

Training on Post-Exposure Prophylaxis against blood borne infections among interns in a tertiary care hospital. - The only way of survival.

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Abstract

Background: There is an urgent need to create awareness amongst health care providers especially junior doctors regarding occupational injuries and post exposure prophylaxis for various blood-borne viral infections.

Aim : This study was done to assess the baseline knowledge, attitude and practice regarding transmission and post-exposure prophylaxis (PEP) for prevention of transmission of HIV, Hepatitis B virus and Hepatitis C virus amongst Interns followed by baseline induction training.

Methods: Cross-sectional study at a tertiary health care hospital attached to a medical college. 107 interns were given a structured questionnaire to answer after informed consent. Their responses were analyzed statistically.

Results: Knowledge and awareness about PEP 88% among the interns but only 15% were aware about the drugs and the regimens. 88% of them strongly agreed that training was to be an essential part of their medical course. 44% were not aware of the procedure to be followed after accidental exposure

Conclusions: This study indicates that there is an urgent need of correcting the existing misconceptions through trainings early in the course and provide supportive and correct guidelines regarding needle-stick injuries and HIV and Hepatitis B infection.

Key-words: Blood, HIV, Interns, PEP

Introduction :

Assessing Students' Knowledge, Attitude and Practice about Health safety, are important for continuous improvement of the educational environments and curriculum.

A health care worker (HCW) has a small but significant occupational risk of transmission of blood borne viral infections including hepatitis B virus (HBV), hepatitis C virus (HCV) and human immunodeficiency virus (HIV)¹. According to a WHO model, the worldwide annual incidence of HIV infections among health care workers (HCW) is estimated to be close to 1000 infections due to occupational exposure to percutaneous injuries.²

Students passing out of many medical colleges in India have less than adequate knowledge and information about post exposure prophylaxis (PEP), and these interns starting their medical career are therefore at highest risk of accidental exposure to blood and body fluids at their workplace

Hence it becomes important to generate a knowledge base about the Knowledge, attitude and practice (KAP) regarding PEP recommended for prevention of the transmission so as to help plan appropriate sensitization and induction training programmes and minimize the risk of transmissions

The present study was done to know the existing KAP regarding transmission, precautions and PEP for prevention of transmission of HIV, HBV and HCV amongst interns in our institution and subsequently conduct induction training for all the junior doctors as a routine and incorporate as part of our system.

Methodology:

This study was conducted at a Tertiary care teaching hospital affiliated to Medical College in Bangalore. It was a cross sectional study conducted over a period of 1 month in May 2014. A semi structured questionnaire having 15 questions pertaining to Knowledge, Attitude

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and practice respectively was designed to assess the of interns on PEP during the beginning of their 1 year rotational horsemanship .This was based on the National Aids control organization guidelines(NACO)³ Permission from the Head of the Institution was taken to conduct the study.

The structured questionnaire was administered to 107 interns who . were explained about the study, and consent was obtained for participation. Their responses were statistically analyzed. Trainings will be conducted in batches to sensitize these doctors as part of Continued medical education.

Results:

The questionnaires were distributed to all 107 interns of 2014-15 batch of which 104 answered and the rate of response was 97%. The mean age of interns was 23±1 years. Of 104 total interns 65 (62.5%) of them were males and 39(37.5%) were female. With regards to knowledge about PEP, 88% of the interns were aware of the term, but only 34% were aware that it has to be taken immediately and within 72 hours, 21% female interns had knowledge about the time period. And regarding what conditions it has to be used, only 57% knew it was to be used for HIV and HbSag.85% said reporting needle stick injury was mandatory and 14% were only aware about PEP drugs.(Table 1)

When we assessed the attitude, 86% strongly agreed that needle stick injuries are dangerous, 88% again strongly agreed that use of gloves and following standard precautions is necessary, also 82% strongly agreed that safe and proper disposal of sharps can decrease hazard.88% of them were keen on getting trained, and 86% felt proper awareness about PEP can help them in future. (Table 2).

Regarding practice,99% have not had exposure to blood and body fluids, and none of them have taken PEP as yet, only 56% of them had knowledge about the first aid and procedure to be followed following needle stick injury,54% only were aware to whom needle stick injury has to be reported to ,Only 76% of them have been immunized against HbSag. (Table 3).

Discussion :

Interns at a very early stage of their professional career take maximum load of providing medical care in the in-patient and out-patient departments of any medical college across the world and more so in a developing country like India, and are thus at a great risk of occupational exposure to all kinds of blood borne pathogens including HIV. Earlier studies had shown poor knowledge and compliance of "Standard Precautions"

among interns.^{4,5} It is thus essential to instill in them good infection control practices from the very commencement, before inaccurate practice develops into a routine and to develop in them awareness of PEP for prevention of HIV, HBsAg and HCV infection through occupational exposure.

In our study , knowledge about PEP, 88% of the interns were aware of the term, but only 34% were aware that it has to be taken immediately and within 72 hours, this is slightly better than the study done by chogle et all where only 6% knew the correct duration of post-exposure prophylaxis.⁶

In a hospital-based study in London, Chen et al. reported that although most junior doctors heard of PEP, only a minority could name the drugs recommended in national guidelines and a

significant proportion could not name any. Another study from South Africa showed that around 67% of the respondents were not aware when PEP should be started, while nearly 76% did not know the drugs used for PEP and 81% did not know its correct duration.⁷

Only 57% of them knew it was to be used for HIV and HbSag. because, though the topic of PEP is a vitally important one, there is paucity of literature on the topic, particularly when it comes to the knowledge base of interns, nurses and technicians.⁸

Very few of them(14%) were only aware about PEP drugs, which drugs to be used and where they were available which is similar to study done shuvankar et al.⁸ but ours is more than the 8% reported by Chen *et al.*^[10] Similarly, Chogle *et al* documented that 42% were aware of the use of zidovudine but none were aware of the second (basic) or third (expanded) drugs used for PEP^[6]. Scoular *et al* too reported that only 13% respondents knew that a regimen consisting of more than one drug is now recommended^{11,12}

Availability of institutional guidelines and wide publicity of PEP available in the institution premises is a must for reducing the time interval between the occupational exposure and the first dose taken.⁸

When we assessed the attitude, 86% strongly agreed that needle stick injuries are dangerous, 88% again strongly agreed that use of gloves and following standard precautions is necessary, also 82% strongly agreed that safe and proper disposal of sharps can decrease hazard.88% of them were keen on getting trained, and 86% felt proper awareness about PEP can help them in the future.Since there is a keen interest on learning this data forms a baseline for us to formulate training programmes.

Regarding practice, 99% have not had exposure to blood and body fluids, and none of them have taken PEP as yet, only 56% of them had knowledge about the first aid and procedure to be followed following needle stick injury, . In a similar study conducted in Mangalore, India, it was reported that only 23.5% knew the first aid measures following exposure and approximately 57.6% expressed knowledge relating to the application of antiseptics to the injured site;⁹ In our study, 54% only were aware to whom needle stick injury has to be reported to, which is less than the study done by Shuvankar et al 63%⁹.

Our study shows that of 76% doctors are vaccinated against HBV. This is slightly less when comparable to the 87.7% reported by Wig *et al* in their study⁸.

Conclusion

The present study shows that though the interns had positive attitude towards training about PEP and infection control measures, they were lacking in knowledge and practice. Hence, to decrease occupational hazards of blood borne infections knowledge and awareness among interns should be increased.. Various health and safety measures can be adopted to decrease the incidence of NSI, as follows:

An effective occupational health and safety program should be established and incorporated in the undergraduate training curriculum that includes immunization, PEP, health care waste management and standard precautions. Practical evaluation should also be done at undergraduate levels of training to reinforce these guidelines and protocols.

Table 1 - Knowledge

Question asked	Male correct responses (%) N=65	Female correct responses (%) N=39	Total (%)
1. The term PEP	54 (83%)	37(95%)	91 (88%)
2. PEP time period	27 (42%)	8(21%)	35 (34%)
3. PEP should be used for	39 (60%)	20(51%)	59 (57%)
4. Mandatory reporting of needle stick injury	55 (85%)	33(85%)	88 (85%)
5. drugs used in PEP	7(11%)	8(15%)	15(14%)

Table 2 - Attitude

Question Asked	Strongly Agreed - Males(%) N=65	Strongly Agreed - Females(%) N=39	Total (%) N=104
1) Danger of needle stick injury	56(86%)	33(85%)	89 (86%)
2) Importance of gloves	58(89%)	34(87%)	92 (88%)
3) Importance of proper disposal of sharps	51(78%)	34(87%)	85 (82%)
4) Importance of training in PEP	56(86%)	35(90%)	91 (88%)
5) Proper awareness regarding Hospital Associated Infections	55(85%)	34(87%)	89 (86%)

Table 3 - Practices

Question asked	Male correct responses (%) N=65	Female correct responses (%) N=39	Total (%) N=104
1. Have not had occupational exposure to blood and body fluids	63(97%)	36(92%)	99 (95%)
2. Procedure to be followed in case of a needle stick injury	32(49%)	26(67%)	58 (56%)
3. Reporting of needle stick injury	35(54%)	21(54%)	56 (54%)
4. Have not taken PEP	65(100%)	39(100%)	104(100%)
5. Has the hospital immunised you against Hepatitis B	49(75%)	30(77%)	79 (76%)

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