



STUDY OF SERO PREVALENCE OF HEPATITIS B VIRUS AMONG VOLUNTARY BLOOD DONORS IN A BLOOD CENTER, TAMILNADU

Pathology

Dr. Bharathi.K

MD (Path) Professor, Department of Pathology , Madha Medical College And Research Institute, Kovur, Chennai, Tamilnadu, INDIA

ABSTRACT

INTRODUCTION: Transfusion Transmissible infections (TTI) are any infections that are transmitted from one person to another through blood and blood products transfusion. Prevalence of Hepatitis B virus (HBV) positivity in India is about 4.7% in which transmission of HBV through blood transfusion ranges from 1.2% to 1.7%. **AIM AND OBJECTIVES :** To study the sero prevalence of Hepatitis B virus (HBV) and transfusion transmissible diseases in voluntary blood donor in Tertiary Health care hospital, Blood Center in Tamilnadu. **MATERIALS AND METHODS:** We studied and analysed the blood bank records with screening test results of our blood bank, Tertiary Health care hospital, Blood Center, Kancheepuram district, Tamilnadu in the year 2022. Institutional ethical committee clearance was obtained. **RESULTS AND OBSERVATIONS:** We observed that 1.14% of our voluntary blood donors show HBV positivity in our blood center. 90% of our voluntary blood donors are males of age group 20 to 25 years. **CONCLUSION:** Donor questioning, examination and counselling is essential in all blood donation procedures. This study is done to create an awareness about TTIs among voluntary blood donors.

KEYWORDS

SERO PREVALENCE, TTI (TRANSFUSION TRANSMISSIBLE DISEASES), HBV, BLOOD CENTER, TAMILNADU

INTRODUCTION:

Hepatitis B Virus is a partially double stranded DNA virus of 42 nm diameter. It can cause acute hepatitis, chronic hepatitis, cirrhosis and hepatocellular carcinoma^[1]. According to WHO more than 10% potential blood donors of developing countries are HBV carriers^[2]. HBV is highly infectious. Presence of HBsAg in blood indicates active infection^[1].

Transfusion Transmissible infections (TTI) are any infections that are transmitted from one person to another through blood and blood products transfusion^[3]. Prevalence of HBV positivity in India is about 4.7% in which transmission of HBV through blood transfusion ranges from 1.2% to 1.7%^[4].

AIM AND OBJECTIVES :

To study the sero prevalence of transfusion transmissible diseases among voluntary blood donors in Tertiary Health Care hospital, Blood Center in Tamilnadu.

MATERIALS AND METHODS:

We studied and analysed the blood bank records of screening test results in a Tertiary Health care hospital, Blood Center, Kancheepuram district, Tamilnadu in the year 2022. Institutional ethical committee clearance was obtained. All the blood donors were screened for Transfusion Transmitted Infections like HIV, HBV, HCV, Syphilis and Malaria compulsorily. Hepatitis B virus infection is screened by Rapid card test and ELISA methods. Quality control procedures were followed routinely and documented. Voluntary blood donors were assessed by 'standard criteria for blood donors'. We follow the NACO (National Aids Control Organisation) guidelines and WHO guidelines for blood centers.

RESULTS AND OBSERVATIONS:

This study is based on blood bank records at our blood center . All other TTIs were negative . No voluntary blood donors were positive for HIV, HCV, Syphilis and Malaria in our blood center. We observed that 1.14% of our voluntary blood donors show HBV positivity in our blood center. This low sero prevalence of TTIs is due to proper donor counselling, examination, effective screening procedures and rational use of blood.

Table 1: Results and observations of our study.

s.no	Category	Results
1.	Total number of voluntary blood donors of the year 2022	700
2.	Number of voluntary blood donors showed HBV positivity	8
3.	Prevalence of HBV positivity among voluntary blood donors	1.14%

DISCUSSION:

Transfusion Transmitted Infections like HIV, HBV, HCV, Syphilis and Malaria pose a threat to safe blood transfusion practices^{[1][2][3]}. Other less common infections through blood transfusion are CMV, EBV, Herpes virus, brucellosis and toxoplasmosis^{[1][2]}. In developing countries lack of resources for universal and effective screening seems to be a major source of TTIs in the recipients. Follow up of seropositivity cases is only possible if complete blood donor records are maintained in blood center.

Kaur et al reported a sero positivity of HBV as 1.07% and 0.65% in replacement and voluntary donors respectively^[5]. Chandra et al reported as sero positivity of HBV as 1.96% in replacement donors^[4].

Clinicians should follow the rational use of blood policy ie. Blood transfusion should be done only for essential and critical life saving circumstances. An efficient method to prevent the transmission of TTI is notifying and counselling of TTI reactive blood or organ donors^{[6][7]}. Mandal et al suggests that there is a need for central notification system for tracing these reactive donors by synchronizing with Aadhar number or retinal impression or photo.^[7]

Currently many blood banks in India employ HBV NAT nucleic acid testing assay to detect HBV DNA in blood^{[8][9]}. It is very sensitive and can detect HBsAg negative blood donors in window period^[10]. Sero prevalence of TTIs can be reduced by educating the public through social media platforms. Voluntary blood donation camps has to organised frequently by blood centers and should create an awareness among the voluntary blood donors about the transfusion transmitted infections.

CONCLUSION:

Donor questioning, examination and counselling is essential in all blood donation procedures. Rational use of blood, effective TTI screening tests and awareness among voluntary blood donors can reduce the prevalence of TTI in the community. This study is conducted to create an awareness about TTI among voluntary blood donors.

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