



A Research on Transfusion Transmitted Disease Among blood donors from Greater Noida

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Abstract: *BACKGROUND: Blood screening for transfusion-transmitted disease is required and should be done in blood banks. Blood transfusion is a life-renewing procedure in health care, saving the lives of thousands of individuals each year who would have died otherwise. Transfusion-transmitted disease (TTD) is one of the world's most serious health issues. HIV, Hepatitis B and C, Syphilis, and Malaria were all transmitted with blood transfusions. Many difficulties perhaps avoided by careful donor choosing and conceal*

Key Words: *Blood Units Screening, HIV, Hépatites, Syphilis, and PV-PF.*

1. INTRODUCTION:

Every year, blood transfusions save a large number of people who might otherwise die from a variety of diseases. (3) Blood donors are divided into three categories: unpaid, family/volunteer/replacement, and paid (15) each transfusion raises the risk of transmitting a range of viruses, including HIV, syphilis, hepatitis C (HVC), hepatitis B (HBV), & malaria (PV-PF).1)

As a report by the general database on blood harmlessness of the World Health Organization (WHO), on top of ninety-one million eight hundred thousand blood gives were aggregate in 2008.

2. LITERATURE REVIEW:

Alex Mremi, James J. Yahaya, Mramba Nyinko, et al

The current study comprised totality of 16.4% blood givings alongside males & female, All are fully development.(3)

Sukrutha Gopal Reddy, Radhika Chowdary D et al

In the current study 97.2 percent of the blood givings arise males, indicating that males outnumber females. Hiv ,hbv,hcv, and syphilis seroprevalence rates arise 0.26 present 1.28, 0.515 percent, and 0.037 respectively.(4)

Grace Bartonjo et al

TTis were found in 14. Percent of the population, ranging coming from, pf & pv ,hiv syphilis hcv,hbsag(6)

Jayasree Cherukat, Rajendra Kulkarni et al

There were a total of 28,380 donations over this time period. There were 865 persons who tested positive for one of the TTIs (or 3.05%). Seropositivity rates for HIV varied from 0.3 percent (87 cases) to 2.19 percent (621 cases) for HBsAg, 0.5 percent (144 cases) for HCV, and 0.05 percent (13 cases) for syphilis. There were no cases of malaria reported during this time. (7)

3. MATERIALS AND METHODS:

HCV, HIV 1 and 2, HBsAg Syphilis, and malaria pv and pf serological tests (quantitative) were performed using a test kit.)

TEST NAME TEST KIT NAME AND LOT NUMBER



HCV – TEST KIT NAME (STANDARD DIAGNOSIS, INC (SD)
LOT NO (02BDF00SA)

MALARIA TEST KIT NAME (ABBOTT), LOT NO (0SDDG008B)
HIV TEST KIT NAME (ABBOTT) LOT NO (03DDG001A)
HBsAg TEST KIT NAME (SD BIOSENSOR) LOT NO (C026033)
SYPHILIS (VDRL) TEST KIT NAME (RAPIKIT)

4. MATERIAL AND METHOD

4.1 METHOD HIV Test Kit Abbott (quantitative)

MATERIAL	REAGENT
plain tube	HIV buffer solution
syringe	protein conjugation buffer
pipette	
centrifuge	
timer	
HIV test kit	
blood sample	

PROCEDURE

- Take HIV buffer solution, place 2 drops at the test kit area
- Add 50ml of serum
- Add protein a conjugation
- add 2 drops of hiv buffer solution
- Wait for 20minutes and read the result

4.2 Estimation of HBsAg test kit SD BIOSENSOR (quantitative)

MATERIAL	REAGENT
Plain tube	Buffer solution
Syringe	
Pipette	
Timer	
HBsAg test kit	
Centrifuge	
Blood sample	

PROCEDURE

- Take 50ml Of serum at the test area
- Add 2 drops of buffer
- wait for 20 minutes and read the result

Estimation of HCV: Test kit STANDARD DIAGNOSIS, INC SD (quantitative)

4.3 MATERIAL

	REAGENT
Plane-tube	HCV buffer solution
Blood sample	
Syringe	
Pipette	
Timer	
HCV test kit	
Centrifuge	

PROCEDURE

- Take 50ml or serum at the test area



- Add 2 drops of HCV buffer solution
- Wait for 20 minutes and read the result

ESTIMATION OF SYPHILIS (VDRL): Test kit RAPIKIT (quantitative)

MATERIAL

Plain tube
Blood sample
Syringe
Pipette
VDRL kit
Centrifuge
Timer

REAGENT

HCV buffer

PROCEDURE

- Take 50ml of serum at the test area
- Add 2 drops of buffer solution
- Observed the result 20 minutes

4.4 EXAMINATION OF MALARIA TEST: test kit method (Abbott) quantitative test

MATERIAL

Blood in EDTA tube or Capillary Blood
Syringe
Pipette
Malaria test kit
Centrifuge
Timer
Blood sample

REAGENT

buffer solution

PROCEDURE

- Place a drop of blood test area
- Add 2 drops of malaria buffer.
- Read the result after 15 to 20 minutes

5. DISCUSSION:

The infectivity of HBV, HCV, HIV and syphilis amongst Indian donors has been documented as 0.66–12%, 0.5–1.5%, 0.084–3.87% and 0.85–3% respectively. HBV was the most frequent (1.24%) TTI encountered in presently concluded study, recapitulating earlier Indian literatures accomplished in similar context. On the other hand, Garg et al and Sinha et al reiterated much higher proportion of HBsAg seropositivity; as well as a lower seroprevalence reported by Adhikari et al and Unnikrishnan et al, contradicts the current elaboration.[1]

In the present study, HIV prevalence had been reducing. It ranged from 0.04% to 0.23% with an average of 0.14%. This was comparable with the study done by Fernandes et al. who reported 0.06% prevalence. However, this was lower than reported prevalence of 0.56%, 0.3% and 0.44% by Pahuja et al., Arora et al. and Pallavi et al. respectively. Enrollment of more female donors and more VDs helped to achieve reducing trend in HIV prevalence [Graph 3]

Hepatitis B surface antigen prevalence was 0.38% with a range of 0.23-0.65% in the present study. Decreasing trend was observed. Prevalence in the present study group was lower than reported findings of 1.27%, 2.23% and 1.7% by Pallavi et al., Pahuja et al. and Arora et al. respectively and comparable with study of Fernandes et al. (0.34%). Careful screening of donors for previous illness help to reduce the rate of HBsAg in donors. Moreover, vaccine is also available for HBV. WHO included India in Intermediate zone (2-7%) for prevalence of HBsAg. [9]

In the earlier studies, replacement donors frequently outnumbered the voluntary ones. Whatsoever in correspondence to existing worldwide trend, voluntary donors were profusely predominant in discussed study population. The overall serodominance among voluntary donors was overwhelmed by that of replacement donors, conquering a statistically significant difference. This above-mentioned difference in present study reciprocated the results obtained by Kaur et al and Koshy et al. [1]



In line with previous studies, the results of our study show that the likelihood of having TTDs (HCV, HBV, and HIV infections) among subjects with tattoos is higher than that of the non-tattooed population. This result is consistent with the known knowledge that sharing needles, syringes, or other equipment to inject drugs that may have come in contact with another person's blood is a high-risk factor for TTD. This result was unchanged even after additional adjustment for possible publication bias. Furthermore, we categorized the included studies into TTD subgroups in the general population, hospital patient, blood donor, IV drug user, and prisoner groups to elucidate the specific factors that may have been involved in the spread of TTDs. For HCV infection, all subgroups showed a significant increase in disease transmission rate among the patients with tattoos. However, for HBV infection, only the IV drug user and prisoner groups showed a significant increase in disease incidence rate in the subjects with tattoos after adjusting for publication bias[7]

6. ANALYSIS:

All the samples analysed by the standard procedure provided by the manufacturing company. We followed standard procedure for sample collection (bleeding) and screening for HIV, HCV, HbsAg, Syphilis, Malaria. All the test done by rapid kit methods.

7. FINDINGS :

Donors do not have any clinical symptoms and they are eligible for blood donation according to National Blood Transfusion Council. we observed screening reports as positive.

8. RESULT :

From November 2021 to December 2021, a total of 80 blood donors were examined (Table 1). The 11 volunteers are all male, with no females, and range in age from 21 to 65 years old; the screening includes the following: HIV-1 and HIV-2 each have a 9-digit number (88 percent) HBSag 6 (4.8%), HCV 3 (2.4%), SYPHILIS 7 (5.5%), MALARIA PF PV 7 (6.4%) respectively.

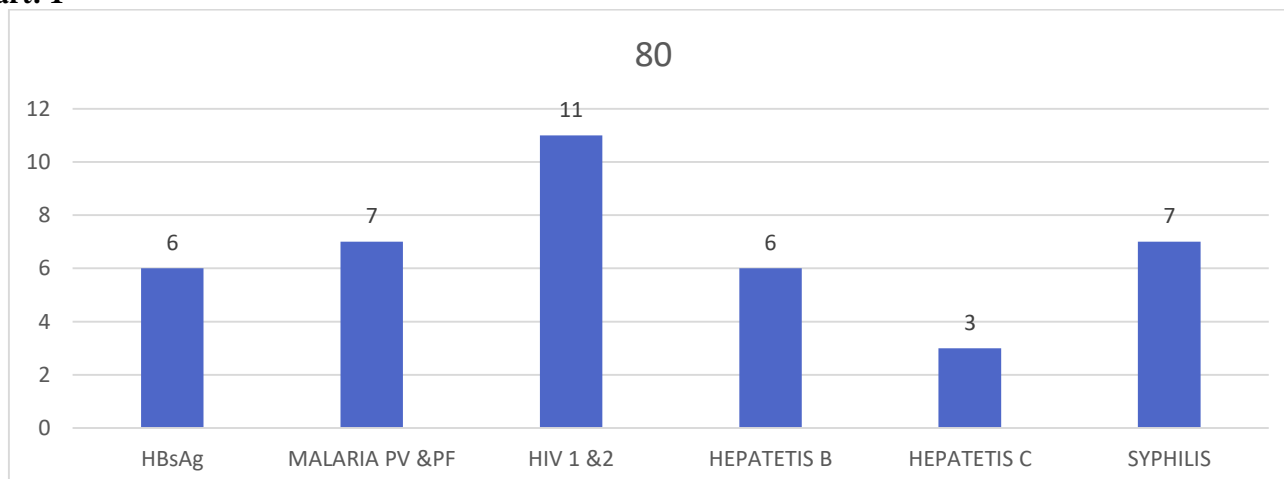
9. RECOMMENDATIONS:

HIV, HBsAg, HCV, Syphilis and Malaria Test examination must include and perform before donation.

Table: 1

TOTAL DATA	80
HBsAg	6
MALARIA PV &PF	7
HIV 1 & 2	11
HEPATETIS B	6
HEPATETIS C	3
SYPHILIS	7

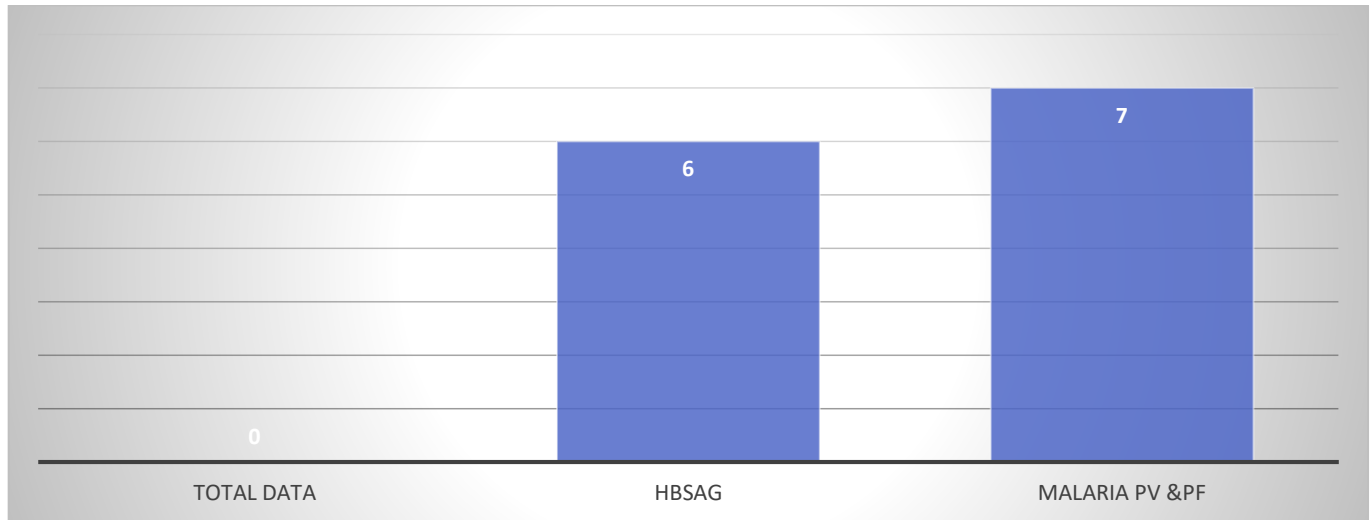
Chart: 1





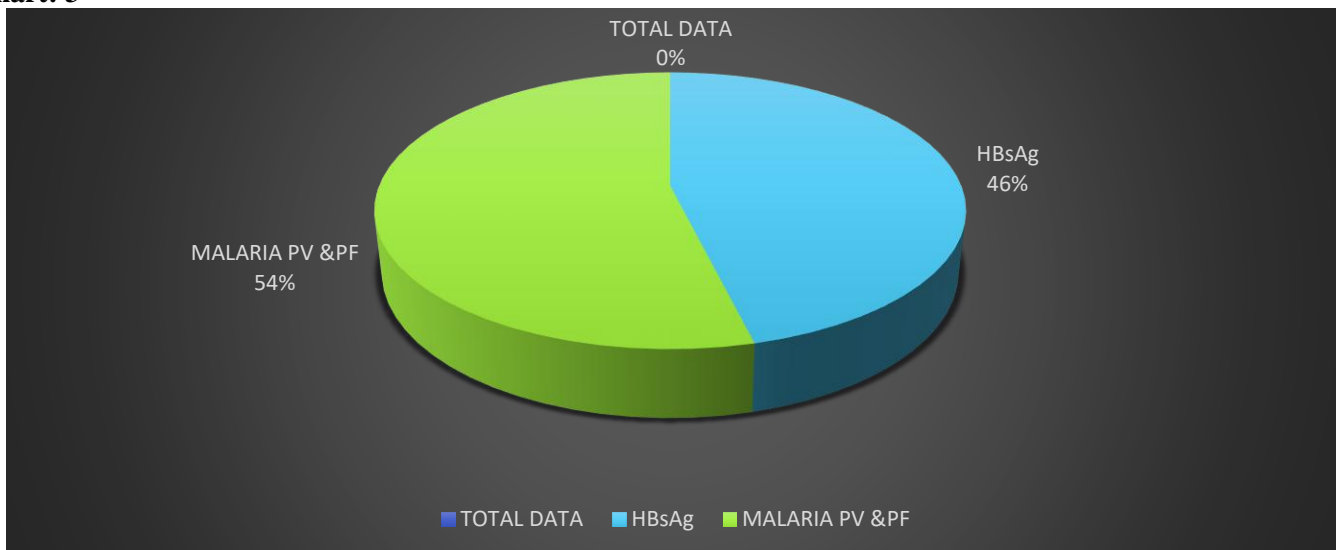
MALARIA

Chart: 2



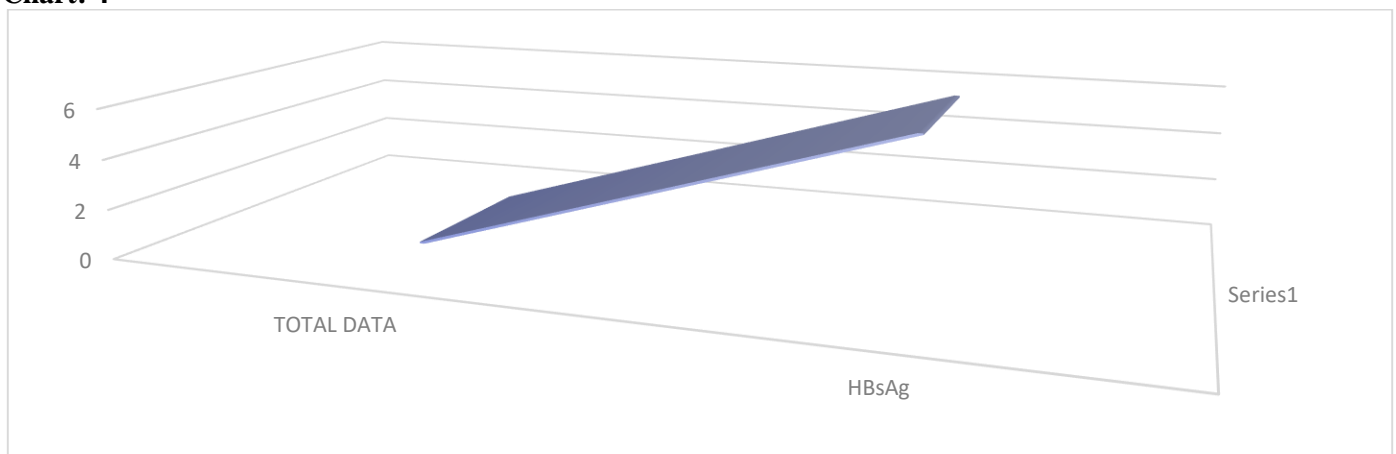
HIV

Chart: 3



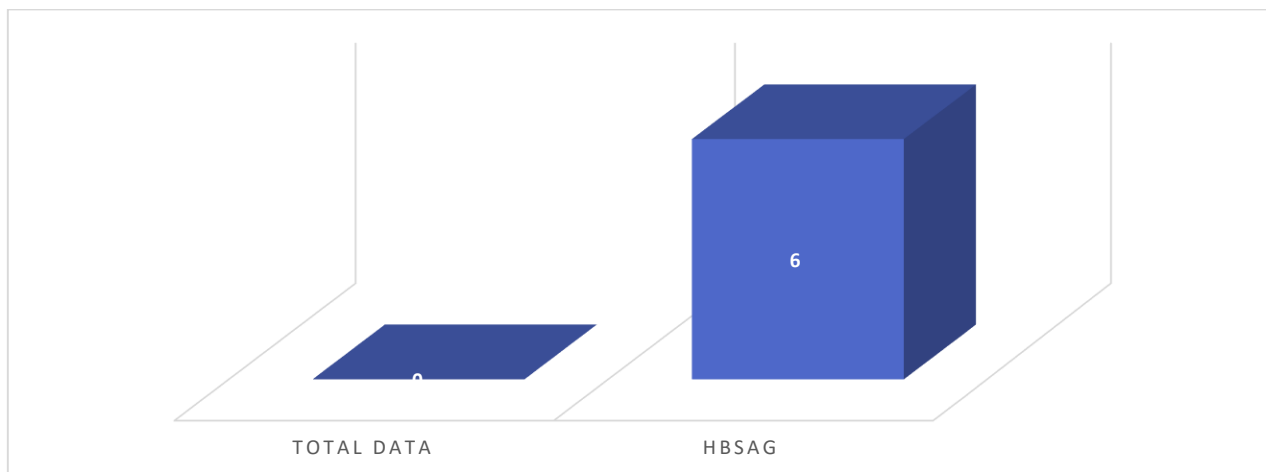
SYPHILIS

Chart: 4



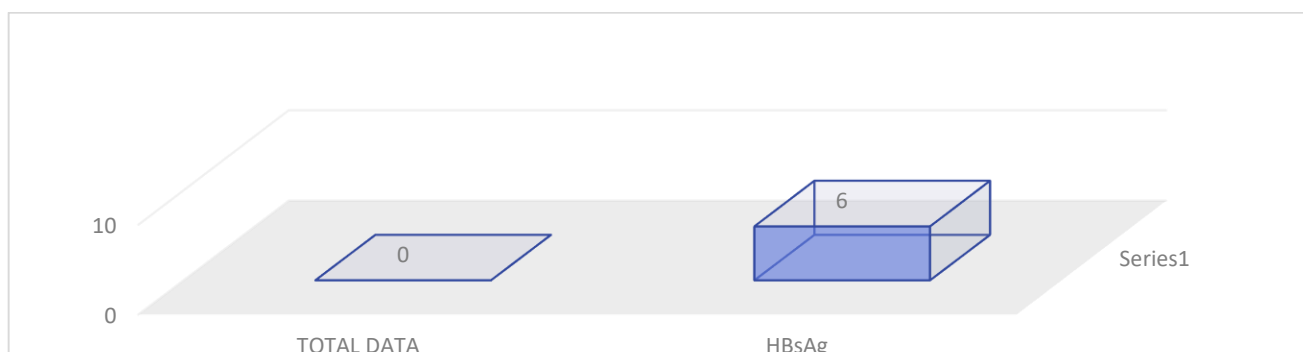


HCV



HBsAg

Chart: 5



10. CONCLUSION:

We have delineate the record of blood supply infectious disease experiment in before-donation and after-donation testing targeted at minimizing TTD, as well as current research and development to enhance the togetherness and removal of contaminated agents in this brief review.

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