

NOTES

Occupational Exposure to Human Immunodeficiency Virus (HIV)—How Can We Reduce the Risk?

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We analyzed occupational exposure to potentially infectious body fluids among health care workers (HCWs). Nurses were the most common exposed category of HCWs. In 73.6% cases needle sticks had been the reason of exposure. Recapping a needle was the cause of exposure in 6.9% accidents. Among 189 registered HCWs, 66 (34.9%) performed invasive procedures without any personal protective equipment. Prophylaxis with antiretroviral drugs was necessary in 43 (22.8%) cases.

As many as 60.3% of exposure incidents to potentially infectious material result from non-compliance with the relevant recommendations. Continuous education and training is critically needed to prevent occupational exposure to blood-borne infections among health care workers.

occupational exposure HIV health care workers

1. INTRODUCTION

Occupational risk of contact with blood by needle sticks, injuries with sharp equipment and splashes during diagnostic, therapeutic and nursing procedures are noted with increasing frequency. Hepatitis B virus (HBV), hepatitis C virus (HCV) and HIV are the major blood-borne pathogens as far as occupational exposure is concerned. Despite the implementation of universal precautions, accidental needle sticks continue to occur. The importance of the problem is reflected by the large number of publications in world medical

literature: from January 2000 until the end of March 2003, over 1,300 publications describing occupational exposure to blood-borne infections were registered in the MEDLINE database.

Health care workers (HCWs) remain the main category of employees exposed to blood-borne infections, but an increasing number of accidents among, e.g., policemen or cleaning staff has to be taken into consideration.

The aim of the study was to analyze occupational exposure to potentially infectious biologic fluids among HCWs in the Western Pomeranian region of Poland.

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We recorded the following main irregularities in preventive measures, which resulted in exposure:

1. non-use of PPE against splashes (especially glasses or other eye-protective equipment or an inappropriate protective coat with short sleeves),
2. overfull boxes for dirty devices,
3. use of cardboard (not plastic) boxes for sharp devices.

All those circumstances were the reasons for exposure in 101 (53.4%) cases. We found 13 (6.9%) cases of needle recapping as the cause of the accident.

Time between exposure and the first contact with an advisor was differentiated markedly in the analyzed group. During first 24 hrs after the accident 63.5% (120 out the total of 189) of exposed HCWs came for advice, 19% (36/189)—on the next day. The remaining 33 (17.5%) subjects showed up between 3 days and 3 months after exposure.

Forty-three (22.8%) of exposed HCWs required implementation of post-exposure prophylaxis against HIV. None of them became infected (at a 6-month follow-up).

4. DISCUSSION

Results of prospective studies on HCWs with occupational exposure showed that the risk of contracting HIV after needle stick was approximately 0.3% [1]. The rate of confirmed HIV infections in HCWs as a result of professional exposure in the USA is now less than one per year [2]. So far we have not noted any occupational infections with HIV among HCWs in Poland [3]. The risk will grow because of the rapid increase number of HIV infections among Polish citizens [4]. Many guidelines regarding infection prophylaxis after occupational exposure to HIV are available [5, 6, 7].

More than half of the registered cases of occupational exposure in our study took place in

nurses, who remain the main category of HCWs at risk of acquiring blood-borne infection [1, 2, 8, 9]. Incidence of exposure incidents among doctors was low (30/189, 15.9%). In our opinion, this has been caused by under-reporting accidents in that group. Similar findings were reported by Luthi and colleagues [10]. HCWs have to be strongly encouraged to report all exposures. Every incident, independently of HIV infection, should be reported in the face of the spreading HCV infection. Specific prophylaxis against HCV does not exist, but early recognition and treatment of HCV infection can markedly improve the rate of eradication [11].

Needle sticks are still the most common cause of exposure, but it should be acknowledged that recapping a needle was the cause of post-exposure counseling in only 6.9% cases. This is a promising result, because recapping needles remains a substantial hazardous practice among HCWs [12].

Our survey of using PPE is discomfoting, because more than one third of HCWs did not comply with standard precautions and worked without any protection devices. We observed those undesirable practices among experienced HCWs with long-term working tenure (data not shown). Almost all exposed HCWs declared that they know the universal principle that every patient is potentially infectious. However, they also stated that in practice they used PPE according to the standards only if they knew the status of the patient. Gloves were not routinely worn in the clinical setting and still remained an undesirable practice among HCWs [13].

We had implemented antiretroviral drugs (ARVs) in 22.8% of exposed persons. None of them revealed seroconversion. Risk for occupational HIV transmission is low and prescribing ARVs additionally reduces the risk [14]. Professional assessment of the presence or absence of key risk factors permits to avoid unnecessary cost of PEP (post-exposure prophylaxis) [15].

Despite the existing guidelines knowledge on occupational risk and post-exposure procedures

among health care personnel is highly unsatisfactory, especially as far as management staff and physicians are concerned. In our opinion, intensification of educational activities and enforcement of compliance with the relevant recommendations are necessary.

5. CONCLUSIONS

1. Reporting exposure incidents require enforcement, especially among doctors.
2. As many as 60.3% of exposure incidents to potentially infectious material result from non-compliance with the relevant recommendations.
3. Continuous education and training is critically needed to prevent occupational exposure to blood-borne infections among health care workers.

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