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Awareness Concerning Occupational Exposure and Post Exposure Prophylaxis due to HIV Infection Among Medical Undergraduate Students

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Needle stick injury is relatively common amongst health care workers. The risk of seroconversion following needle stick injury may be reduced by knowledge of body fluids that are high risk and knowledge of post exposure prophylaxis following possible HIV contaminated needle stick injury. A structured questionnaire was used to establish knowledge regarding high HIV risk body fluids and measures to be taken following needle stick injury in a large teaching hospital. Majority of the students are aware of the general information and routes of transmission of HIV, however a significant number do not have proper knowledge about the risk of transmission, prophylaxis, duration and availability of post exposure prophylaxis drugs.

Key words: HIV awareness, Medical students, Post exposure prophylaxis.

Healthcare settings are constantly exposed to occupational hazards. However, the important hazard that health care workers (HCW) fear most is the needle stick injury. It has been reported that nearly 1 million healthcare workers suffer needle stick injuries each year. Of these, hundreds are infected with diseases such as hepatitis B, hepatitis C and HIV. Due to the increasing problem of HIV infection from needle sticks, the Center for Disease Control now recommends post-exposure prophylaxis (PEP) for those workers with needle stick injuries thought to be at risk of carrying the HIV virus[1]. All categories of health-care personal are at risk of acquiring the infection in the course of their work[2]. The nursing staff are especially at risk since they play a major role in caring for patients and, moreover, are exposed to accidental needle-stick or sharp injuries while assisting at surgery[3,4].

The overall rate of HIV transmission through percutaneous inoculation (i.e., by means of a needle or other instrument that pierces the skin) is widely reported to be 0.3% features of exposure that are associated with a higher rate of transmission include a needle that was used to cannulate a blood vessel in the source patient, advanced HIV disease in the source patient, a deep needlestick, and visible blood on the surface of the instrument.

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Moreover in a majority of patients the HIV infection status is not known at the time of initial presentation to the hospital and also it is impossible to screen all the patients visiting hospital for HIV. Anaesthetists and surgeons perform invasive procedures and may experience percutaneous injuries despite following 'universal precautions'. Guidelines have been formulated by CDC, Atlanta to prevent disease transmission to HCW. In India, NACO has formulated similar guidelines for post exposure prophylaxis against HIV. A number of reviews in the literature have specifically highlighted the awareness and role of post – exposure prophylaxis to the prevention of HIV transmission[5-7].

The first knowledge, attitude and practice survey carried out in India, published in 1994 showed gross ignorance about AIDS in general and there are no literatures available regarding the awareness of post exposure prophylaxis among HCW. Thus, a need was felt to carry out a study on awareness of post exposure prophylaxis during occupational exposure to HIV among under-graduate students in medical college hospital.

Objectives

To assess the awareness of post – exposure prophylaxis guidelines against occupational exposure to HIV among under graduate students

MATERIAL AND METHODS

Ethical clearance

Institutional ethical committee approved the protocol.

Study subject

Pre final MBBS students

Number of subjects: 117

Study type: questionnaire type. This questionnaire asked the following

1 What percentage of needle stick injuries from patients with known HIV infection are likely to result in transmission of the virus to the recipient?
2 Which of the following nine body fluids (presuming that they are not blood stained) may be considered as high risk for the transmission of HIV; breastmilk, synovial fluid, saliva, faeces, urine, peritoneal fluid, pleural fluid, vomit, cerebrospinal fluid.
3 Who should be contacted in the event of a needle stick injury?
4 What two first aid procedures should you perform to the needle stick site?
5 How soon after a high risk needle stick injury should post exposure prophylaxis?

All the students who participated were briefed regarding the study and consent were obtained.

The standardized questionnaire was distributed and collected within 20 minutes.

RESULTS

Regarding the general information about HIV/ AIDS, all the students (100%) agreed that HIV is a retro virus[8,9]. 99% of the students answered that HIV is transmitted through sexual intercourse, percutaneously and parentrally and 84% of the students had the knowledge about the first case of HIV infection reported in 2001[8,9]. Only 18% (21 students) of them opined that Male Homosexuals, having multiple sex partners, IV drug users, new born of infected mothers as high risk groups[8,9]. 34% of them said CD4 count will be <50 in advanced stage[8,9] and 83 students (71%) of them expressed washing hand immediately, using gloves and using protective attires as part of standard precautions[10,11]. The percentage of students who were aware about the percentage of risk of transmission of HIV from needle prick injuries i.e. 0.3% was 38%[10,11]. Only 13 % identified the high risk fluids correctly as CSF, Peritoneal fluid, Synovial fluid & Pleural fluid[10] and 22.3% identified only CSF as high risk fluid. 9.1% identified CSF, Peritoneal fluid, Pleural fluids as high risk fluids.

Following a needle stick injury the first priority should be to promote active bleeding of the wound and to wash the wound thoroughly with soap and running water. 66% correctly stated both measures.

How soon after a high risk needle stick injury should post exposure prophylaxis commence? Only 33% knew that the duration of post exposure prophylaxis is four weeks[10, 11], where as 39.7% felt that the duration is 6 weeks. Only 59% knew that the drugs were available in Anti Retroviral Therapy Centre and 69% did not know that approximate cost of therapy. 68% correctly stated that prophylaxis should be initiated within

3 days of injury[10,11] and 73% of the students correctly stated that Zidovidine and Lamuvidine combination should be used for prophylaxis[10, 11]

Who should be contacted in the event of needle stick injury? 97% stated either the accident and emergency department or occupational health department.

If emergency department or occupational health departments are not available, 54 % felt that the hospital Superintendent should be approached first for the post exposure prophylaxis while 23.2% felt that the OT in – charge should be approached.

CONCLUSION

1. This study indicates some lacunae regarding the post-exposure prophylaxis against HIV among the students.
2. Similar studies conducted in India as well as outside, reveal the lack of knowledge in Post exposure prophylaxis[5-7].

Recommendations

1. An awareness programme is necessary to improve the knowledge regarding universal precautions/ standard procedures, prophylactic measures for prevention of exposure and the procedures to be followed after accidental exposure among medical under graduates.
2. Charts on first aid in case of accidental exposure should be displayed in all the wards, injection room and lab of the hospital.
3. PEP centre should be established in the hospital.

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