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Research Article

Occurance of Some Blood Borne Viral Infection and Adherence to Universal Precautions among Laboratory Staff in Federal Teaching Hospital Abakaliki Ebonyi State

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Abstract

Blood borne infections are microorganisms that are carried in human blood and can cause disease in people. The occurance of some blood borne infection and adherence to universal precautions among laboratory staff in Federal Teaching Hospital, Abakaliki was studied and orally informed consent was obtained from the staff. A total 100 subjects comprising of 64 males and 36 females between the age of 21 to 40 years were diagnosed for HIV, HBV and HCV. This was done using simple rapid kits out of the 100 subjects studied only one tested positive for HCV (1%) which was not statistically significant (P>0.05). The staff adhere to universal precaution except wearing of eye protective glasses. The age and gender had no statistical significant. Development and implementation of comprehensive infections prevention and control programme should be ensured in all laboratory facilities.

Keywords: Some blood borne viral infection; Adherence to universal precautions; Laboratory staff; Federal teaching hospital abakaliki

Introduction

Blood borne infections are caused by pathogenic microoganisms that are present in human blood and can cause disease. Blood borne infection(s) can be spread through contamination by blood and other body fluids. In Ebonyi State, there is paucity of data on occurrence of blood borne infections [1]. Blood borne virus infections was recognized as an important hazard since 1960s and in 1972 the Rosenheim report was commissioned which give birth to the department of health (DOH) and it includes a set of guidelines for the control of hepatitis B infection. Further, control of hepatitis C and immunodeficiency virus was equally reported.

Blood borne infections and other forms of contamination give rise to universal precaution. Universal precautions are a set of guidelines that aim to protect laboratory staff, patients and other health care worker from blood borne infection. Exposure to blood borne pathogens can occurs through many mechanisms, Needle sticks, being splashed with blood or body fluids on the mucous membrane (the mouth, eyes and nose), even in some cases human bites [1].

In 2009 CDC [2] recommended that universal precautions be renamed standard precautions, which combine the major feature of the universal precautions and body substance isolation (BSI),the precautions apply to all body fluids including blood, secretions and exertions(except sweat)regardless of whether or not they contain visible blood, skin that is not intact, mucous membranes, any unfixed tissue or organ (other than infect skin) from human living or dead, human immunodeficiency virus (HIV), hepatitis B (HBV) or hepatitis C (HCV) containing culture medium or other solutions. Under the standard precautions, blood and body fluid of all patients are considered potentially infections for HIV, HBV, HCV and other blood borne pathogens. Standard precautions is regarded as an effective means of protecting laboratory staffs, patients and the public thus reducing laboratory acquired infection. Standard precautions are designed to prevent laboratory staffs from exposed to potentially infected blood and body fluid by applying the fundamental principles of infection control through hand washing utilization of appropriate protective barriers such as gloves, mask, gown, laboratory coat and eye wear [3]. In addition the standard precautions stipulate that laboratory staffs and health care workers take precautions to prevent injuries caused by needle, scalpels and other sharp instrument or devices during procedures and disposal [2]. The practice of standard precautions is being widely promoted to

protect laboratory staffs from occupational exposure to blood and body fluid and consequent risk of infection with blood borne pathogen. Laboratory staffs are potentially exposed to blood borne and other infections through contact with body fluid while performing their duties [4].

Aim

To determine the occurance of some blood borne viral infections among laboratory staff in Federal teaching Hospital, Abakaliki.

Materials and Methods

Study area

The study was carried out in Federal Teaching Hospital Abakaliki, Ebonyi State. Abakaliki is one of the major cities in the South-Eastern part of Nigeria and the capital of Ebonyi State which is located at the lower belt of the Niger. It lies between 6 20 49N and 80 6 llE. The common climate is tropical and the vegetation characterized is predominantly semi-tropical rain forest an average annual atmospheric temperature of 30 the hospital is located within Abakaliki metropolis.

Study design

This research work was done in Federal Teaching Hospital Abakaliki among laboratory staff working in the laboratory facilities and was carried out at Federal Teaching Hospital Abakaliki (FETHA 1). Informed consent was obtained from each staff orally before conducting test. Their use of personal protective equipment was assessed.

Study subjects

A total of 100 subjects comprise of 64 males and 36 females between the age of 21 to 40 years was used for this study.

Sample Collection

2mls of blood was collected from each subject using the standard procedure into a clean, and sterile dry plain test tube.

Statistical Analysis

Data were expressed as percentage. Chi-square test was used to established relationship between the observed and expected. The statistical package used was SPSS 20 for windows. Statistical significance was set at P<0.05.

HIV (Immunodeficiency Virus) Test

Method

Using Simple Rapid kit (National Algorithm -serial testing technique).

Procedure

The kit is labelled with laboratory staff identification number. The protective foil is removed. Four drops of serum is applied to the absorbent pad. Results are read after 15 minutes [5].

Hepatitis B Virus (HBV) Test Method

Simple Rapid Kits (Abon)

Procedure: The test strip is labelled with the laboratory staff identification number. The protective pouch is removed. Three drops of serum is applied using pasture pipette onto the absorbend pad. Result are read after five minutes and within 10 minutes [5].

Hepatitis C Virus (HCV) Test Method

Simple Rapid Test kits (Abon)

Procedure: The test strip is labelled with laboratory staff identification number.The protective pouch is removed. Three drops of serum is applied using pastauer pipette onto the absorbend

pad. Results are read after 5 minutes and within 10 minutes [5].

Result

A total of 100 laboratory staff comprising of 64 male and 36 female between the ages of 21 to 40 years were recruited in this study. HIV, HBV and HCV was conducted on the staff VI2-V12 their adherence to universal precautions. The result shows that only 1 staff had HCV (1.56%). Which was not statistically significant (P>0.05). The staff was free from HIV and HBC and HCV. The adherence to universal precaution was assesed and it was discovered that eye glass was occasionally used probably if there is case of lassa fever. Other PPES was available and 80% adhered it. Table 1: shows the prevalence of HIV, HBV and HCV among the laboratory staff in FETHA according to gender. Table 2: shows the prevalence of HIV, HBV and HCV among laboratory staff in FETHA according to age. The difference in the rate of infection in both gender and age was not statistically significant (P>0.05).

Table 1: Prevalence of HIV_3 HBV and HCV among laboratory staff in FETHA according to gender.

Gender	Number of Subject	Prevalence HIV(%)	Revalence HBV(%)	Revalence of HCV (%)
MALE	64	0 (0.00)	0(0.00)	1(1.56)
FEMALE	36	0 (0.00)	0(0.00)	0 (0.00)
TOTAL	100	0(0.00)	0 (0.00)	0 (0.00)

Discussion

Blood borne infections are caused by pathogenic microorganisms that are present in human blood and body fluid and can cause disease. Blood borne infections and other forms of contamination give rise to universal precaution. Universal precautions are a set of guidelines that aim to protect laboratory staff and other health care worker from blood borne infection. This study was therefore carried out to determine the occurance

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of some blood borne infection among laboratory staff and also to determine the sex that the blood borne infection occurs more. Based on the finding it showed that there were high level of knowledge and practice of the standard precaution among the laboratory staff [5].

Table 2: Prevalence of HIV, HBV and HCV among laboratory in FETHA according to age.

Age	Number of subject	Prevalence of HIV(%)	Prevalence of HBV(%)	Prevalence of HCV(%)
21-25	9	0 (0.00)	0 (0.00)	0 (0.00)
26-30	17	0 (0.00)	0 (0.00)	1 (5.88)
31-35	38	0 (0.00)	0 (0.00)	0 (0.00)
36-40	21	0 (0.00)	0(0.00)	0 (0.00)
<40	15	0 (0.00)	0(0.00)	0 (0.00)
Total	100	0(0.00)	0 (0.00)	1 (0.01)

However, eye protective gloss was occasionally used. This agrees with the study conducted among laboratory staff in India which showed low compliance. Furthermore, the negativity of the result of HIV and HBV among the laboratory staff may probably be due to low infection among patient attending the hospital and in the area. Also the laboratory staffs tend to be exposed knowledgably to universal precautions on sample and patient landing.

Conclusion

Laboratory staffs are potentially exposed to blood borne and other injections through contact with body fluids during the curse of performing their duties. Therefore blood and other with body fluids from patients are hazardous to those who provide patient care. Occupational safety of laboratory staffs in developing countries are often neglected in spite of the greater risk of infection low level awareness of the risks associated with organisational support for safer practices.

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