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Research Article

Universal precaution: practice among doctors in a tertiary care hospital in Manipur

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ABSTRACT

Background: Health workers especially doctors are always at higher risk of exposure to blood borne pathogens in day to day practice. Universal precaution is the only strategy so that all these infections could be prevented. The objective of the study was to assess the practice of Universal Precautions among doctors & factors influencing its use in a tertiary health centre of Manipur.
Methods: Cross-sectional study was conducted among the doctors in a tertiary health care centre of Manipur during October 2011 to September 2013. Structured questionnaire was used to collect data. Descriptive statistics like percentage was used to describe the findings using SPSS 20.
Results: Total respondents were 366 doctors. Response rate was 98%. Total of 125 (34.2%) respondents always used glove as a measure of universal precaution. Hand-washing after removal of gloves was practiced by more than half of the respondents. Around 2 in 10 participants never used personal protective equipments like gown & mask. Around 7 in 10 participants always practiced recapping after use. Total of 150 respondents (41%) used to dispose sharps in sharp and liquid proof container with removing syringe.74.3% mentioned the reasoning of not practicing universal precaution was lack of supply of personal protective equipment. A total of 50 respondents told that emergency situation was also responsible for not adhering to the practice. Work stress (1.6%), time constraint (5.7%), lack of display of guidelines (3.8%) were the reasons mentioned by few of them.
Conclusions: Universal precaution practice was poor. Training of the health care workers, proper equipment supply, posters displaying guidelines and proper hospital policy of patient load management would help in improving the implementation of universal precaution thus restoring occupational safety of health care workers.

Keywords: Universal precaution, Personal protective equipment, Doctors

INTRODUCTION

Universal precaution (UP) is defined as a method of infection control—recommended by the Centre for Disease Control (CDC)—in which all human blood, certain body fluids, as well as fresh tissues and cells of human origin are handled as if they are known to be infected with HIV, HBV and or other blood-borne pathogens.[1] In 1983, a section entitled "Blood and Body Fluid Precautions" was published under a document "Guideline for Isolation Precautions in Hospitals". The recommendations were to take blood and body fluid precautions only for a patient known or suspected to be infected with blood-borne pathogens. In August 1987, CDC document entitled "Recommendations for Prevention of HIV Transmission in Health-Care Settings" came up with guidelines mentioning that all patients regardless of their blood-borne infection status should be

handled as potentially infectious. This blood and body fluid precautions that consider all patients is referred to as "Universal Blood and Body Fluid Precautions" or "Universal Precautions." Blood and certain other body fluids including semen, vaginal secretions, body tissues, cerebrospinal fluid, synovial fluid, pleural fluid, peritoneal fluid, pericardial fluid, amniotic fluid of all infected person is assumed to be infected with human immune deficiency virus (HIV), hepatitis B virus (HBV), and other blood-borne pathogens. But it is not applicable to the exposure of saliva (except in dental settings, where saliva is likely to be contaminated with blood), feces, nasal secretions, sputum, sweat, tears, urine and vomitus.[2]

Health workers especially doctors are always at higher risk of exposure to blood borne pathogens in day to day practice. Universal precaution is the only strategy so that all these infections could be prevented. But implementation of these strategies in a resource-poor country like India is doubtful. Therefore, practices of universal precaution & the factors influencing these practices have been evaluated in a tertiary hospital of Manipur.

METHODS

This was a cross-sectional study conducted in Regional Institute of Medical Sciences, Imphal, Manipur during Oct 2011-September 2013. Study participants were the doctors involved in day to day clinical practices who were vulnerable to blood-borne infection exposures. Participants were selected purposively. Those who did not give consent & could not be contacted after three successive visits were excluded from this study. Structured Questionnaire was the study tool. It consisted of 3 sections namely baseline characteristics, questions on practices & the factors responsible for not adhering to practicing guidelines. Data were collected after obtaining permission from respective heads of the departments. Prior permission was taken from the respondents & questionnaires were distributed. Any confusion regarding topic or questions was clarified. Data were checked for completeness & analysis was done using SPSS 20. Descriptive statistics were used to describe the findings. Study was approved by Institutional Ethical Committee. Confidentiality was maintained.

RESULTS

Total respondents were 366 doctors. Response rate was 98% excluding 4 respondents who did not give consent & 2 of them who could not be contacted.

46.4% of the respondents were in the age group of 25-30yrs. More than 50% of the doctors were male. More than 7 in 10 doctors were single. Majority of them had job experience of <5yrs, i.e. 85.8% (Table 1).

Table 1: Baseline characteristics (N=366).

Characteristics	Number	Percentage
Age (years)		
20-24	92	25.1
25-29	170	46.4
30-34	60	16.4
35- 39	26	7.1
40 and above	18	5.0
Gender		
Male	221	60.4
Female	145	39.6
Job experience (yrs)		
<5	314	85.8
≥5	52	14.2

Total of 125 (34.2%) respondents always used glove as a measure of universal precaution. Hand-washing after removal of gloves was practiced by more than half of the respondents but 3% of them never used to wash hands. Around 2 in 10 participants never used personal protective equipments like gown & mask. 62% of the respondents never used goggles whenever blood & body fluid splash was likely. Around 7 in 10 participants always practiced recapping after use (Table 2).

Total of 150 respondents (41%) used to dispose sharps in sharp and liquid proof container with removing syringe. But 3 in 10 participants still used to dispose in open pail whereas around 3 in 10 respondents used to mix it with general waste (Table 3).

Table 2: Practice of universal precaution (N=366).

Practice	Always n (%)	Usually n (%)	Sometimes n (%)	Seldom n (%)	Never n (%)
Gloves use	125 (34.2)	132 (36.1)	86 (23.5)	23 (06.3)	0 (0.0)
Hand washing after removal of glove	194 (53.0)	98 (26.8)	53 (14.5)	10 (02.7)	11 (03.0)
Gown use	107 (29.2)	66 (18.0)	90 (24.6)	37 (10.1)	66 (18.2)
Mask use	108 (29.5)	61 (16.7)	97 (26.5)	46 (12.6)	54 (14.8)
Goggles use	27 (07.4)	30 (08.2)	38 (10.4)	44 (12.0)	227 (62.0)
Recapping needle immediately after using	262 (71.6)	66 (18.0)	14 (03.8)	11 (03.0)	13 (03.6)

Table 3: Participants' response to the disposal of sharp materials such as used needles (N=366).

Responses	n	(%)
Open pail	10	02.7
Sharp and liquid proof container without removing syringe	57	15.6
Sharp and liquid proof container with removing syringe	150	41.0
Mixed with general waste	23	06.3
Others (hub cutter & hypo chloride solution)	126	34.4

74.3% mentioned the reasoning of not practicing universal precaution was lack of supply of personal protective equipment. A total of 50 respondents told that emergency situation was also responsible for not adhering to the practice. Work stress (1.6%), time constraint (5.7%), lack of display of guidelines (3.8%) were the reasons mentioned by few of them (Table 4).

Table 4: Reasons for not practicing universal precaution (N=366).

Responses	n	(%)
Work stress	6	01.6
Time constraint	21	05.7
Lack of supply of personal protective equipment	272	74.3
Lack of display of guidelines	14	03.8
Emergency situation	53	14.5

- Multiple answers allowed

DISCUSSION

In this study, little more than one third of the doctors used gloves which were less compared to a study conducted by Mukharjee et al where 62.4% of the doctors always used glove.[3] This could be explained by lack of supply of gloves which had been documented by many of the respondents. But this present study finding was more as compared to a study conducted in Pakistan where only 20.9% of doctors wore gloves for "most of the time" to "always".[4] Majority of the doctors washed hands (53%). This finding was consistent with a study by Chopra S et al, Mukharjee et al.[3,5] This present finding was less as compared to that of Jawaid et al where among medical doctors working in a tertiary care hospital in Pakistan, compliance for hand washing was found to be 86%.[6] Use of Gown was by around 3 in 10 doctors which was less than a study finding conducted by Mukarjee et al, Jawaid M et al where 56.2% and 45% of the doctors wore plastic apron.[3,6] 29.5% of the doctors wore mask which was little lower than the finding of one study where masks were used by 46% of the doctors.[6] Only 7.4% of the doctors wore goggles in the present study. This finding was not comparable with other finding where 22.5% of the respondents wore goggles and 25% of the respondents wore goggles.[3,6] This finding could be explained by lack of availability of personal protective equipment in this institution. Around 70% of the doctors practiced recapping which was similar to the study finding by Mukharjee et al, and Abdul et al.[3,4] In this study 41% the doctors disposed the sharps in puncture proof container which was almost similar with a study finding of Muhharjee et al where 49.1% of the respondents used puncture proof container for sharp disposal.[3] Time constraint, lack of supply of personal protective equipment, work stress, lack of display of guidelines,emergency situation were mentioned as reasons of not practicing universal precaution.[3,8,10,11-15]

This study described the findings of practice of universal precaution & the reasons behind it which was a reflection of occupational safety scenario in premier institute of north east India. But the study is limited by not having its observation component which could have reflected the real time scenario avoiding social desirability bias.

CONCLUSIONS

Universal precaution practice was poor as around only one third of the respondents used gloves for their usual clinical practices & hand-washing practice was also not satisfactory. Use of personal protective equipment was also unsatisfactory. Reasons mentioned for not practicing were time constraint, work stress, lack of supply of personal protective equipments, lack of display of guidelines and emergency situation. Therefore, training of the health care workers, proper equipment supply, posters displaying guidelines and proper hospital policy of patient load management would help in improving the implementation of universal precaution thus restoring occupational safety of health care workers.

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