SEROPREVALENCE OF HIV AND HEPATITIS VIRUSES IN DIRECTED BLOOD DONORS: A PRELIMINARY REPORT.

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Abstract.

Background: The seroprevalence of HIV and Hepatitis B viruses in directed blood donors is lacking in this environment. Some patients anticipating the need for transfusion have turned to family members and friends as a means of protecting themselves against these transfusion-transmissible infections.

Aims: To determine the seroprevalence of HIV and Hepatitis B viruses in directed blood donors in Nguru and also to see if there is co-infection of these viruses in this category of donor population.

Method: This is a prospective study carried out at the blood bank of the Federal Medical Centre Nguru, Yobe State between January 2005 to July 2005. Consent were obtained from all prospective donors before collection of blood sample for the screening.

Results: Two hundred and fifty four prospective directed blood donors were screened for the presence of HIV and Hepatitis B viruses in their blood. Twenty two (8.7%) of the directed blood donors were positive for HIV while 3 donors (1.2%) were positive for Hepatitis B virus. Only 1 (0.4%) was positive for both HIV and Hepatitis B viruses.

Conclusion: Directed blood donors are not safer than homologous blood donors. There is the need to screen all prospective blood donors irrespective of the donor category for all transfusion-transmissible infections so as to prevent the spread of these viruses through blood transfusion.

Keywords: Seroprevalence, HIV& Hepatitis B, Directed blood donors.

Introduction.

The human immunodeficiency virus (HIV) the causative agent of acquired immunodeficiency syndrome (AIDS) and Hepatitis B virus the causative agent of Hepatitis

are both potentially infectious agents that can be acquired through blood transfusion [1,2,3.] Other modes of transmission of HIV include sexual intercourse, perinatal contact and exposure to contaminated piercing objects and needles [4,5,6]. Hepatitis B can also be acquired through contaminated needles, piercing objects and harmful traditional practice of scarification, uvulectomy, circumcision and tatooing [7]. These viruses cause fatal, chronic and life threatening disoders.Transmission of these viruses through blood transfusion still remains a challenging problem to control [1].

Most blood banks in Nigerian hospitals maintain active donor facilities from homologous blood donors. However, with the advent of HIV/AIDS pandemic, autologous or self-donation is gaining popularity because of the risk of transfusion-transmissible infections in homologous blood. Homologous donations can be voluntary, commercial (paid donors), family replacement and directed donors [8]. Some patients, anticipating the need for transfusion have turned to family and friends as a means of protecting themselves against transfusion-transmissible infections. Directed donations have been found to be no safer than transfusions from random homologous donations [9]. Federal Medical Centre Nguru, Yobe State is probably the only centre where patients rely solely on friends or family for blood donation. These peculier circumstances may be attributable to the fear of acquiring HIV infection through blood transfusion from commercial donors and refusal to voluntarilly donate for the fear of being screen for transfusion- transmissible infections. The aim of this study is therefore, to determine the seroprevalence of HIV and Hepatitis B virus in Directed blood donors in Nguru and also to see if there is co-infection of these viruses in this category of donor population.

Subjects and Methods.

This is a prospective study carried out at the blood bank of the federal Medical Centre Nguru, Yobe State between January 2005 to July 2005 (7 months period). Consent were duly obtained from all prospective directed donors after verbally explaining the aims of the study to them. All prospective donors went through the standard process of registration, brief interview to determine if they are elligible candidates for donation and brief physical examination before collection of blood sample for the screening.

HIV serology.

The 3rd generation rapid immunochromatographic test kit, SD BIOLINE HIV1/2 3.0 (a product of Standard Diagnostic, Inc, Korea) and Immunocomb^{R} II HIV-1 & HIV-2 Combfirm Bispot test kit was used for HIV screening and confirmation test respectively. The screening test were carried out following instructions manual provided by the Manufacturers.

HbsAg serology.

Donors were screened for HbsAg using the latex screening slide test (CAL-TECH DIAGNOSTIC, INC, Chino, California, USA)

by adhering strictly to the Manufacturers instructions. SPSS- Software version 11 was used for statistical analysis.

Results.

A total of 254 directed donors were bled and screened for both HIV and HBsAg.There were 241 (94.9%) males and 13 (5.1%) females. The median age for all the donors was 39 years ± 7.3 SD. Two hundred and nine (90.2%) were married and 25 (9.8%) were single. Twenty two (8.7%) of the donors were positive for HIV, while 3 (1.2%) were positive for HBsAg and Only 1 (0.4%) of the donors was positive for both HIV and HBsAg (Table 1). All three of the donors with positive HBsAg in their sera were married and the only donor with Coinfection was also married.

Table 1: Prevalence of HIV/HBsAg Positivity and Coinfection in Directed blood donors in Nguru.

Donors screened	HIV positivity	HBsAg positivity	Coinfection
254	22/254(8.7%)	3/254(1.2%)	1/254(0.4%)
Donors screened	HIV negativity	HBsAg negativity	Negative Coinfectio
254	232/254 (91.3%)	251/254 (98.8%)	253/254 (99.6%)

Discussion.

Blood transfusion is an essential part of modern medicine. If used correctly, it can save life. However, like all treatments, it carries the potential risk of transmission of infections, such as HIV, hepatitis viruses, syphilis, malaria, microfilaria and chagas disease [10]. Receiving blood transfusion from friends or relatives may often reduce the anxiety a patients may have about the safety and availability of blood . Regretably, such donors often conceal information about high-risk behaviors that will disqualify them from donating, and often donot realize that they forego donor confidentiality and may be legally liable if the recipient contracts any of the transfusion-transmissible infections [11].The prevalence of 8.7%, 1.2% and 0.4% respectively observed for HIV, HBsAg and Coinfection in directed blood donors calls for awareness among the general population. The prevalence rates observed in this study for HIV positivity in directed donors is comparable to commercial or paid donors [12,13,14]. This is contrary to the low prevalence rates observed among blood donors in other parts of the world where the awareness about the routes of transmission of HIV is known to most of their donor population [15,16]. The establishment of a well- organized blood transfusion service to co-ordinate proper donor selection and adequate screening of all donated blood for the presence of the transfusion- transmissible infections may help to prevent the spread of this virus via blood transfusion. Although Nigeria was classified among the group of countries highly endemic for Hepatitis B virus infection, low prevalence is

reported in this study among directed blood donors compared to commercial or paid donors [14,17,18]. This may be partly due to the different geographical location and some of the cultural attitudes of the study population. The prevalence of 0.4% reported in this study for coinfection with HIV and Hepatitis B virus in directed blood donors underscores the importance of further research to elucidate at molecular level the effect of dual infection in all categories of donor population. The fact that not all blood banks in Nigeria routinely screened their donors for all the transfusion-transmissible infections, donors that are rejected in one centre may find themselves donating blood in another centre that either don't have the qualified personnel or don't have the facilities to screen the donors. We therefore recommend the recently inaugurated board of the National blood transfusion centre to hurriedly enforce laws guiding blood transfusion in the country so as the reduce the spread of these transfusion-transmissible infections.

This study has shown that Directed blood donors are not safer than homologous blood donors. There is the need to screen all prospective blood donors irrespective of the donor category for all transfusion- transmissible infections so as to prevent the spread of these viruses through blood transfusion.

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