

Prevalence of HIV infection among blood donors in Kosti teaching hospital blood bank, Kosti –Sudan

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Abstract:

Blood transfusion is beneficial and safe for the recipient when it is performed in strict compliance with immunological and hygienic standards, and following a strict screening of donors.

This was a retrospective analysis of consecutive blood donors records covering the period between January 2014 and April 2014 at Kosti Teaching Hospital which is a tertiary care hospital.

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In the study group HIV positive donors were 8 donors (0.7%) and 1196 donors were HIV negative (99.3%). All donors were males.

Although we had low incidence of HIV among donors we need to improve our blood banks settings to make the screening results more accurate.

Key words: HIV, Blood donors, Kosti, Sudan

INTRODUCTION

Blood transfusion therapy is used among patients with severe anemia due to various medical, surgical or obstetric conditions, and in patients undergoing transplantation of an organ. Blood transfusion is beneficial and safe for the recipient when it is performed in strict compliance with immunological and hygienic standards, and following a strict screening of donors.

Sudan in the post secession era since 2011 has faced several socio-political changes. This included administrative subdivisions from 15 to 18 states with its consecutive health system administrative changes. Huge population movements occurred within and outside Sudan; about two million South Sudan returnees transited through White Nile and South Kordofan states and about half a million people have been displaced or severely affected by conflicts in the three protocol areas[1]. An estimated 46.5 % of the population lives below the poverty line[2].

Blood safety activities in Sudan are mostly governmentally funded (80%) and provided through either hospital-based or stand alone blood centers. Blood donors are either voluntary (45% of total donations) donors reached through outreach programs targeting youth in universities and donor societies and family directed donors at hospital level. A total of about 450,000 units of blood are collected annually and

all screened for syphilis, HBV and HCV. A new initiative through collaboration between Blood Bank System and SNAP was developed during this reporting period. Khartoum central blood bank unit (major contributor in national blood donation load) was selected to explore if donors are interested to know their blood screen results and thereafter develop a mechanism for those interested to receive confirmatory results on HIV.[3]

HIV surveillance and screening programs were established at Khartoum Teaching Hospital (KTH) following the first identified HIV case diagnosed in a hemophiliac boy in November 1987. As of December 1995, 15 cases of symptomatic HIV infection have been observed in Sudanese children (< or = 16 years) at KTH [4].

MATERIALS AND METHODS

This was a retrospective analysis of consecutive blood donors records covering the period between January 2014 and April 2014 at Kosti Teaching Hospital which is a tertiary care hospital. Kosti city is located in the White Nile State, central Sudan, 300 km from the capital city, Khartoum; with a population of 459.991 people. Blood donors were either volunteer or relatives or friends of recipients. The first step in the blood bank for the potential donors is taking past medical history and to do physical examination by a trained doctor. Individuals are required to answer panel of questions on socio-demographic data (age, education, residence, etc.), previous illness, and chronic disease, history of blood transfusion and history of jaundice. Those who are apparently healthy, their age range between 18 -65 year and their weights above 45 kg are qualified for donation. Five ml of blood were drawn from each subject, sera were separated, and tested for HIV, using rapid Dip-strip (manufactured in the UK by fortress diagnostic LTD).

The data were analyzed by SPSS. P value <0.05 was considered statistically significant.

Ethical approval for this study was provided by the director of hospital.

RESULT AND DISCUSSION

The study was done from January to April 2014 at Kosti teaching hospital blood bank which is the only blood bank that covers the West part of White Nile State. Kosti city is 360 kilometer distance from the capital Khartoum. A total of one hundred and two thousand four donors were studied.

In the study group HIV positive donors were 8 donors (0.7%) and 1196 donors were HIV negative (99.3%) figure 1. All the donors were male as in Sudan females will not donate blood routinely only in very special situations.

All the donors were between 20 and 55 years old , most of them between 20 and 40 years old representing 1128 donors (93.6%) and those between 41 and 55 years old were 76 donors(6.4%).figure2.

Table 1 showed that7(0.6%)of donors with HIV+ve were between 20 and 40 years old and only one donor(0.1%) with positive HIV and his age was between 41 and 50 years old. p.value =0.47.

Our study was aimed at determining the seroprevalence of HIV infection among voluntary blood donors. As in literature there was reported cases that affected by HIV following blood transfusion.[5]

The World Health Organization (WHO) estimates that 5% to 10% of HIV/AIDS cases continue to be acquired from infected blood transfusions [6,7] and advocates that each country adopt a national blood policy that embraces voluntary nonremunerated donation by a donor pool that is selected for low risk.

Our study age group was between 20 and 50 years old which is similar to the age group of donors in Jos, North-central, Nigeria were in the age range 21 to 50 years according to Egah et al [8]. in the study of Khan et al [5] who found that their blood donors were in the age range of 18 to 60 years which showed wide range of age group unlike our study and could be to our short study period.

All our donors in the study were male and this is similar to Elfaki et al (2008) among Sudanese donors, and the study of Khan et al [9].

Donors with positive HIV test were 0.7% and most of them were between 20 and 40 years old (0.6%) from the total. This result is similar to Olokoba A.B et al [10] study in Nigeria which showed 0.7% of blood donors had positive HIV test.

Our study is higher than that done in India by Makroo. R.N. et al [11] which showed 0.249% of donors had positive HIV. But our findings are lower than 1.0% in the work of Ejele et al [12] in Port Harcourt, South-south Nigeria; the 3.1% found by Fiekumo et al [13] in Osogbo, South-west Nigeria; the 3.9% found by Esumeh et al [14] in another study in Benin city, South-south Nigeria; the 5.8% in the works of Chikwem et al [15] in Maiduguri, North-eastern Nigeria and that of Abdalla et al [16] among Kenyan donors.

The implication of HIV in voluntary blood donors is the risk of transmission of these infections to recipients of blood and blood products. It also implies that safe blood will be more difficult to get.

An unsafe blood transfusion is very costly both in terms of human and economic costs. Morbidity and mortality resulting from the transfusion of infected blood have far-reaching consequences, not only for the recipients themselves, but also their families, their communities and the wider society [17, 18]. Since a person can transmit HIV infection during the

asymptomatic phase, it can contribute to an ever-widening pool of HIV infection in the wider population.

We recommend the screening of all prospective blood donors for all transfusion transmissible diseases and to improve the equipments for HIV screening.

Also we recommend that full and detailed information about the donors should be well documented.

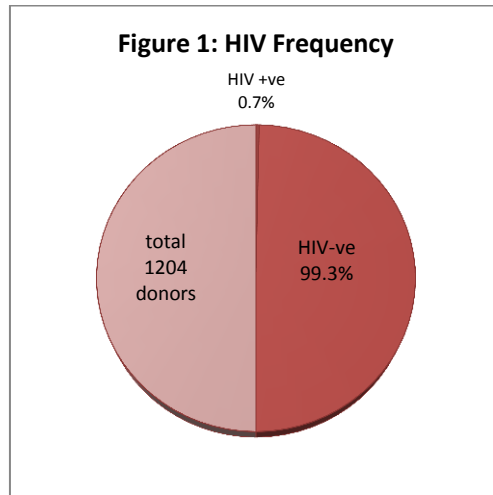


Figure 2

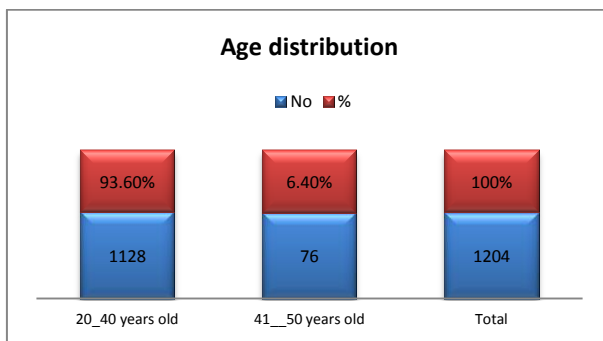


Table 1
HIV status and Age group correlations p=0.47

	HIV+ve	HIV-ve	total
20_40years old %within the age	7(0.6%)	1121(99.4%)	1128 100.0%
41_50years old %within the age	1(1.3%)	75(98.7%)	76 100.0%
Total %within the age	8(0.7%)	1196(99.3%)	1204(100%)

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