

Deferral Patterns of Voluntary Blood Donation in a Tertiary Care Teaching Institute.

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ABSTRACT

Background: Blood transfusion is a vital, life-saving procedure but requires an adequate supply of safe blood from a healthy donor. The donor selection is necessary in addition to the screening of blood for infectious diseases. However deferrals lead to loss of precious blood/components available for transfusion. For preventing this we should have knowledge of causes as well as frequency of deferral. Objectives: To analyse various causes of deferrals and to quantify the losses due to donor deferral. **Methods:** This retrospective study was done in the department of Immunohematology and blood transfusion at GGS Medical College and Hospital, Faridkot. Data was collected over a period of one year from August 2014 to July 2015. Standard operating procedures based on national guidelines were used for donor selection and deferral. **Results:** An overall deferral rate of 6.26% was observed. Amongst the various reasons for deferral the most common reason was low hemoglobin level (27.3%) followed by intake of medication(16.4%). Overall temporary deferrals were more (89%) as compared to permanent deferrals (11%). **Conclusion:** There is a need for community education and public awareness programs to cut down the loss of precious donors as well as stringent screening criteria for safety of blood and blood components.

Keywords: Blood donor, deferral, transfusion transmitted infections.

INTRODUCTION

In current medical and surgical practice, blood transfusion can be a vital, life-saving procedure. It requires an adequate supply of safe blood from a healthy donor. The donor selection is necessary in addition to the screening of blood for infectious diseases.^[1] A stringent process of donor selection aimed at assessing the suitability of prospective donors is therefore essential in ensuring the safety and sufficiency of blood supply, safeguard the health of the recipients of transfusion as well as that of the donors. This also ensures that suitable donors are not unnecessarily deferred.^[2] A blood bank plays an important role in ensuring the supply of safe blood as and when required. This is achieved by having donor deferral criteria and stringent screening of collected blood for possible transfusion transmissible infections (TTI).^[3] However deferrals lead to loss of precious blood/components available for transfusion. For preventing this we should have knowledge of causes as well as frequency of deferral.^[1] Deferrals are further divided into permanent and temporary. Few studies done in India in the past had documented different common reasons for deferral of whole blood donors highlighting differing

demographic profile in different parts of the country.^[4] Some donors may be unfit or unsuitable for donating blood. Therefore, it is the responsibility of Blood Transfusion Officer (BTO) to identify unsuitable donors and defer them as appropriate either temporarily or permanently.^[5] Knowledge of the rate and reasons for donor deferral is quite essential as this can guide future donor recruitment strategy.^[2] This study was done to assess the current rate and reasons for donor deferral and to identify temporarily deferred donors with curable reasons for future donation.

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MATERIALS AND METHODS

This retrospective study included all the donors reporting for whole blood donation in the Deptt. of Immunohaematology and Blood Transfusion over a period of one year from August 2014 to July 2015 at GGS Medical College and Hospital Faridkot. Data

was taken from the records of blood bank. Standard Operating Procedures based on national guidelines were used for donor selection and deferral. The donors were evaluated on the basis of a brief clinical history which included a questionnaire enquiring history of any current illness, medication, allergy, previous history of jaundice, typhoid, malaria, tuberculosis, any indulgence in high risk behaviour. Thereafter, brief physical examination including blood pressure, pulse rate and temperature was done and haemoglobin estimation of the donor was performed. All male donors were screened for Hb using CuSO₄ method which is based upon the principle of specific gravity of haemoglobin. All female donors and doubtful values of hemoglobin for male donors (by CuSO₄) were confirmed for correct Hb by Hemocue Hb 201+. Hemoglobin estimation by these two complimentary methods proved to be sensitive and cost effective screening tests.

RESULTS

A total of 12838 pre-donation screening interviews were conducted over a period of one year, out of which 12034 (93.73%) were found to be fit for donation. 6.26% (804 out of 12838) blood donors were deferred due to various reasons [Figure 1]. 349 donors (43.4%) were between the age group of 25-39, and 270 (33.5%) between 18-24 years.

Deferral rate of males (4.37%) was more than females (1.88%). Out of 804 deferred donors, 718 (89%) were temporary and 86 (11%) were permanent [Figure 2]. The most common reason for deferral of blood donors was low haemoglobin 27.3% closely followed by medication which was 16.4% [Table 1]. Breast feeding, headache, vaccination are some of the other causes.

Table 1: Causes of Deferral

Cause	Number	Percentage deferrals	Type of Deferral
Low Hb	220	27.3%	Temporary Deferral
Medications	132	16.4%	
Alcohol abuse	95	11.8%	
Underweight	48	5.9%	
H/O typhoid, jaundice and malaria	64	7.9%	
Surgical causes	40	4.9%	
Previous donation within 3 months	32	3.9%	
Over or under age	28	3.4%	
Menstrual cycle	22	2.7%	
Others	36	4.4%	
Abnormal BP	43	5.3%	Permanent Deferral
Seropositive for HIV, Hepatitis B and Hepatitis C	32	3.9%	
High risk behaviour	11	1.3%	

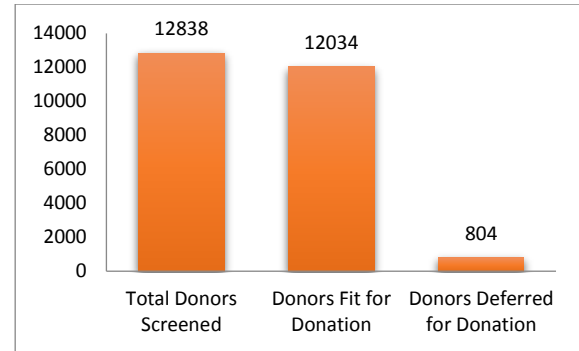


Figure 1: Donors.

FREQUENCY OF PERMANENT AND TEMPORARY DEFERRALS

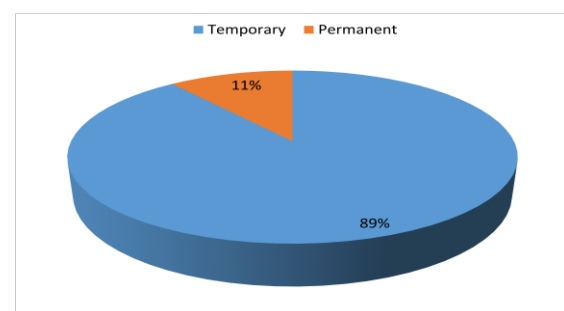


Figure 2: Frequency of Permanent and Temporary Deferrals.

DISCUSSION

An appropriate process of blood donor selection is very important in achieving safety in blood transfusion, as the desired aim is to protect and safeguard the health of both the donor and the recipient of blood and blood components. However, unnecessary deferral of blood donors may result in the loss of potential donors particularly in our society, where the culture of blood donation is still very poor.^[6] Various studies have reported different rates of donor deferrals. These differences differ from one region to another and also from one blood centre to another even within the same region. Some studies report deferral rates as low as 4–6%,^[7,8] while others as high as between 15–21%.^{[[9-11]} The differences in the deferral rates may probably be due to the differences in the donor selection criteria used in the different studies. The present study showed that although donor deferral rates were very much similar in different populations, the reasons for deferral differ, which reflects the difference in socioeconomic status and environment. However, some studies showed different deferral rate which could be due to different donor selection criteria. The donor deferral can be reduced by providing information and educating the donors. A study done by T L Hillgrove et al,^[18] to understand non return of blood donors after a temporary deferral concluded that deferral reduces the likelihood of returning in a

number of ways relating the destruction of habits, the introduction of practical and emotional hassle to the donation process and reduced strength of blood donor identity. The findings highlight the need to improve communication at the time of and following deferral, to enhance aspects of the deferral process to ensure individuals feel valued and to maintain the convenience of giving blood to increase the likelihood of return.

S No.	Year	Author	Deferral Rate
1.	1993	Lim et al ^[12]	14.4%
2.	1999	Lawson- Ayayi and Salmi et al ^[13]	10.8%
3.	2007	Arslan et al ^[14]	14.6
4.	2008	Rabeya et al ^[15]	5.6%
5.	2008	Zou et al ^[16]	12.8%
6.	2009	Bahadur et al ^[17]	9%

Bashawri LAM in a study concluded that it is important to provide the donor with a clear message on the deferral status.^[19] Increased public education about blood donation and common causes of donor deferral may lower deferral and prevent a negative impact on the donor as well as subsequent blood donation. Public education is also needed to recruit as many voluntary blood donors as possible.

CONCLUSION

There is a need for stringent donor screening guidelines to improve safety of blood and blood components. Also, the study highlights the importance of community education and public awareness program to cut down the loss of precious donors.

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