

Hepatitis B and human immunodeficiency viruses infection: awareness and universal precautions in Kassala, eastern Sudan

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ABSTRACT

Background: Health care workers are at higher risk to be infected by the blood borne pathogens.

Aim: To investigate the awareness and the universal precautions regarding hepatitis B and human immunodeficiency viruses.

Method: A cross sectional survey of health care workers carried out during April and through June 2011 at Kassala hospital, eastern Sudan.

Results: Among 143 participants 86% knew the different mode of transmission; however small proportion 5.6% claimed that HIV and/or HBV were not preventable infections, only 50.3% were knowledgeable regarding the symptoms of HIV/HBV and 53.7% knew the possibility of the association between HIV and other sexually transmitted infections. Less than half (46.9%) of the respondents mentioned that they always wear gloves when get in contact with the patient's blood and likewise 49% of the workers recapped the needle after its use.

In this study awareness and universal precautions regarding blood borne pathogens were significantly varied among the different health care workers.

Conclusion: Thus at present, in our setting without a program for occupational safety the health care workers are going to face an epidemic of blood borne infectious diseases.

Keywords: blood borne, infection, awareness, HIV, Sudan.

Introduction

Blood borne infectious diseases constitute a major health burden for the developing countries [1]. Health care workers are at higher risk to be infected by the blood borne pathogens [2]. Worldwide sharp injuries among health care workers resulted in 16000 hepatitis C virus, 66000 hepatitis B virus and 1000 human immunodeficiency virus infections [3]. Knowledge, awareness about these infections as well as risk behaviors is very important for policy implementations and programme management [4].

Noncompliance regarding occupational safety among health care workers determined by many factors including lack of knowledge, risk perception, poor qualification, absence of a system for prevention of blood borne pathogens, conflict of interest, interference with work skill and time [5, 6]. Sudan, a largest African country with more than 33 millions inhabitants has a high prevalence rate of blood borne infectious diseases [7, 8] however few data exist concerning knowledge and awareness among health care workers thus the current study directed at assessing knowledge, awareness and universal precautions regarding blood borne infections in Kassala hospital, eastern Sudan.

Materials and Methods

Study area

This was a cross sectional survey of health care workers carried out during April and through June 2011 at Kassala Teaching hospital, eastern Sudan. The hospital is 400 beds tertiary care facility which serves as a referral centre for Kassala State, Eastern Sudan. The average patients turn over at the hospital is 150-300 patients per day.

Respondents

Random selections of 143 health care workers who are in direct contact with the patients or equipments used on patients and are likely to get exposure to blood borne pathogens were included. Further classifications were used to describe the health care workers: MBBS practitioners (prescribers: those who provide consultation and prescribe medications to the patients) and non MBBS practitioners like dispensers (those who dispense medicine and administer injections) and housekeepers (those who perform janitorial work at the hospital). These workers were approached and asked to complete self administered and anonymous pre-tested questionnaire to assess their knowledge, attitude and risk behavior towards blood borne pathogens in particular (hepatitis B and human immunodeficiency viruses). The objectives of the study were explained to the workers and their verbal consent was obtained before they were given the questionnaire. The questions sought information on sociodemographic characteristics (age, gender, job description, marital status...ect), on their knowledge and awareness regarding the mode of transmission, measures for the prevention and universal precautions such as wearing gloves and recapping the needle after its use and the possibility of the association between HIV and other sexually transmitted infections.

Data analysis and Ethical approval

The data were entered in computer using SPSS software for Windows version 16.0 (SPSS, Inc, Chicago, IL) and compared between the different health care workers using χ^2 test and P value < 0.05 was considered significant.

The study received the ethical clearance from the Health Research Board at Ministry of Health, Kassala, Eastern Sudan.

Results

Socio-Demographic Characteristics

A total of 143 participated in this study their mean age was 27.1 ± 6.2 and ranged between 17 and 43 year, the mean duration of experience was 12 ± 8.7 and ranged between 3 and 27 year. The majority (55.9%) of the workers was male yielding 1.3 male to female ratio and 52.4% were married. Among these 143 workers 32.4% (46/143) were MBBS practitioners while the rest (97/143, 67.8%) were non-MBBS practitioners, 77.3% (75/97) out of them were dispensers and 22.7% (22/97) were housekeepers.

Knowledge and Awareness

With regards to knowledge and awareness of HIV and/or HBV all the respondents heard about these two pathogens before interview. A very high proportion (123/143, 86%) of the respondents knew the different mode of transmission; however small proportion (8/143, 5.6%) claimed that HIV and/or HBV were not preventable infections. Among all the interviewed workers only 50.3% (72/143) were knowledgeable regarding the symptoms of HIV/HBV and very small proportion (51/143, 35.7%) knew the possibility of the association between HIV and other sexually transmitted infections.

Knowledge about measures to prevent HIV and/or HBV at the workplace:

This was an open question to mentioned three measures for HIV and/or HBV prevention, 77.6% (111/143) of all the workers mentioned these measures. Interestingly less than half of the respondents (46.9%, 67/143) mentioned that they always wear gloves when get in contact with the patient blood (eg: insertion of intravenous line) and likewise only 49% (70/143) of the workers recapped the needle after its use.

In this study awareness of the possibility of HIV and other STIs association, awareness of the measures for HIV and HBV prevention, recapping of the needle after its use, wearing gloves when get contact with patient's blood and status of vaccination against HBV were significantly varied among the different health care workers, table 1.

Discussion

The findings of this study showed that the knowledge about the measures for HIV-HBV prevention, management of the needle after its use and wearing gloves when get contact with patient's blood was low among non-MBBS workers. Very few health care workers claimed that HIV and/or HBV were not preventable infections. Knowledge about the mode of transmission, the diseases, infectiosity and safety precautions are the factors that predicted the universal precautions for the blood borne infections [4]. We recently reported high prevalence rate of transfusion-transmissible infectious diseases among blood donors in this hospital [9]. Moreover it has been reported that the rates of viral hepatitis infections proportionally related to the exposure to the infected persons [10] thus it is very important for key person to apply the implementations necessary for prevention of the health providers. It is not surprising that the MBBS were more knowledgeable than the dispensers and housekeepers because ideally the

MBBS practitioners are expected to have good understanding about the risk of infectious diseases. Our finding is unlike other observation in Pakistan where higher level of awareness and knowledge about the risk of blood borne infectious diseases had been reported among both residents and health care providers [11]. Studies carried out to assess the knowledge and awareness of blood borne diseases among medical students at Karachi, Pakistan reported that 87% of the students knew that wearing gloves and 98% knew safe disposal of sharp waste protects against these infections [12], likewise study in 7 Indian rural hospitals directed at assessing HIV related knowledge among health workers showed that 67.6% wore gloves when there was possibility to get contact with patients' blood, and 60.2% didn't recap the needles[13] . Many reasons could be cited for low level of awareness among the participants in our study; most of the workers did not have any formal professional qualification and the lack of workshops that aware the workers about the risk of these infections and how to make precautions for prevention. This could be due to the defect in the curriculum addressing the safety of the health care providers in our country or even implementations of polices that participates in occupational safety.

One of the limitations of this study is relatively of small size therefore it would be better to include multiple health facilities in different parts of Sudan aiming to draw very solid conclusions.

Conclusion

In this study our health care workers have low level of knowledge regarding HIV and HBV and their compliance to universal precautions was very poor. Thus at present, in our setting without a program for occupational safety the health care workers are going to face an epidemic of blood borne infectious diseases.

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Conflict of interest:

The authors have no conflict of interest to report.

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Table1. Comparison of the awareness and universal precautions regarding HBV and HIV infections among health care workers, eastern Sudan:

Variables	Prescribers (N=46)	Dispensers (N=75)	Housekeepers (N=22)	P
Knew HIV-STIs association	46 (100)	40 (53.3)	4 (18.2)	0.00
Knew measure for prevention	46 (100)	55 (73.3)	10 (45.3)	0.00
Recapped the needle after use	40 (87)	23 (30.7)	7 (31.8)	0.00
Always wears gloves	34 (73.9)	18 (24)	15(68.2)	0.00
Vaccinated (HBV)	27(58.7)	36(48)	5(22.7)	0.02

Data was shown as number (%) as applicable

Abbreviations: HIV=human immunodeficiency virus, STIs=sexual transmitted infections, HBV=hepatitis B virus.