



## SERO-PREVALENCE OF BLOOD BORNE INFECTIOUS DISEASES AMONG THE BLOOD DONORS AT A TERTIARY CARE HOSPITAL. CHENNAI.

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**ABSTRACT** Blood transfusion is one of the life saving procedure that is known to save millions of lives annually. The receipts of blood transfusion are at a risk of acquiring serious life threatening infectious agents if the donors are not screened properly. The retrospective study was conducted in the blood bank SBMCH for the period of 3 years. A total of 3926 donors were screened out of which 61 showed the positive test results. This showed the seroprevalence of 1.55% which is a significant value and a threat to the recipient. So in order to prevent the grave situation the donors should undergo a health check-up questionnaire and must be screened for the blood borne diseases that includes HIV, hepatitis B, hepatitis C, syphilis, and malaria by easily available and cost effective methods. And despite of taking the stringent measures transfusion-transmitted infection continues as a challenge for transfusion experts.

**KEYWORDS :** seroprevalence, screening, ICT's, transfusion.

### INTRODUCTION:

Blood and its components are one of the most important constituents of body for survival. Successful blood transfusion as life saving management has proven to be achievement in the medical science. Due to high prevalence of infectious diseases WHO has set guidelines for screening of blood prior to blood transfusion to ensure safe and adequate blood availability to the patients. Blood from the donors is screened for Hepatitis B, Hepatitis C, HIV 1,2, Syphilis and MP/MF in addition to Rh/ ABO compatibility by using the conventional methods [1] [2] [3]. Due to poor health care facilities and education among the donors, these diseases are accidentally acknowledged while screening prior to the blood donation. Meticulous pre-transfusion testing and screening particularly for transfusion transmissible infections is the need of hour. So, proper selection of donor and sensitive screening tests can ensure the quality blood transfusion that is not harmful for the recipient.

### MATERIAL AND METHODS:

The present retrospective study was conducted at blood transfusion centre under the department of Microbiology and Pathology SBMCH Chrompet Chennai from January 2013 till February 2016. Total number of donors during this window period of 3 years was 3926 and were tested for HIV, Hepatitis B, Hepatitis C, Syphilis and MP/MF by the standard methods i.e. immune chromatographic tests (ICT's) [5]. Among the transfusion-associated non-A-non-B viral hepatitis virus HCV is recognized as the commonest cause worldwide due to blood donation [8]. Donors were selected by standard criteria's for donation by taking detailed history and thorough clinical examination. Written informed consent was taken from each donor after explaining pros and cons in their native language. Under all sterile conditions Blood was collected and stored by appropriate methods. All the reactive samples were tested repeatedly before discarding.

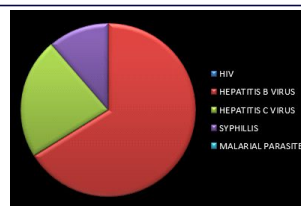
### RESULTS:

S.N O	BLOOD BORNE PATHOGENS	TESTS	TOTAL	PERCENTAGE (%)
1.	HIV	HIV 1,2	NIL	NIL
2.	HEPATITIS B VIRUS	HBs Ag	41	1.004%
3.	HEPATITIS C VIRUS	Anti-HCV	14	0.36%
4.	SYPHILLIS	VDRL/RPR	07	0.178%
5.	MALARIAL PARASITE	MP/MF	NIL	NIL

**TABLE I: SEROPREVALENCE OF DIFFERENT BLOOD-BORNE INFECTIONS AMONG THE BLOOD DONORS**

S.NO	TOTAL NO. OF DONORS	TOTAL NO. OF POSITIVE DONORS	TOTAL PERCENTAGE %
1.	3926	61	1.55%

**TABLE 2 : OVERALL SEROPREVALENCE OF BLOOD BORNE INFECTIONS**



**FIGURE 1 : SEROPREVALENCE OF HBV, HCV AND SYPHILLIS**

### DISCUSSION:

Blood transfusion is one of the significant route of transmission of various blood borne infections. But the meticulous pre-transfusion screening and testing has decreased the incidence of transmission of these pathogens to a great extent. Study conducted at SBMCH showed seroprevalence of 1.55% which is still significant and threat to the recipients [Table 2]. All the donors that were positive were males between the age group 18-35 years of age. Prevalence of Hepatitis B in present conducted study was 1.044% which is quite high. Prevalence of hepatitis C was 0.356% which was next high to hepatitis B. Prevalence of Syphilis was 0.178% which is significantly low. As per the AABB standards, any person with a positive serological test result for syphilis blood donations should be deferred for a period of 12 months [9], and prevalence of HIV was found to be nil among all donors. So, there is an decreasing trend of transmission of HIV among the blood donors [4] [6]. This suggests the need of awareness of general population regarding these diseases and the availability of screening methods can help to ensure the safe blood transfusion.

### CONCLUSION:

In this study conducted from Jan 2013 to Feb 2016, 3926 donors were tested. Seroprevalence of Hepatitis B was the highest followed by Hepatitis C and syphilis respectively and concomitantly the prevalence of MP/MF and HIV was found to be nil. It is thus concluded that prevalence of seropositivity among the donors is significantly high and a big hurdle to overcome in transfusion medicine. Motivation and organisation of voluntary blood donation camps can help to identify infected population and reduce the further transmission of these diseases. Simultaneously cheap and easily available screening programs are the need of hour.

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