



INTRODUCTION

- Transfusion-transmissible infections (TTIs), including HIV, HBV, HCV, syphilis, and malaria, are significant concerns in blood transfusion practices.
- A key challenge is the occurrence of co-infections, particularly among HIV, HBV, and HCV, due to their overlapping routes of transmission.
- These co-infections can lead to more severe outcomes for both the donor and the recipient, compared to single infections
- This poses a heightened risk to transfusion recipients, potentially resulting in serious health complications.

AIMS AND OBJECTIVES

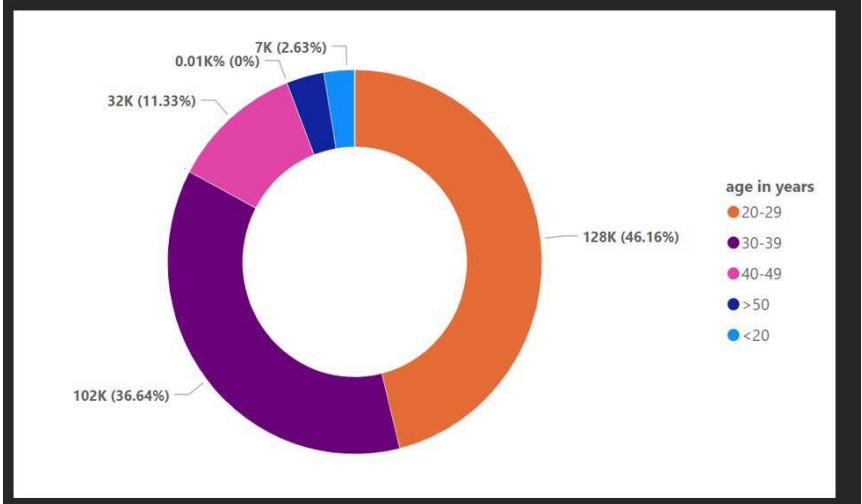
- 1.To assess the prevalence and patterns of mono-infections and co-infections among blood donors from 2008 to 2023.
2. To compare the effectiveness of different screening methods (4th generation ELISA vs. Chemiluminescence Immunoassay) in detecting TTIs among blood donors over time.

MATERIALS AND METHODS

- A retrospective analysis of all blood donors during the study period from January 2008 to December 2023 was done.

- From 2008 to 2014, blood donors were screened using the Enzyme-Linked Immunosorbent Assay (ELISA) and from 2015 to 2023
- By using the Chemiluminescence Immunoassay (CLIA) method for anti-HIV I and II, HBsAg, and anti-HBC and for Malaria and syphilis by using ELISA. Donors were grouped as mono-infected and co-infected .

RESULTS



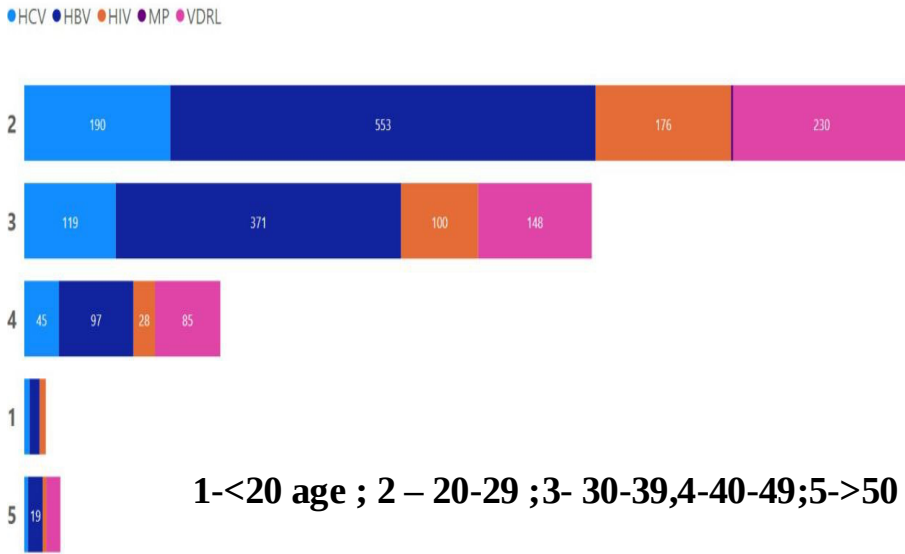
Coinfections	Number
HIV and Syphilis	28
HBV and HCV	21
HIV and HBV	17
HBV and Syphilis	15
HCV and Syphilis	4
HIV and HCV	4
Malaria and Syphilis	1
HIV,HBV and Syphilis	1

Table 1 Screened by A- ELISA from 2008-2014
B- CLIA From 2015- 2023

Category	Year	Total blood donations	HIV %	HCV %	HbsAg %	MP %	VDRL %
A	2008	14875	43 0.29%	47 0.32%	183 1.23%	1 0.01%	34 0.23%
A	2009	18090	144 0.80%	60 0.33%	456 2.52%	1 0.01%	36 0.20%
A	2010	15066	12 0.08%	54 0.36%	180 1.19%	8 0.05%	90 0.60%
A	2011	17584	36 0.20%	526 2.99%	324 1.84%	6 0.03%	152 0.86%
A	2012	14400	30 0.21%	91 0.63%	191 1.33%	1 0.01%	34 0.24%
A	2013	17137	32 0.19%	20 0.12%	206 1.20%	23 0.13%	45 0.26%
A	2014	17487	60 0.34%	30 0.17%	215 1.23%	10 0.06%	61 0.35%
B	2015	15864	41 0.26%	19 0.12%	167 1.05%	10 0.06%	40 0.25%
B	2016	17673	38 0.22%	34 0.19%	166 0.94%	2 0.01%	53 0.30%
B	2017	16951	56 0.33%	48 0.28%	236 1.39%	1 0.01%	75 0.44%
B	2018	18778	72 0.38%	77 0.41%	206 1.10%	1 0.01%	51 0.27%
B	2019	18658	51 0.27%	75 0.40%	216 1.16%	0 0.00%	77 0.41%
B	2020	10565	27 0.26%	38 0.36%	102 0.97%	0 0.00%	45 0.43%
B	2021	15668	36 0.23%	83 0.53%	162 1.03%	0 0.00%	76 0.49%
B	2022	19497	59 0.30%	105 0.54%	174 0.89%	1 0.01%	84 0.43%
B	2023	23574	70 0.30%	129 0.55%	300 1.27%	0 0.00%	79 0.34%
Total		271867	807 0.30%	1436 0.53%	3484 1.28%	65 0.02%	1032 0.38%

Table 2 :TTI% and Coinfections

Year	Total blood donations	Tti	%	Coinfections	%
2008	14875	308	2.07%	9	0.06%
2009	18090	696	3.85%	4	0.02%
2010	15066	336	2.23%	17	0.11%
2011	17584	1044	5.94%	2	0.01%
2012	14400	347	2.41%	4	0.03%
2013	17137	326	1.90%	0	0.00%
2014	17487	376	2.15%	4	0.02%
2015	15864	277	1.75%	4	0.03%
2016	17673	293	1.66%	1	0.01%
2017	16951	416	2.45%	3	0.02%
2018	18778	407	2.17%	4	0.02%
2019	18658	396	2.12%	2	0.01%
2020	10565	197	1.86%	4	0.04%
2021	15668	289	1.84%	10	0.06%
2022	19497	425	2.18%	5	0.03%
2023	23574	578	2.45%	18	0.08%
Total	271867	6711	2.47%	91	0.03%



DISCUSSION

- HIV and Syphilis as the Most Common Coinfection- highlighting the significant overlap in transmission routes such as sexual contact. This emphasises the need for stringent screening and public health interventions targeting high-risk behaviours
- HBV and HCV Coinfection as a Major Concern- viruses share transmission routes such as unsafe injection practices, contaminated medical instruments, and blood transfusions
- Triple Coinfections are rare and Their Clinical Implications

Conclusion: We conducted a first-time assessment of co-infection patterns among blood donors at our tertiary care centre. Since co-infections impact disease progression, future prospective studies are needed to rule out cross-reactivity and potential false-positive results.