

SEROPREVALENCE OF HEPATITIS B VIRUS AMONG HUMAN IMMUNODEFICIENCY VIRUS PATIENTS ATTENDING ANTIRETROVIRAL TREATMENT (ART) CENTRE, AGBOR, NIGERIA.

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ABSTRACT

The prevalence of some infectious diseases (Hepatitis B) has changed with the incidence of HIV/AIDS pandemic. This study was carried out to determine the prevalence of hepatitis B virus (HBV) infection in human immunodeficiency virus (HIV) infected patients undergoing treatment in the Antiretroviral Treatment Centre Agbor, Delta State, Nigeria. A total of 538 HIV infected subjects were recruited for this study, comprising 156(29%) males and 382(71%) females aged between 1-70 years and were screened for Hepatitis B. Of the 538 samples, 12(7.7%) males and 8(2.0%) females were sero-positive for HBV. The highest seroprevalence (5.9%) was observed in the group aged 46-60 years, followed by the age group of 1-15 years (4.0%) and 31-45 years (3.5%). The lowest prevalence of (0%) was observed in the group aged 61-70 years. The difference in seroprevalence between the groups aged 1-15 years and 46-60 was statistically significant ($P < 0.001$). Enlightenment campaigns should be intensified as well as immunization against Hepatitis B in order to achieve Hepatitis B free population.

Key words: Hepatitis, Immunodeficiency, Seroprevalence, seropositive.

INTRODUCTION

The prevalence of several diseases has changed with the advent of human immunodeficiency virus (HIV) pandemic. The incidence and prevalence of some infectious diseases that were hitherto on the decline are now experiencing an upward trend (Sullivan *et al.*, 2000). Hepatitis B virus (HBV) is a very important potentially lethal and presently treatable disease. This on its own may be a significant cause of morbidity and mortality (Fance and Lave, 1998). The prevalence rate of HBV infection has been shown to be higher in HIV infected persons than the general population (Ayola, 1987; William, 1997). The presence of hepatitis B virus in HIV infected patients may pose serious problem to them. The prevalence of HBV varies significantly from one geographical region to another. It is highly endemic in South East Asia, China and sub-Saharan Africa with carrier rates of 8-20 percent (William, 1997). In these regions, 70-90% of the population have been

reported to show serologic evidence of previous and current HBV infection of between 0.5 -2.0 percent. In Nigeria children, a prevalence of percent has been reported (William, 1997). Amongst intravenous drugs users and HIV infected persons the prevalence is higher (Fance and Lave, 1998; Eze *et al.*, 2007). Studies have been done in Nigeria to determine the prevalence of HBV in the general population especially amongst certain risk groups such as Health workers, Blood donors, dialysis patients, prisoners and HIV, but no study has been done amongst HIV infected persons in Agbor, Delta state. The paucity of reports from this region warrants a closer study of these diseases in this environment. Therefore the objective of this study is to determine the seroprevalence of hepatitis B infection amongst HIV infected persons in Agbor, Delta State, Nigeria.

MATERIAL AND METHODS

Patients

The study was carried out at the Antiretroviral Therapy centre (ART), Central hospital Agbor, Delta state, Nigeria, between March 2011 and August 2011. The Antiretroviral therapy centre caters for referred HIV patients across the state especially in Delta North and some parts of

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Edo state. Its coverage serves a population of over four thousand people. All HIV infected persons aged one year and above (1-70) of either sex between 1st march and 31st August 2011 in the ART centre were included in this study. Pre-test and post-test HIV counseling were done for all patients, blood samples were taken and tests were carried out with the informed consent of all patients.

LABORATORY METHODS

Two assays were done for each patient; HIV screening by Rapid test methods using Determine and confirmed by Unigold and Statpack and Hepatitis B virus (HbSAg) screening.

HIV TEST

The test for HIV were done using Determine by Abbott and Unigold by Trinity Biotech as recommended by the Federal Ministry of Health of Nigeria (FMOH) in the National Algorithm 1

HBsAg

The screening tests for HBsAg were done using the first Response HBsAg card test by premier medicare Corporation India.

RESULTS

A total of 538 subjects were involved in the survey, 156(29%) were males and 382(71%) were females. Of the 538 samples collected 20(3.7%) were seropositive [12 (7.7%) males and 8 (2.0%) females] as shown in table 1. Table 2 shows the seroprevalence of HbsAg antibodies in the different age groups. The highest seroprevalence (5.9) was observed in groups aged 40-60 years, followed by the group aged 1-15years (4.0%) and 31-45 (3.5%). The lowest prevalence (0%) was observed in the group aged 61 years and above. The difference in seroprevalence between the groups aged 46-60 and 1-15 years was statistically significant ($P < 0.001$) as was the difference between the groups aged 31-45 and 46-60 years ($P < 0.001$)

Table 1: Seroprevalence of HBsAg infection in the study

Sex	No tested	No. (%) Positive	No. (%) Negative
Males	156	12(7.7)	144(92.3)
Females	382	8 (2.0)	375 (98.0)
Total	538	20(3.7)	518 (96.3)

Table 2: Seroprevalence of HBsAg antibodies among different age groups

Age group	No. Samples	Males		Females	%
		No. (positive)	No. (Positive)	Total positive	
1-15	25	13 (1)	12 (0)		4.0*
16-30	174	30(3)	144 (3)		3.4
31-45	260	76 (6)	184 (3)		3.5
46-60	68	31 (2)	37 (2)		5.9*
61-70	11	6 (0)	5 (0)		0.0
Total	538	156 (12)	382(8)		3.7

*significant.

DISCUSSION

It is a known fact that many HIV-Positive individual have also been exposed to hepatitis B virus (HBV). Studies suggest that as many as 70%-90% HIV positive people have evidence of past or current HBV infection (Taura *et al.*, 2008). Since majority of patient spontaneously clear HBV without treatment, however the rate of active infection is much lower. From our study, the results showed a percent prevalence of 20 (3.7%) HBsAg among the patients attending Antiretroviral Treatment Centre

(ART), Agbor. This is low when compared with the reports of Eze *et al.* (2007) in Benin City of 10.8%, Taura *et al.* (2008) in Kano of 6.0%. This low level can be attributed to increase awareness. In our study, we observed that males are more infected with HBsAg with a prevalence of 12(7.7%) than females 8(2.0%). This is in contrast to the work of Taura *et al.* (2008) who reported otherwise. The increased number of seropositive values recorded may be attributed to the increased socio-cultural sexual activities common to the males

(Ophori *et al.*, 2010). Table 2 shows the seroprevalence of HBsAg antibodies among different age groups. The highest seroprevalence (5.9%) was observed in the group aged 46-60 years, followed by the groups' age 1-15 years (4.0%). These increased prevalence can be attributed to non-immunization in the age group 46-60 years and immunization failure or transplacental transmission in the aged group 1-15 years. The lowest prevalence (0.0%) was observed in the group aged 61 years and above. This can be attributed to low sexual activities of this aged group. The prevalence of hepatitis B is not significantly higher in HIV positive individuals than in the general population when compared with other studies. It is pertinent to note however that the prevalence of hepatitis B in the general population is also quite high (Eze *et al.*, 2007). This highlights the need for prevention of this disease. Thus all blood for transfusion should be screened for these infections and standard infection control measures (Universal and standard precaution) should be emphasized in all levels of population and especially among healthcare workers in our health facilities, in order to achieve HBsAg free population.

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