg and anti-HBV Ab are negative, a second dose of HBIG is advisable or the HCW may be advised to receive HBV vaccination as soon as possible. (HBV vaccination can also be given at the same time of the first dose of HBIG).

No proven effective prophylaxis against HCV is currently available. If the risk of HIV transmission as a result of the injury is significant, anti-retroviral agents should be prescribed as soon as possible.

Serum sample will be saved for testing HIV and HCV antibody. This sample will be back-tested if the second blood sample taken 3-6 months later is positive. Figure 1 summarises the essential steps in handling needle stick injury.

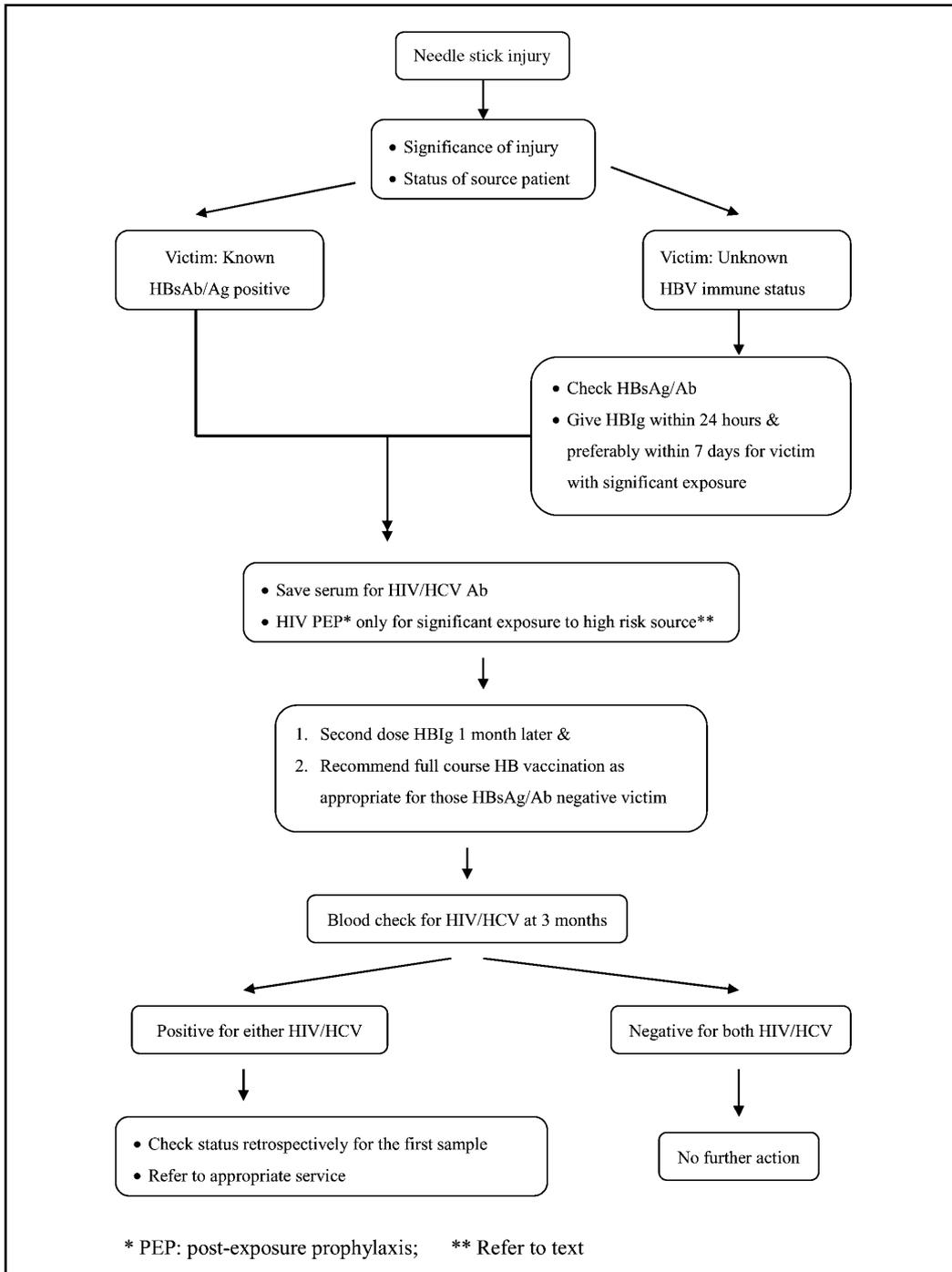


Figure 1. Management of Victim of Needle Stick Injury (NSI).

*Principles in determining prescription of oral antiretroviral prophylaxis*

Two important factors are considered: 1) the risk of having true HIV infection for the source patient; 2) the nature of the injury (exposure). In Hong Kong the HIV prevalence rate is very low, the average risk of having true HIV infection in the source patient will be low and therefore anti-retroviral prophylaxis is not the standard recommendation unless there is evidence to prove otherwise. The risk of a penetrative injury with visible blood (rather than superficial scratching without visible blood) is regarded as significant. The risk of injury by a hollow needle with visible blood contamination (from source patient) is also regarded as having a higher risk of transmission.

A two- or three-drug regimen will be started according to the risk of transmission. The course will be about one month. However, data from the West revealed that a substantial portion of

HCWs could not complete the full course of treatment because of adverse reactions.

For enquiries and counselling, one may call the AIDS Hotline 2780 2211 from 8 am to 8 pm on weekdays and select to talk with the nurse counsellor. One may also approach the "Therapeutic Prevention Clinic" of the AIDS Unit (Kowloon Bay Health Centre, 9 Kai Yan Street, Kowloon, Hong Kong. Telephone: 2116 2929). All personal particulars will be kept confidential. Anonymous HIV antibody testing can also be arranged via the AIDS Hotline.

*NB. The above discussion is from a medical management perspective. Readers should consult their legal advisors for the legal point of view in case of query in handling an HIV infected HCW. The confidentiality of the clients, however, should be respected as much as possible.*