



A RETROSPECTIVE STUDY OF VARIOUS REASONS FOR BLOOD DONOR DEFERRAL IN A TERTIARY CARE CENTRE

Immunohematology

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ABSTRACT

Background An adequate supply of safe blood is ensured by exercising donor deferral criteria and screening for Transfusion Transmitted Infections (TTI). The aim of this paper is to study the profile of blood donors and reasons for donor deferral in North India.

Method The study was conducted at a tertiary care hospital in Jodhpur. All those who donated between January 2017 to December 2017 were included in the study. Data was collected from donor deferral records of the blood bank and analysed using MS excel.

Results Most of the deferred donors were under the age of 25 (50.37%). Donors were predominantly male (78.24%). In terms of occupation, most subjects were students (29.58%) followed by private workers (25.18%). 64.79% of deferred donors were voluntary donors as most of the donors coming for donation to our institute were voluntary. The main reasons for deferral were consumption of medication in the past 72 hours (29.34%), a low haemoglobin level (27.14%), h/o jaundice (6.37%), and due to poor vein (4.40%). Among the TTIs identified, most samples were positive for Hepatitis B surface Antigen – HBsAg (0.87%), tested positive for Anti-Hepatitis C (HCV antibodies) (0.14%) and for Anti-HIV (0.07%).

Conclusion It was accomplished from this study that the majority of the donor population was young and educated, still there is need to educate the donor selection criteria to the society by the medical professionals. Knowledge and self-motivation of the donors are the key factors behind achieving cent percent reception of blood donors.

KEYWORDS

Blood Donors, Deferral, Transfusion-transmitted Infections

INTRODUCTION

In existing scenario, it requires an adequate supply of safe blood so that blood transfusion can be a vital, life-saving procedure. However, The National AIDS Control Organization's (NACO) statistics show that the annual rate of blood donation in India is about 7.4 million units, against the requirement of 10 million units.¹ Ensuring the safety of the donors by medical examination, their confidence and trust can be won and this increase their future willingness for donation.² A blood bank plays a pivotal role in ensuring the supply of safe blood as and when required. However given the ever changing socio-economic environment and human factors involved, healthy donor recruitment and retention is a challenge that faces the health industry today.³ Hence studying the profile of blood donors will help identify sections of the population which could be targeted to increase the pool of voluntary blood donors. While it is important to ensure that there is an adequate supply of blood, it is also essential that the blood collection process does not harm either the donor or the recipient. This is achieved by having donor deferral criteria⁴ and stringent screening of collected blood for possible TTIs⁵.

The aim of this study was to determine the profile of donors who presented themselves at a tertiary care hospital in Jodhpur as well as to learn the reasons for blood donation deferral among these donors.

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The aim of this study was to determine the profile of donors who presented themselves at a tertiary care hospital in Jodhpur as well as to learn the reasons for blood donation deferral among these donors.

METHOD

The present hospital-based retrospective study was carried out in the blood bank of a tertiary care hospital. Data were collected from the Donor deferral registry with respect to age and Gender. The causes of deferral were categorized as temporary and permanent. Study participants included all those who donated blood between 1 January 2017 and 31 December 2017.

Donors were selected in our Blood bank based on Drugs and Cosmetic Act 1940 which is supplemented by Guidelines of Directorate General of Health Services guidelines, Ministry of Health & Family Welfare (2003) and National AIDS Control Organisation (NACO). Predonation screening of the donors were done using Donor questionnaire followed by physical examination, Haemoglobin estimation.

RESULTS

A total of 2,863 people came to donate blood during the study period. In the present study males dominated the donor population (96.58%) with females making up the numbers with 3.42%. Voluntary donors formed 61.49% of the study group, while 38.51% were replacement donors. The most common occupations among deferred donors were students 28.01% (Table 1).

Table 1: Baseline characteristics of blood donors (N=2,863)

Reason For Deferral	Number (%)
On medication in the past 72 hours	120 (29.34%)
Low haemoglobin level	111 (27.14%)
Hypertension	13 (3.18%)
Fever	13 (3.18%)
Others	95 (23.23%)
Underweight	03 (0.73%)
Donated blood in the last 3 months	08 (1.96%)
Underage	08 (1.96%)
Other medical conditions (asthma, hypotension, h/o jaundice, h/o malaria, Tuberculosis)	36 (8.80%)
Menstruation	02 (0.49%)

Most of the deferred donors were under the age of 25 (50.37%). Donors were predominantly male (78.24%). In terms of occupation, most subjects were students (29.58%) followed by private workers (25.18%). 64.79% of deferred donors were voluntary donors as most of the donors coming for donation to our institute were voluntary. The main reasons for deferral were consumption of medication in the past 72 hours (29.34%), a low haemoglobin level (27.14%), h/o jaundice (6.37%), and due to poor vein (4.40%). Less common causes included being underweight, fever, being under age, history of malaria in the

past six months, menstruation, tattooing etc. (Table 2).

Table 2: Baseline characteristics of deferred donors (N=409)

Baseline Characteristics	Number (%)
Age (in years)	
18–25	206 (50.37%)
26–35	126 (30.81%)
36–45	51 (12.47%)
46–55	21 (5.13%)
56–65	05 (1.22%)
Gender	
Male	89 (21.76%)
Female	320 (78.24%)
Reasons for donation	
Voluntary	265 (64.79%)
Replacement	144 (35.21%)
Previous donation	
Yes	181 (44.25%)
No	228 (55.75%)
Occupation	
Student	121 (29.58%)
Businessman	103 (25.18%)
Service class	84 (20.54%)
Farmer	29 (7.09%)
Unemployed	28 (6.85%)
Housewife	16 (3.91%)
Labour	15 (3.67%)
Driver	13 (3.18%)
Total	409(100%)

Among the TTIs identified, most samples were positive for Hepatitis B surface Antigen – HBsAg (0.87%), tested positive for Anti-Hepatitis C (HCV antibodies (0.14%) and for Anti-HIV (0.07%). (Table 3)

Table 3: TTIs among blood donors (N=2,863)

TTI	Number (%)
HIV	02 (0.07%)
HBsAg	25 (0.87%)
Positive for Anti HCV antibodies	04 (0.14%)
VDRL	9 (0.07%)

DISCUSSION

The deferred donors in this study are young, 81.17% were under the age of 35, and males formed 78.24% of the donor population. Among deferred donors student made up 29.58% of the donor population, who by virtue of their education are more aware of the importance of blood donation. Professionals and people from the service sector formed 26.40% of the donor population. Corporate social responsibility is a new concept that has risen amongst the corporate sector⁶ and they do their part by organising blood donation drives. Furthermore, students usually form the target group when the blood bank organises any blood donation drive as they can easily be motivated in an effort to retain them as repeat voluntary donors. It is encouraging to note that the blood bank in this study has functioned in accordance with guidelines issued by NACO⁷ regarding banning professional donors as none were identified in the period of study. The total deferred donors who came for first time to donate were 55.75%.

The major infection among the TTIs was Hepatitis B (0.87%) followed by HCV (0.14%). Singh et al⁸ found that 1.8% of samples were rejected for Hepatitis B and 0.5% for Hepatitis C, while Kaur et al⁹ found 1.7% and 0.8% for HBV and HCV respectively. The Hepatitis B and Hepatitis C infection rates were lower than their respective national prevalence which was 1–5% and 1% respectively.¹⁰ In our study, 0.07% of the sample was positive for HIV, much lower than other Indian studies (Singh et al 0.8%, Kaur et al 0.6%).

The overall deferral rate was about 14.29%, similar to Lim et al (14.4%).¹¹

In a Saudi Arabian study¹², 26.8% were deferred for consumption of drugs, 15.5% for low haemoglobin but only 5.7% for hypertension. However, a number of other studies showed anaemia as the major cause (Arslan et al 20.7%)¹³ (Halperin et al 46%).¹⁴ In a study in Trinidad and Tobago¹⁵ a history of high-risk sexual activity was the commonest cause of deferral.

It is seen that the most common cause for deferral was the ingestion of a drug 72 hours prior to blood donation. There could be various reasons why this was a cause. One possibility is that potential donors were unaware of the prerequisites of blood donation, including drugs that cannot be consumed prior to a blood donation. The community needs to be educated regarding this. The blood bank could also follow-up patients who have been deferred due to drug intake and advise a later date for them to return, with specific instructions before they come for a donation which will enhance donor recruitment and retention in the long run.

Anaemic patients also comprised a major deferred group. Anaemia is very prevalent in a developing country like India¹⁶ and this is a significant cause for deferrals among donors who come forward enthusiastically for donation, but are unable to donate. Referring these cases to a physician for evaluation and treatment of anaemia and asking them to donate at a later date is critical in ensuring donor recruitment and retention.

The other common cause of deferral was hypertension accounting for 13.18%. A possible reason for this could be fear of phlebotomy, fear of the sight of blood etc., or white coat hypertension a common phenomenon seen in people almost as soon as they enter a hospital. This may be compounded by the fact that our study had a majority of first-time donors who would be more prone to these fears. Moreover, hypertension being a modern epidemic often goes undiagnosed and in most cases is an incidental finding.¹⁷

CONCLUSION

The study showed that most of the donors were young with the majority being students. This is an encouraging note, as they could be motivated to become regular voluntary donors. This study reported a fairly similar pattern of donor deferral as in other regional studies. Consumption of medications in the past 72 hours, Low haemoglobin levels and hepatitis B reactivity were the most common factors for temporary and permanent donor deferrals, respectively. Male donors were significantly higher than female donors. Appropriate donor questionnaires and proper implementation of SOPs are the first line of defense and minimize the risk of TTIs.

The major cause for deferral was consumption of medications in the past 72 hours. Hence it is essential that potential donors be furnished with knowledge pertaining to deferral criteria as this might help exclude the rejection factor when one is deferred and increases the likelihood of returning at a later date.

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