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PREVALENCE OF TRANSMISSIBLE TRANSFUSION INFECTIONS AMONG BLOOD DONORS IN GDMCH, BLOOD BANK DHARMAPURI, TAMILNADU, INDIA.

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ABSTRACT

Introduction: Transfusion transmitted infections are a major problem associated with blood transfusion. Extensive donor selection and screening procedures will help in improving the blood safety. The aim of the study was to find out the frequency of transmissible infectious diseases among voluntary blood donors. **Methodology**: A total of 13,203 donors were analyzed for the prevalence of TTI over a period of 3 years. **Results:** Magnitude of infection was found to be 1.3%. Prevalence of Hepatitis B was highest (1.3%) followed by HCV (0.1%), HIV(0.08%) and Syphilis (0.03%). Prevalence was more in male voluntary donors. **Discussion**: Among the donors who were screened there was less prevalence of HIV whereas HBV was seen much frequently. Hence an strict screening method similar to this study will be helpful in identifying and avoiding diseases transmitted due to blood transfusion.

INTRODUCTION

Transfusion transmitted infections are a major problem associated with blood transfusion.[1] Blood transfusion and component therapies are with risk and may lead to the transmission of infectious agents from donor to recipient. Common infectious agents include HBV, HCV, HIV, Malaria and Syphilis.[2] With every unit of blood there is a 1% chance of transfusion associated problems including transfusion transmitted diseases.[3] Transfusion Transmitted Infections is still a major concern to patients, physicians, and policy makers who wish to see a risk free blood supply. Extensive donor selection and screening procedures will help in improving the blood safety.[4] The aim of the present study was to find out the prevalence of transfusion transmissible infection (TTI) in voluntary donors in our hospital transfusion service setup.

MATERIALS AND METHODS

The present study was carried out in GDMCH, Dharmapuri. A total of 13,203 donors were analyzed for the prevalence of transmissible transfusion infections over a period of 3 years from January 2013 to December 2016. Voluntary donations primarily obtained from walk in donors, Students and employees of the institution and neighboring colleges and outdoor blood donation camps. All samples were screened for (i) Hepatitis B surface antigen (ii) HIV (iii) hepatitis C Virus (iv) Syphilis (v) Malaria. All the reactive samples were repeated in duplicate before labeling them seropositive. The donated blood was discarded whenever the pilot donor sample was found positive for and TTI. The data were entered into Microsoft excel spread sheet 2013 and descriptive statistics was applied using the same.

RESULTS

A total of 13,203 voluntary donors were listed in the study. Only 6159 units were collected through outdoor camps. Majority of the donors were age between 18 and 30 years. 96% donations were from males. Out of this 13,203 blood donors, 1.34% (177) were tested reactive for blood transmitted infection 13% donors had donated previously, when compared to 87% first time donors.

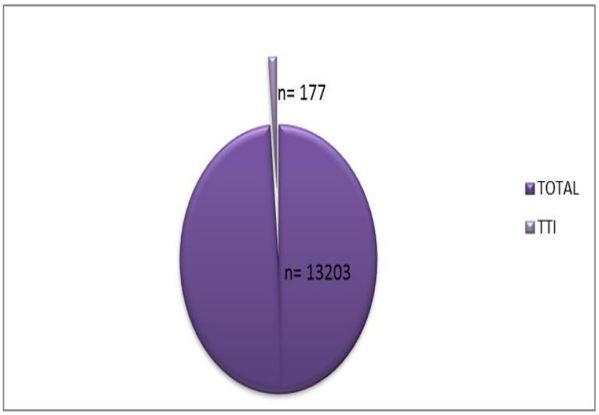

Fig. 1: Prevalence of Transmissible Transfusion Reaction.

Table I: Distribution of Year Wise Blood Donations.

Year	Voluntary		Total Donations
	Male	Female	
2014	4388	184	4572
2015	4011	141	4152
2016	4282	197	4479
	12,681	522	13203

Table II: Types of Infections Screened.

YEAR	HIV	HBs Ag	HCV	VDRL	Malaria	Total
2014	7	52	9	1	0	69
2015	2	47	3	3	0	55
2016	1	50	2	0	0	53
	10	149	14	4	0	177

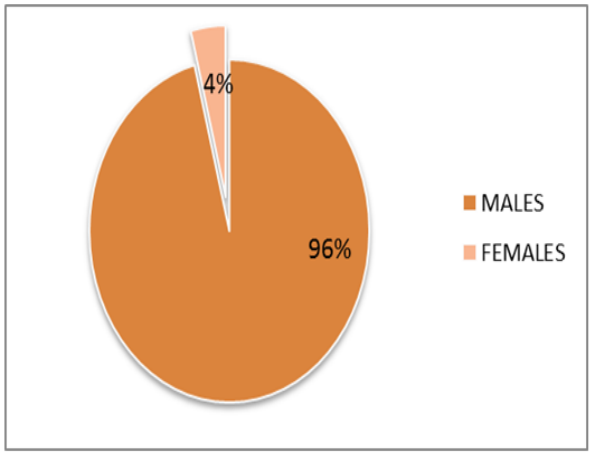

Fig. 2: Distribution of blood donors.

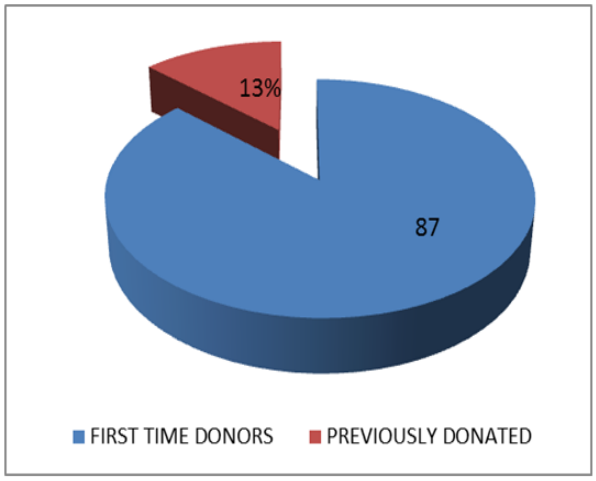

Fig. 3: Prevalence of blood transmitted infections among first time donors and previously donated donors.

DISCUSSION

In our present study, 1.34% of the donated blood was seropositive for at least one of the screened markers, which is low when compared to the studies done by Yan song et al in china (2.67%)[2] and Hilda Fernandes et al in Karnataka (0.6%).[4] In our study, first time donors pose a greater risk of infectious donation than repeat donors which is similar to the studies conducted by Yan Song et al, Ameen et al and Shang et al.[2,5,6]

The Prevalence of HIV infection in our present study was 1.13% which is similar to the studies Conducted by Zhan – Hua Ji and Zhong jun shao in china and Negri and gaur in India. This is in contrast with the studies conducted by Attahullah and khan et al in Pakistan, which showed a higher prevalence (2.68%).

In our study 96% of donations were from males, a finding similar to other studies[4,7,9], This could be explained on the basis that the Indian women have a very high incidence of anemia especially in the child bearing age and hence are likely to face disqualification while being screened for blood donation. The Prevalence of HIV infection in our study was 0.08% which is slightly higher than the studies conducted by Zhan-Hua Ji, Negri and Gaur, Attaullah and Khan and Hilda Fernandes et al.[10,12,4] In our study a decrease in the prevalence was seen from 2014 to 2016. Richa Gupta et al also reported a decreasing trend in HIV prevalence in blood donors during the period of 1997 to 2007.

The Prevalence of HIV infection in our present study is 0.1% which is lower than the studies conducted by Attaullah and Khan, Negri and Gaur. No Malaria cases were reported in our study which is similar to the studies conducted by Zhan – Hua Zi and Zhan jun sha[10], Attaullah and Khan[12], Richa gupta et al.[1]

Many of the Indian studies showed prevalence rates for HIV (0.51-3.87%), HCV (0.12-4%) HBV (1.2-3.5%) and Syphilis (0.3-0.82%).[8,9,13,18] A Very low prevalence rate in our study may be attributed to increased number of donors donating at the blood bank with strict screening criteria When compared to the number of donations from the camps.

CONCLUSION

Based on above results we conclude that to reduce the risk of these infections extensive donor selection and screening procedures can improve the blood safety. Voluntary blood donation has to be made a part of healthy life style enlightening the public about the

benefits of voluntary blood donations. Young people, higher educated groups and previous donors should be encouraged to donate blood to help ensure a long term safe blood supply.

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