

SEROPREVALENCE OF HEPATITIS B SURFACE ANTIGENEMIA AMONG HEALTH CARE WORKERS IN A NIGERIAN TERTIARY HEALTH INSTITUTION

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ABSTRACT

Objective: The aim of this study was to determine the seroprevalence of Hepatitis B surface antigenaemia among the health care workers at the Federal Medical Centre, Ido-Ekiti, Nigeria.

Design and Method: The study was carried out on all the staff members in the employment of the Federal Medical Center, Ido Ekiti, Nigeria as at 30th April 2003. Data were collected by administering a set of questionnaire to every member of staff. Blood samples (3mls) were taken from the left cubital fossa of all the respondents and Hepatitis B surface antigen status determined using the agglutination kits manufactured by Biotech Laboratories USA.

Results: A total of 420 staff members were screened. 168 (40%) were males while 252 (60%) were females. Only 18 were found to be positive for Hepatitis B surface antigen giving a prevalence of 4.3%. 9 (50%) of those that were positive for Hepatitis B surface antigen were ward maids/attendants, 6 (33%) were nurses, 2 (11%) were administrative staff and 1 (6%) was a health record staff.

Conclusion: Health care workers are at increased risk of having hepatitis B infection. Health education should be carried out routinely in our hospitals to raise the awareness level among the hospital staff and standard safety measures such as sharps policy should be adopted in the handling of blood products and sharps.

Key words: Hepatitis B surface antigen and Health care workers (Accepted 20 January 2007)

INTRODUCTION

Hepatitis B virus (HBV) infection with its associated sequelae is a disease of major public health importance worldwide¹. HBV is a global public health problem with approximately 400 million people chronically infected^{1,3}. HBV infection is endemic in the developing world occurring more in early childhood⁴. This early infection will lead to an increased carrier rate with its attendant complications of chronic hepatitis, cirrhosis and hepatocellular carcinoma⁵. Each year it carries more than 500,000 deaths worldwide. In a cross sectional study among blood donors in Ilorin, in the Middle belt area of Nigeria a high HBsAg prevalence rate of 23.4% was found⁶. Another study in Addis Ababa (Ethiopia), among hospital personnel showed HBsAg prevalence rate of 9.02%⁷. Outcome of acute infection ranges from asymptomatic subclinical infection (70%) and symptomatic acute

hepatitis (30%) to fulminant hepatitis failure (0.1-0.5%)⁸. A proportion of people infected with HBV (5-10% among adults) progress to chronicity, defined as persistence of infection for more than six months⁹. The rate of chronicity is much higher among neonates and children. The spectrum of chronic HBV infection ranges from asymptomatic carrier state to chronic hepatitis B, liver cirrhosis and hepatocellular carcinoma. HBV infection is common in Nigeria and is a significant cause of mortality and morbidity¹⁰. Health workers in Nigeria are particularly at increased risk because Nigeria is a holoendemic area, with HBV carrier rate of 15-37%¹¹. It is estimated that about 12% of the total population of Nigeria are chronic carriers of HBsAg^{12,13}. The magnitude and clinical consequences of HBV such as chronic hepatitis B, liver cirrhosis and hepatocellular carcinoma make a strong case for its prevention and treatment. This study therefore sets out to determine the seroprevalence of hepatitis B surface antigenemia, (an important occupational disease) among the health care workers in a Nigerian tertiary healthy care institution.

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MATERIALS AND METHOD

A serologic survey was conducted for hepatitis B surface antigen (HbsAg) in a total of 420 health care workers at the Federal Medical Centre Ido- Ekiti, Nigerian as a first step in immunizing the whole hospital staff for Hepatitis B virus, using agglutination kits manufactured by Biotech Laboratories USA.

A set of questionnaire was administered as regards their age, gender, and history of accidental needle pricks, hepatitis B virus vaccination, department, blood transfusion, jaundice and history of previous hepatitis infection etc. Data generated were subjected to comparative statistical analyses using the statistical program SAS version 6.12 for the various variables

RESULTS

Out of the 420 staff members screened, 166 (40%) were males while 252 (60%) were females given a M: F ratio of 1:1.5. Three hundred and two (72%) of the population were married while 118 (28%) were singles given a ratio of 2.5:1. The age distribution and HbsAg seropositivity of the studied population is as show in Tale 1. Only 18 were found to be positive for Hepatitis B surface antigen given a prevalence of 4.3%. Table 2 shows the distribution of HbsAg by department/profession. Nine (50%) of those that were positive were ward maids /attendants, 6 (33%) were nurses, and 2 (11%) were administrative staff while 1 (6%) was a health record staff. Three (17%) of the positive cases had needle prick injuries. On the whole, 99 (23.6%) admitted to have had needle prick injuries at one time or the other. Seventeen (4%) of the population studied claimed to have had HBV immunization at one time or the other but none of them tested positive, 20 (4.8%) gave a previous history of blood transfusion while 19 (4.5%) a positive history of jaundice. None of those with previous blood transfusion tested positive for HBsAg.

Table 1: Age Distribution of Hbsag Seropositivity

Age group	No	No Positive	%Positive
20-24	21	2	11.1
25-29	122	6	33.3
30-34	102	2	11.1
35-39	77	5	27.8
40-44	49	1	5.6
45-49	24	2	11.1
50-54	15	0	0.0
55-59	7	0	0.0
60-64	3	0	0.0
	420	18	100.00

Table 2: HBsAg seropositive distribution by profession/department

Profession/ Department	No	No Positive	% of Positive Staff
Physicians	10	0	0.0
Nursing	86	6	33.3
Administrative/Works	158	2	11.1
Pharmacy	17	0	0.0
Laboratory	13	0	0.0
Theatre	9	0	0.0
Radiology	10	0	0.0
Community Health	8	0	0.0
Ward Attendant	87	9	50.0
Dental	5	0	0.0
Records	12	1	6.6
Physiotherapy	5	0	0.0

DISCUSSION

Health care workers are known to be prone to infection with HBV¹⁴. High endemicity of HBV is defined as an HbsAg prevalence of more than 7% in the population¹⁵. The overall prevalence in this study was 4.3%; this is closely related to the prevalence of 5.5% found in the study by Martin and colleagues¹⁶. The result obtained showed a higher prevalence among the ward attendants 10.3% (9 of 87) and nurses 7% (6 of 86) than among physicians (0 of 10). This may be ascribed to exposure to blood and blood related products and accidental needle prinks in this group of people. This result is similar to that obtained by Hakre¹⁷. The entire ward attendants who tested positive had worked at one time or the other in the laboratory, theatre, medical and surgical wards. Also, all the nurses that tested positive had also worked in either the General Outpatient Department (GOPD), medical and surgical wards.

Contrary to the various reports¹⁸⁻²¹ that found higher prevalence of HbsAg among the dental, surgical and laboratory personnel, this study did not find any of the staff of these departments positive for HbsAg. This may be due to the small staff strength of these departments and probably on high degree of awareness among them. Duration of service in the hospital was an important predictor of HbsAg seropositivity and the prevalence of seropositive subjects peaked between 2-3 years of employment, when compared to subjects who worked 1 year or less. Another factor recognized that may have affected the prevalence was the way hospital wastes were being disposed coupled with ignorance on the part of the attendants. The two administrative staff

and one health record staff that were positive had worked as attendants at GOPD and the theatre before their conversion to clerical officers and posted out to their present respective departments.

CONCLUSION

This study reaffirms the importance of health care workers being immunized with hepatitis B vaccine. Health education should be carried out routinely in the hospitals to raise the level of awareness of all the cadres of hospital staff to this infection, and standard safety measures e.g sharp policy should be adopted in handling of blood and blood products and sharps.

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