



# HIV, Hepatitis B and C viruses and syphilis coinfection among blood donors in hospital settings.

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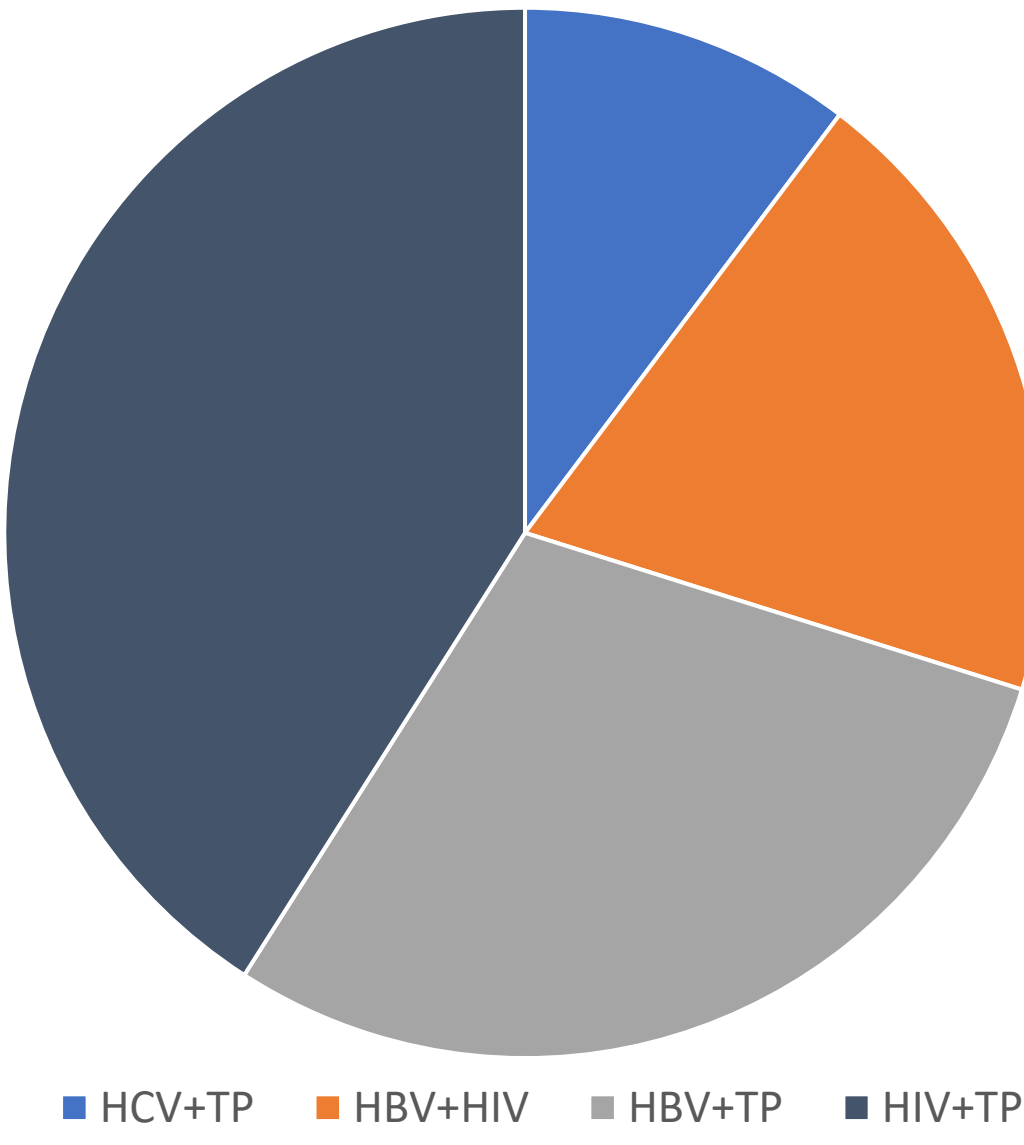
## INTRODUCTION

- Transfusion of blood and blood products, although being a life-saving measure, still has far-reaching consequences as far as the morbidity and mortality resulting from the transfusion of infected blood is concerned.
- With every unit of blood, there is a 1% chance of a transfusion-associated problem including TTIs
- There is a heavy burden of HIV-HBV and HIV- HCV co-infection in the developing world, including India.
- There is a probability that co-infection with HIV and HBV can progress to chronic hepatitis B and hence increased liver related mortality.
- Hepatitis C co-infection has been found to be more common in HIV positive individuals and is associated with an increased mortality and morbidity.
- Co-infection with HCV and HIV has been associated with rapid decline in the CD4 count and rapid progression of HIV infection.
- Therefore, this study was planned to assess seroprevalence of these co-infections with HIV, HBV, HCV and Treponema palladium (TP) and to assess associated factors in donor history for them.

## RESULTS

When tested by ECLIA, the seroprevalence for co-infection with HCV and TP was 0.0053% (1/18819). The seroprevalence for co-infection with HBV and HIV was 0.010% (2/18819). The seroprevalence for co-infection with HBV and VDRL was 0.015% (3/18819). The seroprevalence for co-infection with HIV and TP was 0.021% (4/18819). When tested by NAT, the prevalence of co-infection with HCV and VDRL was 0.0053% (1/18819). The prevalence of co-infection with HBV and HIV was 0.010% (2/18819). The prevalence of co-infection with HBV and TP was 0.010% (2/18819). The prevalence of coinfection with HIV and TP was 0.021% (4/18819). Out of the 10 reactive cases, three factors were found to be significantly (p-value<0.05) associated with co-infection replacement donations, first time donors and male donors.

ECLIA VIRAL SEROPREVALENCE



| SEROPREVALENCE | ECLIA            | NAT              |
|----------------|------------------|------------------|
| HCV+TP         | 0.0053%(1/18819) | 0.0053%(1/18819) |
| HBV+HIV        | 0.010%(2/18819)  | 0.010%(2/18819)  |
| HBV+TP         | 0.015%(3/18819)  | 0.010%(2/18819)  |
| HIV+TP         | 0.021%(4/18819)  | 0.021%(4/18819)  |

## AIM

HIV, Hepatitis B and C viruses and syphilis coinfection among blood donors in hospital settings.

## METHOD

A retrospective observational study was conducted in the department of transfusion medicine (TM) at a tertiary-level healthcare centre between January 2019 to December 2021. A total of 18,819 donor samples were subjected to screening for TTIs by two different methods simultaneously ECLIA and mini-pool NAT testing. All donors with co-infections were identified and necessary records for identifying associated factors were obtained from the donor screening form as well as the reactive donor counselling form.

## CONCLUSION

Blood safety is a challenge in India because of the high prevalence of HIV, HCV, HBV and TP. There is a relatively low percentage of volunteer donors, repeat donors and female donors. Many factors favour coinfections. However, with our study we found that voluntary donations, repeat donors and female donations are safer as compared to replacement donors, first time donors and male donors. Therefore, it is of utmost importance to screen and counsel donors, promote voluntary and repeat donations and to know the rates of these coinfections among otherwise healthy blood donors at risk of transmitting these TTIs

## ACKNOWLEDGEMENT

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## CONTACT INFORMATION

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