ORIGINAL RESEARCH

A Study of Seropositivity of HIV, HBV, HCV, and SYPHILIS in Blood Donors in GMERS, MORBI

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ABSTRACT
Background: Blood is a vital component of the human body, playing a crucial role in maintaining overall health and well-being. The importance of TTI testing cannot be underestimated as HIV, HBV,HCV, and SYPHILIS are transmitted by blood. **Aim:** To study the seroprevalence of HIV, HBsAg, HCV, and VDRL in blood donors. To compare the seroprevalence of these diseases in male and female donors. To compare gender and age-wise seroprevalence. **Methods:**The study was conducted in the blood bank, Department of Pathology, GMERS Medical College,Morbi, India from JANUARY 2022 to DECEMBER 2023. Blood donors who came to the blood bank or participated in a camp for voluntary blood donation provided samples of their blood. We collected data from total a total of 2734 donors. **Results:**A total of 2734 donor samples were analyzed during the said period.Out of 2713 accepted donors, a total of 21 (0.76%) were diagnosed positive for TTI infection. **Conclusion:**It is mandatory to reduce the incidence of transfusion-transmitted diseases in India by implementing rigorous donor selection procedures, including comprehensive screening for HIV, HBV, HCV, and VDRL as well as by using sensitive laboratory screening tests.

Keywords: Blood donation,Seropositivity,Blood donors,HIV,HBsAg,HCV,VDRL,seropositive donors.

INTRODUCTION
Blood donation plays a crucial role in healthcare systems worldwide, as it provides a vital resource for various medical procedures Blood donation is a crucial and lifesaving process in which individuals voluntarily donate their blood to be used for medical purposes asthere is no substitute for blood and cannot be manufactured by man. Blood donation saves millions of patients who are nearer to dying.(1) Although blood transfusions are vital in the supportive care of medical and surgical patients, inappropriate transfusion methods expose millions of people to transfusion-transmissible diseases (TTIs).(2) The use of unscreened blood transfusions puts the patient in danger of getting various TTIs, including hepatitis virus (HBV, HCV), human immunodeficiency virus (HIV), and syphilis. However, this can be handled through the elimination of commercial blood donors, increased monitoring of voluntary donors, and an obligatory pre-transfusion evaluation of blood units for HIV, HBV, HCV, VDRL, Malaria, etc.(3)

MATERIALS AND METHODS
The study was conducted in the blood bank, GMERS, Morbi, India from January 2022 to December 2023. Blood samples were collected from blood donors who came to donate at the blood bank or donated toa voluntary blood donation camp.We collected data from total a total of 2734 donors.Serum samples of accepted donors were tested for anti-HIV IgG and IgM antibodies by ELISA method (4th generation), for HBsAg Using ELISA method, for anti HCV IgG and IgM using ELISA method (3rd generation), for anti-treponema pallidum IgG and IgM and IgA using rapid test.

OBSERVATION AND RESULTS
The study was conducted in the blood bank, GMERS, Morbi, India from January 2022 to December 2023. A total of 2734 donor samples were analyzed during the said period.
Among a total of 2734 donors, 2658 were male and 76 were female. Their age group ranged between 18 to 65 years.

Out of 2734 donors, a total of 21(0.76%) were diagnosed positive for TTI infection.

From the total 21 seropositive donors, the highest prevalence was found in HBsAg with 17 cases followed by HIV2 cases VDRL 1case, and HCV 1case.

All seropositive donors are distributed according to their different age groups and according to their blood groups.

DISCUSSION

Blood and blood component transfusions are a lifesaving measure that benefits individuals all around the world.[4]At the same time, there is still a chance of infection spreading to the receiverthrough transfusion.TTI prevalence is higher in developing countries, and zero risk levels are still a long way off. [5]Thestudy undertook transfusion transmissible disease testing as HIV, HBsAg, HCV, VDRLat GMERS MEDICAL COLLEGE, morbi, India from January 2022 to December 2023.

The prevalence of TTDs in the present study is 21 (0.76%) out of 2734 donors.

Comparison with different studies done in different areas is compared as follows.

Table 1: Comparison of seropositive of HIV with other studies.

Study	HIV Positive Ratein Percentage
Our study, Morbi	0.62%
Muhimbili national hospital, Dar Es Salaam, Tanzania (2002)	3.8%
Kathmandu, Nepal(2009)	0.12%

Table 2: Comparison of seropositive of HBsAg with other studies.

Study	HBsAg Positive Rate in Percentage
Our study, Morbi	0.08%
Muhimbili national hospital, Dar Es Salaam, Tanzania(2002)	8.8%
Mongolian Ministry of Health, Ulaanbaatar, Mongolia(August 2004 to February 2005)	8.1%
Phisanulok regional blood center, Phisanulokprovince, Thiland(1999)	4.6%

Table 3: Comparison of seropositive of HCV with other studies.

Study	HCV Positive Rate in Percentage
Our study, Morbi	0.04%
Muhimbili national hospital, Dar Es Salaam,Tanzania(2002)	1.5%
Mongolian Ministry of Health, Ulaanbaatar, Mongolia(August 2004 to February 2005)	8.7%
Phisanulok regional blood center, Phisanulok province, Thiland (1999)	2.9%

CONCLUSION & SUMMARY

While it is true that blood plays a vital role in maintaining overall health and well-being, it is important to acknowledge that there are risks associated with blood transfusions. Transfusions can lead to the transmission of infectious diseases, such as HIV hepatitis, and syphilis if proper screening measures are not in place. These risks cannot be overlooked, and they highlight the importance of stringent screening protocols to ensure the safety of blood transfusions.

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