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A study of awareness and practice of post-exposure prophylaxis (PEP) of HIV infection among health-care workers of district civil hospital in Gujarat, India

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Abstract

Background: Health-care workers (HCWs) are at higher risk of acquiring infections with blood borne pathogens because of occupational exposure to blood and other body fluids while working in health care settings. Human immunodeficiency virus (HIV) is a major global public health concern. The human immunodeficiency virus (HIV), being one such pathogen is an important occupational risk for HCWs. Hence adequate knowledge and practices on post exposure prophylaxis (PEP) for HIV infection among health care workers are of utmost importance for HIV infection prevention.

Objective: The aim and objective of this study was to assess the awareness and practice toward post-exposure prophylaxis (PEP) for HIV infection amongst health care workers.

Methodology: A cross-sectional descriptive was conducted from December 2015 to January 2016 among HCWs in district civil hospital. Approval was taken from authority of hospital. Data were collected using pre-designed, semi-structured questionnaire from study participants. Data were entered in MS Excel sheet and analyzed using MS Excel. Results were presented in frequencies and percentages.

Result: Amongst the entire three groups, all doctors (100%) had adequate knowledge about the PEP followed by lab technician (50%) and nurses (30%). Eighty three-percent of the HCW knew about the best

time to start PEP, 36.6% about the acceptable delay and 76.6% were aware of the total duration of the regimen.

Conclusion: From our study, we would like to conclude that Doctors were satisfactorily aware of PEP for HIV. Awareness as well as practice of Post exposure prophylaxis for HIV infection among HCWs was inadequate specifically among nursing staff. Therefore, a regular and frequent training and sensitization of all HCWs specially nursing staff regarding PEP for HIV infection is recommended to improve their awareness as well as practice towards PEP and prove as an effective strategy to contain the spread of HIV infection.

Keywords: Post-exposure prophylaxis, health-care workers, HIV, District civil hospital

Introduction

HIV infection is a serious public health concern. India is the second most populous country and constitutes third largest number of HIV infected people globally.[1] Health care workers (HCWs) are persons working in health care setting. It applies to all paid and unpaid persons working in healthcare settings who have the potential for exposure to infectious materials including blood and body fluids, contaminated medical equipment, or contaminated environmental surfaces. HCWs in developing countries are at serious risk of acquiring infection from blood borne pathogens because of the higher prevalence and increased occupational risk of these pathogens in these areas. Unsafe practices like improper handling of contaminated needles, reuse of inadequately sterilized needles, and improper disposal of hazardous waste increases the possible risk of transmission of this blood borne pathogens.[2] Post exposure prophylaxis (PEP) is a medical treatment recommended after potential exposure to prevent transmission of pathogens. It is started to reduce the risk of acquiring infection following potential exposure to blood-borne pathogens and it includes first aid, risk assessment, counseling, relevant laboratory investigations of the exposed person and source. [3, 4]

Many evidences are available which show that there was an information gap in the health care settings regarding PEP. For example, a study conducted in London depicted that only 22% of doctors identified all the three drugs that are recommended.[5] A study conducted in Ethiopia, showed that 83.9% of total HCWs had inadequate knowledge about PEP for HIV and among the exposed respondents, 81.6% did not use PEP.[6] In a study conducted in West Bengal among interns, 69.2% knew the basic regimen of PEP, 55.4% knew the expanded regimen of PEP and only 46.9% knew that PEP should be continued for 4 weeks.[7]

HIV/AIDS infection in health care setting has become a major health concern. Specially in resource poor setting, health care workers are managing large number of HIV infected patients without much awareness which increases potential riskof acquiring HIV infection. This situation emphasizes that there is a need to create awareness andappropriate use of post exposure prophylaxis for HIV infection. And also, there was no data available on the awareness and practice of post-exposure prophylaxis (PEP) among health care workers in district civil hospital. So, this study was conducted to assess the knowledge, practices of health care workers regarding PEP for HIV infection in district civil hospital.

Aims and Objectives

The aim and objective of this study was to assess the awareness and practice toward post-exposure

prophylaxis (PEP) for HIV infection amongst health care workers.

Material and Method

This study was Cross-sectional descriptive study. The present study was undertaken from December 2015 to January 2016 in district civil hospital. Total 30 health care workers were interviewed with pre-designed, semi-structured questionnaire including doctors, nurses and laboratory technicians. Approval was taken from authority of hospital. Data was collected using pre-designed, semi-structured questionnaire from study participants. Data was entered in MS Excel sheet and analyzed using MS excel. Results were presented in frequencies and percentages.

Study design: Cross sectional study.

Study population: Health care workers (doctors, nurses and laboratory technicians) of District Civil Hospital

Sample Size: The sample size was 30. Doctors, nurses and laboratory technicians each 10 in number

Patients Inclusion Criteria:

1) All the health care workers willing to participate in the study.

2) Doctors, nurses and laboratory technicians

Exclusion Criteria: Administrative staffand maintenance staff.

Tools for data collection: pre-tested, semi-structured, self-administered questionnaire.

Data collection methodology: Permission was obtained from the concerned authorities of the hospital for data collection. Data was collected by distributing pre-tested semi-structured questionnaire to the health care workers after obtaining informed consent.

Data Analysis: The collected data was entered in Microsoft Office Excel worksheet and analyzed using Microsoft Office Excel. Descriptive statistics like mean, proportions were used for expressing the results.

Scoring of knowledge: Total 10 questions were given to all the health care workers to assess the knowledge regarding PEP for HIV infection and those health care workers who scored more than or equal to 70% were considered knowledgeable.

Results

Profession	Doctors	Nurses	Lab technicians
% of Females	40	90	90
% of Males	60	10	10
Mean Age	37.5	37.8	29.7

Table 1: Age and Sex distribution of health care workers under study (n=30)

As shown in table - 1, in the present study among doctors 40% were females and 60% were males while among nurses and lab technicians, 90% were females and only 10% were males. Among all participants Male female ratio was 1: 2.75.In our study, females were more in number compared to males. Mean age of doctors were around 37.5 years, of nurses were around 37.8years and of lab technicians were around 29.7years.

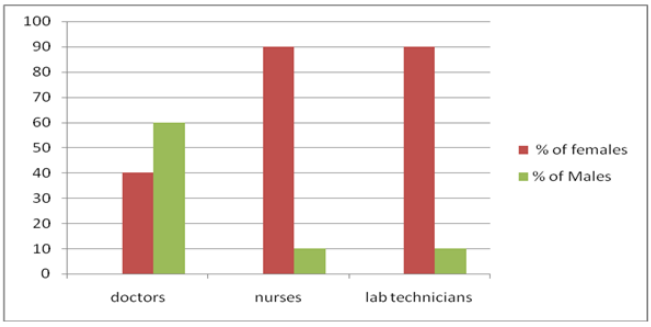

Figure 1: Percentage distribution of health care workers by gender

Sn.	Question	Total score N (%)	Doctors N (%)	Nurses N (%)	Lab tech N (%)
1	Had adequate knowledge about the PEP	18 (60)	10(100)	3(30)	5(50)
2	Finger should not be put into mouth immediately after exposure	29 (96.6)	10(100)	10(100)	9(90)
3	Antiseptics should be applied to wounds	14 (46.6)	2(20)	5(50)	7(70)
4	Exposed part should be washed with soap and water	27 (90)	10(100)	8(80)	9(90)
5	Eyes and mouth should be irrigated with normal saline or water immediately after exposure to body fluids	29 (96.6)	10(100)	10(100)	9(90)
6	Maximum delay to take PEP	11 (36.6)	6(60)	2(20)	3(30)
7	Preferable time to take PEP	25 (83.3)	9(90)	8(80)	8(80)
8	Duration of PEP treatment	23 (76.6)	9(90)	4(40)	10(100)
9	Knowledge regarding reporting of exposure	28 (93.3)	10(100)	8(80)	10(100)
10	Received formal training on PEP	3 (10)	3(30)	0(0)	0(0)

Table 2: Knowledge of HCW regarding post exposure prophylaxis of HIV infection

As shown in table 2, Values are expressed as frequency and percentages in the table. Amongst the entire three groups, all doctors (100%) had adequate knowledge about the PEP followed by lab technician (50%) and nurses (30%). 83.3 percent of the HCW knew about the best time to start PEP, 36.6% about the acceptable delay and 76.6% of the HCWs were aware of the total duration of the PEP treatment. Regarding awareness of immediate measures following exposure to blood or body fluids or needle stick injuries, 29 (96.6%) knew that finger should not be put into mouth immediately after exposure, 27 (90%) knew that exposed part should be washed with soap and water, 29 (96.6%) knew that eyes and mouth should be irrigated with normal saline or water immediately after exposure to body fluids and only 14 (46.6%) knew that antiseptics should not be applied to wounds. Amongst all the HCW only 10% had received formal training on PEP.

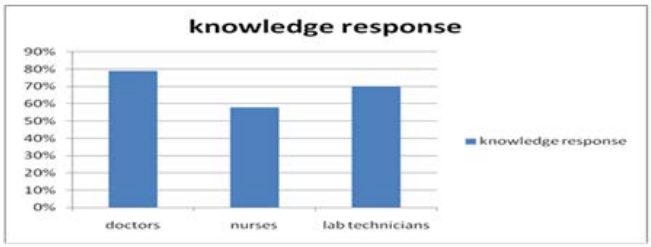

Figure 2: Knowledge of HIV PEP among different professions

As shown in figure 2, among different professions, doctors responded better than lab technicians and nurses for each of the question items. Nearly 79% of the questions were answered satisfactorily by doctors. Lab technicians gave 70% of the answers satisfactorily followed by nurses which gave only 58% of the answers correctly.

Discussion

HCWs are at constant risk of occupational exposure to blood and other body fluids that carry the risk of transmission of HIV infection to them. So, ensuring occupational health safety is a serious challenge in a district civil hospital. Therefore, this study assessed the awareness and practice of post-exposure prophylaxis (PEP) of HIV infection among health-care workers, which is an important plan of action for the prevention of transmission of HIVinfection among HCWs in a district civil hospital.

In present study, 60 % ofHCWs have heard about PEP for HIV, which is low in comparison to study by Owolabi et al.[8]Mathewos et al.[9] and Agaba et al.[10] where 97%, 92.8% and 97.7% have heard of PEP, respectively. In another study conducted by Ashat et al.[11], among HCWs in North India, awareness regarding PEP for HIV was around 27.1%, which is much lower in comparison to the present study. Lack of proper training and sensitization could be possible reasons for such inadequate knowledge amongst HCWs. So it's very important to sensitize HCWs regarding PEP in health care settings.

Immediate first aid measure is to wash the exposed part with soap and water after any exposure to patient's blood or other body fluids, and our study revealed that majority of the respondents (90%) had awareness regarding irrigating the exposed part with soap and water immediately, which is similar to observation by Bairy et al. where 94% doctors and nurses were aware of washing with soap and water.[12]This was found to be higher in comparison to studies by Mukherjee et al.[13] and Chogle et al.[14] where awareness regarding washing of exposed part with soap and water was observed in 84.6% and 78%, respectively. This study also found that 96.6% of respondents were aware of washing the exposed eyes and mouth with water or normal saline, which was higher in comparison to study by Mukherjee et al.[13] where only 65.4% of participants were aware. Regarding one important fact that finger should not be put into mouth after injury, awareness was observed in 96.6% of participants in our study, which was higher in comparison to study by Mukherjee et al.[15] where 70% knew of this fact.

Another important point in relation to application of antiseptics to wounds, this study revealed that only 46.6% of participants were aware of the fact that antiseptics should not be applied to wounds, which was much lower in comparison to study by Mukherjee et al.[13]where among interns, 67.7% were aware that antiseptic application could cause more damage to exposed tissues.83% of our study population answered satisfactorily regarding the best time to start PEP. This was higher compared to similar studies in Ethiopia (50.8%) and in Mumbai (64%).[9, 14]Seventy six-percent of the HCWs correctly knew the duration of PEP. This value is comparable to 73% of the study population in Ethiopia but more than the study conducted in Nigeria (30.9%).[8,9]

Overall, doctors (79%) and lab technician (70%) had adequate knowledge by obtaining a score of 70% or more. Nursing staff could obtain only 58% regarding knowledge of PEP for HIV. It may be because at

district civil hospital staffs are not updated with desired knowledge as compared to medical colleges and other teaching institution.

Conclusion

Doctors were satisfactorily aware of PEP for HIV infection. Awareness as well as practice of PEP for HIV infection among HCWs were not satisfactory amongst nursing staffspecifically. Therefore, a regular training and sensitization of all HCWs specially nursing staff regarding PEP for HIV is recommended to improve their awareness and knowledge and prove as an effective strategy to contain the spread of HIV infection. There should be written policies and standard operating procedures in place to ensure health care workers are aware of the actions to be taken if they are at risk of occupational exposure.

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