



SEROPREVALENCE OF HEPATITIS B VIRUS AND HEPATITIS C VIRUS AMONG BLOOD DONORS: THREATS TO BLOOD SAFETY

Naveen Bansal¹, Satish Kumar¹, Yashik Bansal²

Department of ¹ Transfusion Medicine and ² Microbiology, VCSG Government Institute of Medical Science and Research, Uttarakhand (India)

Introduction

The efficacy of transmission of hepatitis B virus (HBV) and Hepatitis C virus (HCV) as a result of blood transfusion is very high as compared to other routes of transmission [1].

Seronegative blood donors during infectious window period pose the greatest threat to the safety of blood supply [2].

In developing countries like India, in majority of the blood banks, the donated blood is screened by rapid/ enzyme linked immunosorbent assays which have a long window period [3].

The present study was done to estimate the prevalence of HBV and HCV among blood donors at a tertiary care hospital and identify threats to a safe blood supply.

Material and Methods

The present study was a retrospective cross sectional study.

The screening test results for HBV and HCV of all blood donations for the past 5 years were reviewed retrospectively.

The screening tests for HBV were performed using rapid card method based on immunochromatography.

The screening tests for HCV were performed using rapid card method based on membrane based enzyme immune-assays.

Demographic details of the blood donors who were reactive for HBV and HCV were analysed.

Result

A total of 8761 units of blood were collected between 1st January 2017 and 31st August 2021.

Total blood units HBV seropositive– 27

Total blood units HCV seropositive– 20

The prevalence rate of HBV was 0.30% which was less as compared to the national prevalence rate (1-2%) of HBV among blood donors in India.

The prevalence rate of HCV was 0.22% which was less as compared to the national prevalence rate (0.4%) of HCV among blood donors in India.

HCV prevalence was significantly higher among replacement blood donors as compared to voluntary blood donors ($p=0.432$).

Table 1: Prevalence of HCV and HBV among blood donors

	Prevalence in Indian blood donors	Prevalence rate among blood donors at our hospital in current study
Hepatitis B	1-2%	0.3%
Hepatitis C	0.4%	0.22%

Table 2: Window period of various testing methods used in blood banks for HBV and HCV screening [3].

	NAT testing	Antigen/ Antibody testing
HCV	2 days	58 days
HBV	11 days	54 days

Conclusion

Efforts should be made to promote voluntary blood donation and minimize replacement blood donors.

Highly sensitive diagnostic assays such as nucleic acid technology (NAT) testing needs to be done for routine screening of blood donations in blood banks, to decrease the incidence of transfusion transmitted infections such as HBV and HCV.

References:

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