

Seropositivity of Hepatitis B and C among Blood Donors in Private Laboratories in Lagos Nigeria

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ABSTRACT

Background: Difficulties in meeting demand of blood transfusion by government hospitals have dictated the need for patronizing laboratories by both government and private hospitals. **Objective:** The study was undertaken to ascertain the prevalence HBsAg and hepatitis C Virus of blood donors in private laboratories in Lagos Nigeria. **Result:** A total of 315 participants were used for this work 298 were male (94.6%) Seventeen (17) 5.4% were females. 4.8% tested positive for HBsAg. Male constitute 80% prevalence of the positive group. Analysis of gender related prevalence of HBsAg showed that prevalence was higher in females (17.3%) than males (4%). prevalence of 1.5% was Hepatitis C (HVC Ab). positive participants are in the age range of 21-30. **Conclusion:** The result revealed a decline in prevalence of viral hepatitis among voluntary blood donors in Lagos Nigeria.

Key words: hepatitis B virus, hepatitis C virus, blood donors

1.0 INTRODUCTION

Hepatitis is medical condition defined by the inflammation of liver. It is characterized by the presence of inflammatory cells in the tissues of the organs. (Gimson A. E 1996). It may occur with limited or no symptoms. It leads to jaundice, anorexia and malaise. Hepatitis is cause by virus, toxins from alcohol, medications, industrial organic solvents, plants, and auto immune disease. There five main types of hepatitis that are caused by the virus A, B, C, D, and E. Hepatitis A&E are caused by eating infected food or water i.e. viral infected foods or water, anal-oral contact during sex. Nearly everyone who develops HAV makes a full recovery. It does not lead to chronic disease. Hepatitis B it is caused by HBV and is spread by contact with infected blood, semen, and other body fluids. It is contacted through unprotected sexual intercourse, infected sharps and syringes, breast milk and bite by infected person A survey conducted in Lagos and Bauchi showed a prevalence rate of Hbs Ag 13.3% (Mahoney and Kame 1999). A prevalence of 8.3% was reported in Kaduna (Ibrahim 2005). A study of prevalence of hepatitis C virus among blood donors in Lagos in 2006 revealed a prevalence of 8.4% (Ayoola et al 2006). A prevalence of 14.3% was obtained for hepatitis B among HIV infected blood donors in Jos. (unike C. J. 2005). While a prevalence of 13.4% was obtained in apparently healthy blood donors in Lagos (Abdusalami 1986). . Hepatitis C ,is a Member of flavivirus have been discovered to play a primary role in post transfusion hepatitis, proclivity to establish long standing persistent infections, association with chronic cirrhosis and hepatocellular carcinoma. (Stanley and Edwin, 1995; Coursaget et al., 1990) it is spread through direct contact with blood of infected person, via blood and blood product, parenterally, from mother to child and by sexual contact (Alfredo et al., 1990).). Hepatitis C infects About 2 billion people worldwide including 400million chronically infected cases (schemers GB. 2009). It is hyperepidemic in sub sub-Sahara Africa and Asia. There are estimated 170 million Hcv carriers' worldwide. (Lancet infects. Dis. 2002).

The endemicity in the developing parts of the world is high with majority of people being seropositive. Most people get infected at birth or in early childhood. In Nigeria, the prevalence rate of HCV varies between 5.8-12.3% (Halim and Ajayi2000; Bojuwoye, 1997; Aliyu, 1996).. Hepatitis B and C pose a major public health problem worldwide. This is worsening in developing countries by poor economic status where patients are made to afford the costly therapy. (Waheed .u.2009

Everywhere in the world, transfusion of human blood is an essential therapeutic procedure because it has no genuine substitution. The field of transfusion medicine has encountered a huge problem in providing safe blood and blood products; therefore there is a need to improve testing for transfusion transmissible diseases and the selection of blood donors because blood transfusion can result in transmission of infectious diseases. Transmission of hepatitis via blood and blood products has made provision of safe blood difficult (olokoba A.B 2003). Therefore screening of transfused blood is absolute necessity.

Donor blood safety gained serious importance since the documentation of blood born viral infection in donor blood; Blood safety is considered in biological and immunological aspects, improvement in the provision of safe blood in sub-Saharan Africa has been a major concern for various health authorities. However blood should be transfused when it becomes absolute necessity.

The aim of this work is to find out the prevalence of hepatitis B and C among voluntary donors in private laboratories in Lagos.

2.0 MATERIALS AND METHOD:-

A total of three hundred and sixty eight voluntary donors between the ages of 21-68 from voluntary and commercial donors in private laboratories in Lagos were Screened for anti HCV and HBsAg from February to November 2011 .5ml of blood samples were collected and centrifuged at 3000 rpm for 10mins the plasma was screened for HBsAg using enzyme immunoassay technique. Hepatitis C was screened by ELISA techniques for the determination of anti- Hepatitis C V Ab.

3.0 RESULTS AND DISCUSSION: -

A total of 315 donors were used for this work. 298 males (94.6%) Seventeen (17) 5.4% were females. Donors used were in the age (20-70) years. The average age of donors used was thirty (30.2±3.0). majority of the donors were in the age 21-30 this is in agreement with work done by olokooba et.al (2009) among voluntary donors in yola north eastern Nigeria, where they discovered an age range of 18-61 and a mean of 31.3 years and modal range of 20-29 years.

It also showed similarity with the work of Khan et al (2002) who found that their blood donors were in the age range of 18 to 60 years. It is also similar to the findings of Muktar et al (2005) in Zaria, Northwestern, Nigeria in which their donors had a mean age of 33 years even though their age ranged from 19 to 42 years. However the donors in Jos, North-central, Nigeria were in the age range 21 to 50 years according to Egah et al (2004).

Most of the donors in this work are male this is similar to work of olokoba earlier cited where 96.% of donors were male and equally close to the 95% in the study of Egah et al (2004). Muktar et al (2005) found that 98% of their donors were males while Nwokediuko et al (2007) in their study in Enugu, South-eastern, Nigeria found that 91.8% of their donors were males and Ayolabi C.I (2009) recorded 97% among donors in Lagos. However all the donors were males in the study of Elfaki et al (2008) among the Sudanese.

Fifteen donors 15 (4.8%) tested positive for HBsAg.

This is lower than prevalence of 14.6% recorded in Jos (Uneke 2005) but higher than 2.4% (Olokooba 2009) higher than the 1.1% found by Ejele et al (2005) in the Niger Delta region of Nigeria. It is also higher than the 1.2% found by Kagu et al (2005) in North-eastern, Nigeria. It is higher than 2.2% found by Bhatti et al (2007) in Pakistani donors. higher than 4.0% in the work of Abdalla et al (2005) in Kenyan donors; the 8.3% in the work of Muktar et al (2005); and the 8.8% found by Matee et al (1999) in Tanzanian donors.

Furthermore, the HBV infection rate of 2.4% is lower than 14.6% recorded in Jos in 2006 (Uneke 2005) lower than 10.0% found by Elfaki et al (2008) in Sudanese blood donors; the 10.6% in the work of Esumeh et al (2003) in South-south, Nigeria; and the 13.2% found by Fasola et al (2009) in Ibadan, South-western, Nigeria. Analysis of sex-related prevalence of HbsAg showed that more males were infected than the females Twelve (12) 4.0% male and three (3) females 17.3%. This supports previous work findings that multiple sexual partnerships and promiscuity are habits occurring with higher frequency among males than females in Nigeria (UNSN 2001).

This may explain the higher incidence of HBsAg among the male population. The positive donors were in age ranges 21-30(7) and 31-40(8) the highest positive prevalence of 7.1% was recorded in age group 31-40 this agrees with the work of Oyelabi (2006) and Uneke (2005). This could be associated with sexual activity and intravenous drug use reported to be highest among Nigerians in their third decade of life (UNSN 2001).

The prevalence was higher in females (17.3%) than males (4%). This could be as a result of the sample size and the facts that women hardly donate blood in private laboratories. The other age group recorded 0%.

Prevalence among the positive group male constitutes 80% of the positive group. From our study two (2) participants tested positive to hepatitis C giving a prevalence of 1.5%. This agrees with the 1.5% found by Matee et al (1999) among blood donors in Tanzania.

The HCV infection rate in this study is however lower than 8.3% recorded among voluntary donors in Lagos Island, Nigeria, between January to November 2004 (Ayolabi et al. 2006). The 3.0% found by Ezeani et al (2006) in Southeastern, Nigeria; and the 3.7% found by Nwokediuko et al (2007). Furthermore, the HCV infection rate of 1.5% is lower than the 2.4% recorded in Yola (Olokoba et al.) 3.9% found by Esumeh et al (2003), the 4.2% in the work of Bhatti et al (2007); and the 6.0% found in the work of Egah et al (2004).

This figure is higher than the 0.2% found among voluntary blood donors in Nairobi in the work of Abdalla et al (2005); the 0.5% among donors in Niger-delta area of Nigeria. Ejele et al (2005); However Elfaki et al (2008) found no case of HCV infection in the 260 Sudanese blood donors they studied.

5.1.1

The wide differences in the HBV and HCV infection rate among the voluntary blood donors in the different regions within and outside Lagos may be due to the differences in geographical locations, age range of donor patients, the period of time the studies were carried out, difference in sexual behavior use of drugs, Access to healthcare, Immunization practices, laboratory test reagents competence of laboratory personnel, government regulation and health facility monitoring.

5.1.2

CONCLUSION: The result revealed a decline in prevalence of viral hepatitis among voluntary donors in private laboratories in Lagos.

This cannot be unconnected with the regulatory and monitoring of blood transfusion by authorities of Lagos state government.

It is recommended that governments of south western states in Nigeria put in place effective monitoring facilities for safe blood transfusion if safe blood transfusion and 0% prevalence in viral hepatitis would be achieved in blood donors in Lagos.

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TABLE (i) AGE DISSTRIUTION OF HEPATITIS B AMONG DONORS IN PRIVATE LABORATORIES

AGE	NO OF PATIENTS (%) SCREENED	SEX DISTRIBUTION MALE/ FEMALE	NO OF POSITIVE	NO OF NEGATIVE
21-30	135(42.9%)	128(94.8%) 7(5.2%)	7(5.2%)	128(94.8%)
31-40	114(36.2%)	106(93%) 8(7%)	8(7.1%)	106(92.7%)
41-50	39(12.3%)	37(94.9%) 2(3.1%)	0(0%)	37(99.4%)
51-60	18(5.7%)	18(100%) 0(0%)	0(0%)	18(100%)
61-70	9(2.9%)	9(100%) 0(0%)	0(0%)	9(100%)

The table shows prevalence of hepatitis B surface antigen at every decade of life of voluntary donors

**TABLE ii
 INCIDENCE OF HEPATITIS B AMONG SEX**

SEX	POSITIVE	NEGATIVE	TOTAL
MALE	12(4.0%)	286(96.0%)	298
FEMALE	3(17.3%)	14(82.5%)	17
TOTAL	15(4.3%)	305	315

The table shows the prevalence of HBsAg among donors along gender distribution

**TABLE iii
 AGE DISTRIBUTION OF HEPATITIS C AMONG BLOOD DONORS IN PRIVATE LABORATORIES**

AGE	NO OF PATIENTS SCREEN (%)	SEX DISTRIBUTION MALE (%) / FEMALE (%)	NO OF POSITIVE (%)	NO OF NEGATIVE (%)
21-30	135 (42.9%)	128(94.8%) / 7(5.2%)	2(1.5%)	133(98.5%)
31-40	114 (36.2%)	106(93%) / 8(7%)	0(0%)	114(100%)
41-50	39 (12.3%)	37(94.9%) / 2(5.1%)	0(0%)	39(100%)
51-60	18 (5.7%)	18(100%) / 0(0%)	0(0%)	18(100%)
61-70	9 (2.9%)	9(100%) / 0(0%)	0(0%)	9(100%)

The table shows prevalence of hepatitis C virus antibody among blood donors at every decade of life

**TABLE iv
 INCIDENCE OF HEPATITIS C AMONG SEX**

SEX	POSITIVE	NEGATIVE	TOTAL
MALE	1(0.3%)	297(99.7%)	298
FEMALE	1(6.3%)	16(93.7%)	17
TOTAL	2(6.6%)	303(99.4%)	315

The table shows prevalence of hepatitis C virus among blood donors along gender distribution.

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