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Three years study of Seroprevaleance of HIV, HBV, HCV and syphilis among blood donors in blood Bank, Brims, Bidar

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Abstract
Transfusion transmissible infectious agents such as Human Immunodeficiency Virus (HIV), Hepatitis B Virus (HBV), Hepatitis C Virus (HCV) and Syphilis are among the greatest threats to blood safety for the recipient. In this study donors who donated blood at blood bank during three years period were retrospectively evaluated with respect to HBs Ag, Anti-HCV, Anti-HIV and Syphilis Seroprevaleance, of the total 20958 blood donors 622 had serological evidence of infection. HBs Ag positive was found in 2.78%, Anti-HCV in 0.01%, Anti-HIV in 0.16% and VDRL in 0.01% of overall donors.

Keywords: Blood Donors, HBV, HIV, HCV, Syphilis

Introduction
Blood transfusion is a lifesaving intervention and millions of lives are saved each year globally through this procedure. Transmission of infectious disease through donated blood is of concern to blood safety as transfusion forms an integral part of medical and surgical therapy. It is well known that blood transfusion is associated with a large number of complications which may be acute or delayed complication.

Transfusion of blood and its products is an effective way of correcting hematological defects [1]. With every unit of blood is 1% chance of transfusion associated problems including transfusion transmitted disease [2]. World Health Organization (WHO) has estimated that more than 2 billion people in the world have been infected with HBV at some time in their lives and about 350 million people worldwide are HBV carriers with the majority in developing world mainly in Asia and Africa [3]. The blood transfusion is one of the important means of transmission of HIV infection among the mass. As a blood born virus, HCV is widely recognized as a major causative agent of post transfusion none A non B hepatitis [4]. Various studies have shown a rise in the prevalence of syphilis in recent years in India [5, 6] as well in the western countries [7]. The undertaken study was carried out to know the prevalence of infectious markers among the blood donors.

Materials and methods
The present study was conducted at the Blood Bank of Bidar Institute of Medical Sciences, Bidar, in this retrospective study we reviewed records of 20958 blood donors over a period of 3 years i.e. from 1st January 2012 to December 2014. In our blood bank the blood donors are selected for donation by trained personnel after a complete physical examination and satisfactorily answering the donor's questionnaire. Tests are routinely done on every blood unit to exclude HIV, HBV, HCV, Syphilis and malaria. All the samples were screened for Hepatitis B surface antigen (HBs Ag), HIV, Hepatitis C Virus (HCV) by ELISA method using approved commercially available kits. Screening for VDRL was done by RPR Method. All the reactive samples were repeat tested before labeling them seropositive and respective units were discarded.

Observations
A total 20958 blood donors were screened at blood bank during the study period of three years. The year wise distribution of donors is shown in Table No. 1. There was year wise increase in number of blood donors, while there was decrease in overall Seropositivity.

Out of 20958 blood units 622 had serological evidence of infection. Out of 622 seropositive individuals 5836 were HBs Ag positive followed by 34 HIV positive, 3 HCV positive and 2 were reactive to VDRL. The overall Seroprevaleance rate of HIV, HBV, HCV and Syphilis was 0.16%, 2.78%, 0.01% and 0.01%. Table No. 2 shows Seropositivity of HBV, HCV, HIV and Syphilis.

Table 1: Year Wise distribution of blood donors

Year	Donors	Seropositivity	Percentage
2012	6567	193	2.9%
2013	6963	217	3.12%
2014	7428	212	2.9%
Total	20958	622	

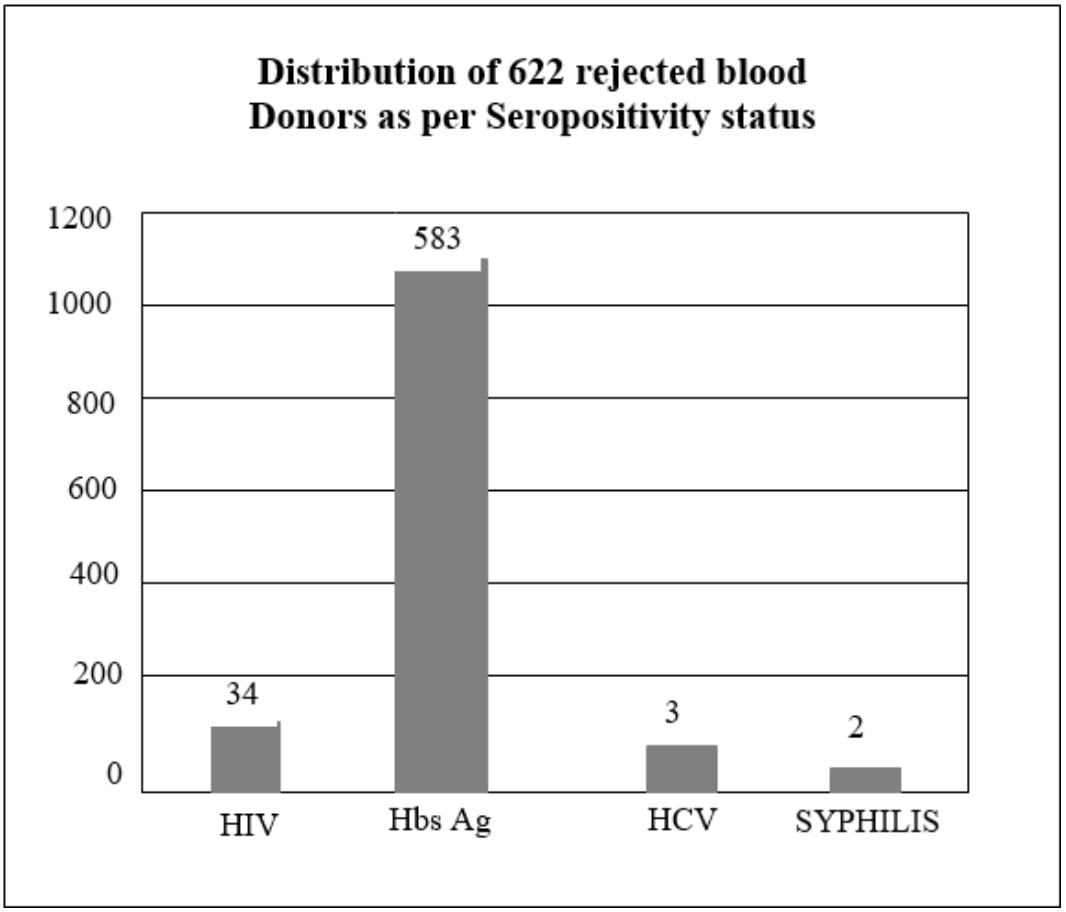

Fig 1: Distribution of 622 Rejected Blood Donors as per Seropositivity

Table 2: Year Wise Seroprevaleance of HIV, HBV, HCV and Syphilis among blood donors in Bidar District

Years	HIV Positive %	HIB Positive %	HCV Positive %	Syphilis Positive %
2012	0.19	2.71	0%	0.03
2013	0.14	2.94	0.03%	0.00
2014	0.15	2.69	0.01%	0.00
Average Seroprevaleance	0.16%	2.78%	0.01%	0.01%

Discussion

Transfusion of blood and blood products is a life saving measure that benefits numerous patients worldwide at the time of transmission of infectious diseases through donated blood is of concern to blood safety. Acquisition of HIV disease through blood transfusion is a relatively efficient mode of transmission. Stringent screening of donors for transfusion transmissible infection is crucial to ensure safe supply of blood and blood products. The present study revealed that there was increase in blood donors and a change in the overall Seropositivity during 3 years.

The present study data reveals that the overall HIV Seropositivity rate was 0.16%. There was decreasing trend in the Seroprevaleance of HIV during the study period. The HIV Seroprevaleance in present study was comparable with other studies carried out at Mysore [8] (0.44%), Saurashtra [9] (0.43%), New Delhi [10] (0.40%), Bhopal [11] (0.51%), while it was very less in Lahore [12] (0.05%) and East Turkey [13] (0.036%) and was very high in North West Ethiopia [14] (3.8%) and at Bijapur [15] (3%).

There was decrease in the Seroprevaleance of HBV. The overall HBV Seroprevaleance was 2.78%. The present study findings was more or less similar with the findings of studies carried out by Sonia Garga, Dr. Mathur (3.44%), Nilima Sawke, G.K. Sawke [11] (2.9%) but it was less in studies carried out by Karandeep Singh, Sudha Bhat [16] (0.62%), Dhruva Gauravi A., Agravat Amit [9] (0.97%) and P Pallavi, CG Ganesh [8] (1.27%).

The HCV Seroprevalnce was 0.04% in present study. The HCV rates are more with others reported from Mysore [8] (0.23%), Jodhpur [1] (0.28%), Saurashtra [9] (0.41%), Southern Haryana [17] (1.0%) and was very high in Lahore

[12] (7.69%).

In our study overall only 0.04% patients were VDRL Positive which was less as compared to other studies carried out at Southern Haryana [17] (0.9%), Chandigarh [18] (0.7%).

Conclusion

In our study there was increase in the number of blood donors at the same time there was overall decrease in the Seroprevaleance of HIV, HBV, HCV and Syphilis. The increase in blood donors may be due to the increase in the conduction of blood donation camps and increase in operative procedures after starting new government medical college at Bidar. The decrease in the Seropositivity may be attributed to the increased awareness in the community done by mass media regarding blood transfusion transmitted infection. The National AIDS Control organization awareness in the community regarding these diseases. To further decrease in the transfusion transmitted infections more sensitive tests should be used to screen the blood donors.

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