

## ORIGINAL RESEARCH

### The prevalence of transfusion transmitted infections in a tertiary care centre

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#### ABSTRACT:

**Background:** The five most common transmissible infections in all the blood banks included HIV, HBV, HCV, syphilis and malaria. This study aims to evaluate the prevalence of prevalence of transfusion transmitted infections in a tertiary care centre.

**Material and methods:** The present study was conducted to assess the prevalence of transfusion transmitted infections in a tertiary care centre. A total number of 1200 donors were analyzed for the seroprevalence of Transfusion Transmitted Diseases over a period of 6 months. Basic information was obtained using donor form. Physical examination was done Blood was screened for HIV, HBV, HCV, syphilis and malaria by ELISA according to manufactures instructions.

**Results:** A total number of 1200 blood donations were taken in this study. In our study, Males outnumbered females with 93.33% donations while only 6.66% donors were females. 24 (2 %) were reactive for blood transmitted infection. In our study, HBV and HCV were the major infections in blood donors and the seroprevalence were 1.5%, and 0.16% respectively. Only 0.33% was positive for malaria.

**Conclusion:** The present study concluded that 2 % donars were reactive for blood transmitted infection. HBV and HCV were the major infections in blood donors.

**Keywords:** blood donations, donors, blood transmitted infection.

#### INTRODUCTION:

Transfusion of blood and its components is life saving as well as it has life threatening hazards. With every unit of blood there is a 1% chance of transfusion associated problems including transfusion transmitted diseases.<sup>1</sup> Transfusion therapy has been the mainstay of several medico-surgical therapeutics since 1930.<sup>2</sup> There are 3 types of blood donors:- Voluntary, replacement, & paid.<sup>3</sup> A voluntary blood donor intentionally donates blood without seeking for any kind of remuneration whereas a replacement donor is requested to do so by the patient or his attendants.<sup>4</sup> Blood transfusion carries the risk of transmitting major infections such as hepatitis, HIV, syphilis, and malaria.<sup>3</sup> The World Health Organization (WHO) recommends all blood donations should be screened for evidence of infection prior to the release of blood and blood components

for clinical or manufacturing use for the pursuit of global blood safety. After this routine serological screening implementation, the Transfusion-transmissible infections (TTIs) have been drastically reduced in many countries.<sup>5,6</sup> Indian guideline mandate routine screening of blood and its component for five most common transmissible infections in all the blood banks. These include HIV, HBV, HCV, syphilis and malaria.<sup>7</sup> Studies have revealed high proportion of inappropriate use of blood transfusion often in both developed and developing countries.<sup>8,9</sup> This study aims to evaluate the prevalence of prevalence of transfusion transmitted infections in a tertiary care centre.

### **MATERIAL AND METHODS:**

The present study was conducted to assess the prevalence of transfusion transmitted infections in a tertiary care centre. A total number of 1200 donors were analyzed for the seroprevalence of Transfusion Transmitted Diseases over a period of 6 months. Before the commencement of the study ethical approval was taken from the ethical committee of the institute and informed consent was taken from the patient. Donors having age less than 18 years and more than 60 years, weight <45Kg, anemic, pregnant women, lactating women and current history of medication, recent history of having undergone a surgical procedure, serious illness, previous blood donation within 3 months were excluded from the study. Basic information regarding age, sex, occupation, address, marital status, number of previous donations and other relevant data's were obtained using donor form. Consent form and Donor Questionnaire was given to know about the health status of donor. Physical examination was done for all the blood donors before screening and blood donation. Blood was screened for HIV, HBV, HCV, syphilis and malaria by ELISA according to manufactures instructions.

### **RESULTS:**

A total number of 1200 blood donations were taken in this study. In our study, Males outnumbered females with 93.33% donations while only 6.66% donors were females. 24 (2 %) were reactive for blood transmitted infection. In our study, HBV and HCV were the major infections in blood donors and the seroprevalence were 1.5%, and 0.16% respectively. Only 0.33% were positive for malaria.

**Table 1: Sex Distribution Of Donors**

<b>Gender</b>	<b>N(%)</b>
<b>Male</b>	<b>1120(93.33%)</b>
<b>Female</b>	<b>80(6.66%)</b>
<b>Total</b>	<b>1200(100%)</b>

**Table 2: SeroprevalenceOfTti**

<b>Transfusion Transmitted Diseases</b>	<b>N(%)</b>
<b>HBV</b>	<b>18(1.5%)</b>
<b>HCV</b>	<b>2(0.16%)</b>
<b>HIV</b>	<b>0(0%)</b>
<b>SYPHILIS</b>	<b>0(0%)</b>
<b>MALARIA</b>	<b>4(0.33%)</b>
<b>Total</b>	<b>24(2%)</b>

**DISCUSSION:**

Transfusion transmissible infections (TTIs) are the common serious hurdles of blood transfusion. TTIs like HIV, HBV, HCV and syphilis are the major public health problems in developing countries.<sup>10</sup> They are transmitted parenterally, vertically or through high-risk sexual behaviors and can cause fatal acute and chronic lifethreatening disorders. Blood transfusion is a potential route for the transmission of these infections.<sup>11</sup>

A total number of 1200 blood donations were taken in this study. In our study, Males outnumbered females with 93.33% donations while only 6.66% donors were females. 24 (2 %) were reactive for blood transmitted infection. In our study, HBV and HCV were the major infections in blood donors and the seroprevalence were 1.5%, and 0.16% respectively. Only 0.33% were positive for malaria.

Among the various TTI's, hepatitis has become an issue of global importance. Hepatitis B and C are highly infectious and pose major public health problem in developing countries and are the commonest cause of chronic liver disease in several regions of the world.<sup>12</sup> Hepatitis B is one of the most common diseases transmitted by blood and has infected two million people worldwide including an estimated 400 million chronically infected cases. Individuals with chronic infection have a high risk of developing liver cirrhosis and hepatocellular carcinoma.<sup>13</sup> Hepatitis C virus (HCV) infection is another common chronic blood born infection with an estimated 3.9 million persons infected by the virus and a high rate of development of liver cirrhosis. Infection by HBV and HCV causes serious mortality and morbidity.<sup>14</sup>

Male preponderance were reported in various Indian studies. In India, Garg S et al, Patel et al reported the percentages of 61.2%, 93.1%, respectively.<sup>15,16</sup>

HenshawUchechiOkoroiwu et al., conducted a study in a total of 24,979 prospective donors over a period of 12 years from 2005 to 2016 and found that 3739 units (14.96%) were positive for at least one infective agent. 4.1% and 3.6% donors were positive for HBV and HCV respectively.<sup>17</sup> The seroprevalence of HCV in the study done in Pakistan where HCV prevalence was 2.06%.<sup>18</sup>

**CONCLUSION:**

The present study concluded that 2 % donors were reactive for blood transmitted infection. HBV and HCV were the major infections in blood donors.

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