



TRENDS OF SEROPREVALENCE OF HIV, HBV, HCV AND SYPHILIS AMONG BLOOD DONORS AT TERTIARY CARE HOSPITAL IN LATUR.

Pathology

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ABSTRACT

Introduction- Blood transfusion is essential part of medical treatment. Transfusion Transmitted infections are major problem associated with blood transfusion practices. The infectious diseases for which blood donors are screened in hospital include HIV, HBV, HCV, SYPHILIS and MALARIA. **Aim & Objective:** To study seroprevalence of HIV, HBV, HCV and SYPHILIS among blood donors at Tertiary care Hospital. **Material and Method:** Data of all blood donors obtained from tertiary care hospital Latur between January 2019 to April 2022 were analyzed retrospectively. Serologic screening of HBV, HCV, HIV, VDRL, Malaria were conducted for all samples and positive cases were confirmed. **Results:** During the study period total 12561 blood units screened. Out of 12561 total blood screened unit 214 units were seropositive for transfusion transmissible infection (TTI) giving prevalence rate of 1.7% among blood donors. The seroprevalence of HIV, HBsAg, HCV, Syphilis was 0.39%, 1.24%, 0.07%, 0.00% Respectively. The total seroprevalence in year 2019, 2020, 2021, upto April 2022 was 2.0%, 1.9%, 1.3%, 1.3% Respectively. Due to implementation of strict donor selection criteria there is decrease in prevalence of transfusion transmissible infection seen. No donor were found positive for malaria parasites. **Conclusions:** In present study the seropositivity rate was found to be high among blood donors for HBV followed by HIV, HCV, Syphilis. With the implementation of strict selection criteria and awareness created by health workers helps in reduction of seroprevalence in blood donors.

KEYWORDS

HIV, HBV, HCV, syphilis, Seroprevalance

INTRODUCTION

Blood transfusion is integral and life saving procedure and millions of lives are saved each year. However, blood transfusions are associated with certain risks that can lead to adverse consequences.¹ It carries the risk of transmitting the life threatening transfusion transmissible infectious agents such as human immunodeficiency virus (HIV), hepatitis B virus (HBV), hepatitis C virus (HCV), Syphilis, malaria. Thus ensuring the safety of blood is major concern in transfusion therapy.² With every unit of blood there is 1% chance of transfusion associated problems including transfusion transmitted infections.³ First case of transmission associated HIV infection was described in an infant, given transfusion of erythroblastosis foetalis.⁴ Many cases were reported after that all over the world in which transfusion of blood was risk factor.⁵ Poor health education and lack of awareness results in reservoir of infection in population.

Accurate estimates of risk of Transfusion transmitted infections are essential for monitoring the safety of blood supply and evaluating the efficacy of currently employed screening procedures.² Monitoring the incidence of transfusion transmitted infections in blood donors is important for estimating the risk of transfusion and optimising donor recruitment strategies to minimise transmission.

AIM & OBJECTIVE:

To study seroprevalence of HIV, HBV, HCV and SYPHILIS among blood donors at Tertiary care Hospital.

MATERIALS AND METHOD:

Present study carried out in tertiary care Centre Latur during period January 2019 to April 2022.

This study has been done retrospectively by including data of blood donors from January 2019 to April 2022. Serologic screening of HBV, HCV, HIV, VDRL, Malaria were conducted for all samples and positive cases were confirmed. ELISA method was used for screening of HIV, HBsAg and anti HCV testing. Test for Syphilis was done by RPR method.

RESULT

During the study period total 12561 blood units screened. Among this 98.3% were males and 1.6% were females. Out of 12561 total blood screened unit 214 units were seropositive for transfusion transmissible infection (TTI) giving prevalence rate of 1.7% among blood donors.

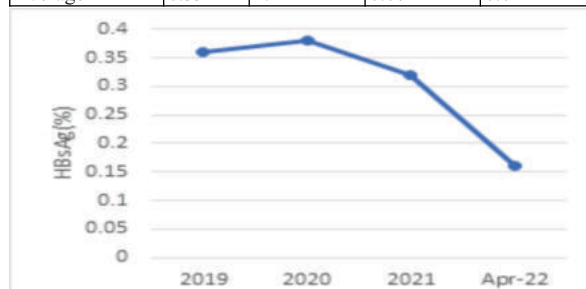
The seroprevalence of HIV, HBsAg, HCV, Syphilis was 0.39%, 1.24%, 0.07%, 0.00% Respectively.

The total seroprevalence in year 2019, 2020, 2021, upto April 2022 was 2.0%, 1.9%, 1.3%, 1.3% Respectively. Due to implementation of strict donor selection criteria there is decrease in prevalence of transfusion transmissible infection seen.

No donor were found positive for malaria parasites.

Table 1: Year wise Distribution of percentage (%) of HIV, HBsAg, HCV and Syphilis in total Donors

Year	HIV	HBsAg	HCV	Syphilis
2019	0.16	0.36	0.03	0.0
2020	0.09	0.38	0.03	0.0
2021	0.09	0.32	0.00	0.0
Till April 2022	0.03	0.16	0.00	0.0
Average	0.39	1.24	0.07	0.0



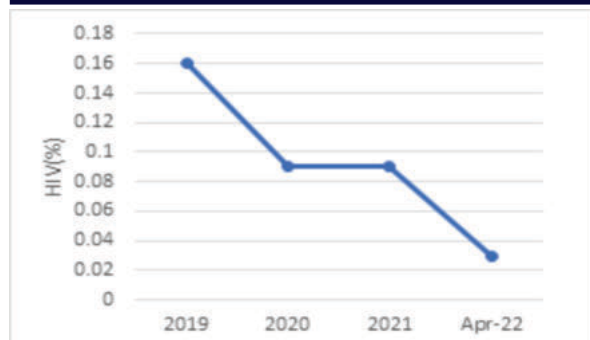


Figure 1,2,3: Trends of seroprevalence of HBsAg, HIV, HCV

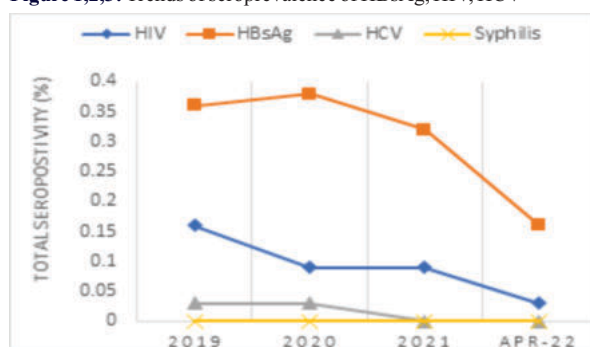


Figure 4: Overall Seropositivity and Trends of HIV, HBsAg, HCV and Syphilis.

DISCUSSION:

Seroprevalence of all four transfusion transmitted infections were calculated. It was found that maximum seroprevalence was found for hepatitis B (1.24%) as compared to other infections.

Table no 2: Comparison of seroprevalences (%) of infectious markers from various studies.

HIV %	HBsAg %	HCV	Syphilis	Reference
0.11	1.21	0.18	0.48	Shah AR et al ⁶
0.24	1.18	0.43	0.23	Makroo RN et al ⁷
0.38	2.82	0.22	0.22	Deshpande RH et al ⁸
0.3	1	1.7	0.9	Arora D. et al ⁹
0.4	3.44	0.28	0.22	Garg S. et al ¹⁰
0.39	1.24	0.07	0	Present study

Seroprevalence HIV, HBsAg, HCV, Syphilis in present study was similar to the study conducted by Shah AR et al⁶, Makroo RN et al⁷, Deshpande RH et al⁸, Garg S et al¹⁰. The total seroprevalence in year 2019, 2020, 2021, upto April 2022 was 2.0%, 1.9%, 1.3%, 1.3% respectively. On an average seroprevalence is decreasing in this study which was similar to study conducted by Deshpande RH et al⁸.

CONCLUSION

In present study the seropositivity rate was found to be high among blood donors for HBV followed by HIV, HCV, Syphilis. With the implementation of strict selection criteria and awareness created by health workers helps in reduction of seroprevalence in blood donors.

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