



DEFERRAL PATTERN AMONGST VOLUNTARY BLOOD DONORS IN AHMEDABAD: A RETROSPECTIVE STUDY

Transfusion Medicine

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ABSTRACT

Voluntary blood donation is the backbone of a safe and sustainable blood transfusion service. Donor deferral may reduce the immediately available donor pool and can affect blood availability. This retrospective study was undertaken to analyze the reasons for deferral among voluntary blood donors in Ahmedabad, Gujarat, according to age and gender, and to assess their implications for blood safety and availability. A record-based retrospective analysis of donor records of the Indian Red Cross Society, Ahmedabad, was conducted for the period January 2024 to December 2024. Deferrals were categorized according to gender, age group, and temporary or permanent status. Among 74,360 voluntary blood donors, 14,868 (19.99%) were deferred. The leading reasons for deferral were low hemoglobin (43.87%), antibiotic use (7.13%), recent surgery (3.92%), recent tattooing (2.21%), and thyroid disorders (2.15%). The detailed study record reports that 97.1% of deferrals were temporary, with the highest prevalence among donors aged 18–25 years, while permanent deferrals accounted for 0.57%. Among female donors, low hemoglobin was the predominant reason for deferral, followed by antibiotic use, thyroid disorders, underweight status, and recent surgery. Among male donors, low hemoglobin was also the leading reason, followed by antibiotic use, recent surgery, high blood pressure, and recent tattooing. The findings highlight the importance of appropriate counselling, health awareness, nutritional intervention, and follow-up of temporarily deferred donors to support donor retention and blood availability.

KEYWORDS

Blood Donation; Donor Deferral; Blood Safety; Voluntary Blood Donors

INTRODUCTION

Voluntary blood donation is an important component of a safe and sustainable blood transfusion service. Donor eligibility policies are designed to ensure that individuals selected for donation are suitable to donate and to protect recipients from potential harm. Deferral of otherwise willing donors can reduce the available donor pool and may contribute to challenges in maintaining adequate blood supplies. Understanding the pattern and reasons for donor deferral is therefore important for improving donor recruitment, retention, counselling, and blood availability.

Previous studies have described a range of causes for blood donor deferral, including low hemoglobin, medication use, recent surgery, tattooing, medical conditions, and risk factors associated with transfusion-transmitted infections. The distribution of these reasons may vary according to donor characteristics and local population patterns. This study describes the pattern of voluntary blood donor deferral recorded at the Indian Red Cross Society, Ahmedabad.

Objectives

- To analyze the reasons for deferral among voluntary blood donors in Ahmedabad, Gujarat, according to age and gender.
- To describe the distribution of temporary and permanent donor deferrals.
- To assess the implications of donor deferral for blood safety and availability.

MATERIALS AND METHODS

Study Design: A record-based retrospective study was conducted using voluntary blood donor records from the Indian Red Cross Society, Ahmedabad.

Study Period: Records from January 1, 2024 to December 31, 2024 were reviewed.

Study Population and Variables: The study included records of voluntary blood donors. Donor deferrals were categorized according to the recorded reason for deferral, gender, age group, and whether the deferral was temporary or permanent.

Data Analysis: The available records were summarized using frequencies and percentages. The study focused on identifying the leading causes of deferral and describing gender-wise and age-wise patterns.

RESULTS

A total of 74,360 voluntary blood donors were recorded during the study period. Of these, 14,868 (19.99%) were deferred for various reasons. The five leading causes were low hemoglobin (43.87%), antibiotic use (7.13%), recent surgery (3.92%), recent tattooing (2.21%), and thyroid disorders (2.15%).

Table 1. Major Reasons for Voluntary Blood Donor Deferral

Rank	Reason for deferral	Percentage
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1	Low hemoglobin	43.87%
2	Antibiotic use	7.13%
3	Recent surgery	3.92%
4	Recent tattooing	2.21%
5	Thyroid disorders	2.15%

The study reports that 97.1% of deferrals were temporary, while permanent deferrals accounted for 0.57%. Permanent deferrals included conditions or histories such as epilepsy/convulsions, risk factors for transfusion-transmitted infections, and chronic heart, lung, or kidney diseases. The highest prevalence of deferral was observed among young donors aged 18–25 years.

Table 2. Gender-wise Pattern of Selected Reasons for Deferral

Gender	Leading recorded reasons	Reported percentages
Female	Low hemoglobin	67.91%
	Antibiotic use	2.87%
	Thyroid disorders	1.96%
	Underweight status	1.66%
	Recent surgery	1.38%
Male	Low hemoglobin	28.78%
	Antibiotic use	10.59%
	Recent surgery	5.97%
	High blood pressure	5.10%
	Recent tattooing	3.22%

The study records also report that females constituted a larger proportion of deferrals attributed to low hemoglobin, whereas hypertension accounted for a greater proportion among male deferrals. Thyroid disorders were reported in both genders; because the donor pool was predominantly male, more male donors were recorded with this reason.

DISCUSSION

The present retrospective analysis demonstrates that donor deferral affected approximately one-fifth of voluntary donors recorded during the study period. Low hemoglobin was the predominant reason for deferral, accounting for 43.87% of all deferrals. The predominance of low hemoglobin, particularly among female donors, indicates an important area for donor education, nutritional counselling, and appropriate follow-up.

Most deferrals were temporary according to the detailed study record. Temporary deferral provides an opportunity for donor retention because the donor may become eligible after the relevant period or after appropriate management of the underlying reason. Counselling deferred donors about the reason for deferral, the expected duration, and measures that may help address modifiable factors can therefore support future return to donation.

The findings should be interpreted in the context of the study design. This was a retrospective analysis of records from a single blood-

donation centre in Ahmedabad and therefore reflects the donor population and screening practices represented in those records.

CONCLUSION

This study highlights the major causes and demographic patterns of voluntary blood donor deferral in Ahmedabad. Low hemoglobin was the leading recorded reason for deferral, while most deferrals were temporary. A structured database and systematic follow-up of deferred donors could support nutritional counselling, health education, and donor retention. Public awareness regarding common reasons for deferral and regular health check-ups may also help reduce avoidable deferrals and strengthen voluntary blood donation.

Recommendations

1. Provide focused nutritional counselling to donors deferred because of low hemoglobin.
2. Maintain a structured database to facilitate follow-up and re-invitation of temporarily deferred donors when they become eligible.
3. Strengthen donor education regarding temporary deferral criteria, including medication use, recent surgery, and tattooing.
4. Continue monitoring deferral patterns by age and gender to identify locally relevant opportunities for donor education and retention.

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