

Prevalence of Various Reasons for Donor Deferral In Blood Bank, Jhalawar Hospital and Medical College Society, Jhalawar

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Abstract

Introduction: Blood donation and its subsequent transfusion to recipients are considered as an important life-saving intervention in healthcare emergencies

Materials and Methods: The present retrospective study was carried out at Jhalawar Hospital and medical college society blood bank, Jhalawar district, Rajasthan, India, during the 1-year period from January 2020 to December 2020.

The data and information of deferred donors were retrieved from deferral donor register, donor selection form. This study aims to study donor deferral rate and determine the prevalence of various reasons for donor deferral at Jhalawar hospital and medical college society, Jhalawar, Rajasthan

Result: In the present study, Out of total 11559 registered pre donation screening interviews 11223 were males (97.093 %) and 336 (2.906 %) were females. Total number of deferrals due to various reasons were 231 giving an overall incidence of 1.99 %. Out of these 231 deferrals, 185 (80.086%) were voluntary and 46 (11.913%) were replacement donors. Out of these 231 deferrals, 203 (87.88 %) were deferred due to temporary causes and 28 (12.12 %) were deferred due to permanent causes. Most common causes for deferral were underage/underweight (35.06%) and low haemoglobin (34.63%).

Conclusion: Most common causes for deferral were low haemoglobin, low body weight and underage donor. Strict donor selection criteria and donor education regarding self-exclusion is the key point of safe blood supply. A large number of temporarily deferred donors can be recruited back into the donor pool if managed actively. This will also help in maintaining a healthy donor pool in the long run & improvement of efficiency of the donor programme.

Keywords: Blood donation, Pre donation screening, Deferral

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Introduction

Blood donation and its subsequent transfusion to recipients are considered as an important life-saving intervention in healthcare emergencies. Recruitment of voluntary, safe, and healthy blood donors for the provision of quality blood products

to needy patients in a timely-manner is a constant challenge faced by blood transfusion services in India. According to the world health organisation (WHO), a minimum need to meet a nation's blood requirement is approximately 1% of its

population. In India, annual blood collection during 2016–17 was 11.1 million units against the target of 13 million units with a shortfall of 1.9 million blood units[1,2]. Despite having a huge population of over 1 billion where 50% to 60% are eligible for blood donation, still, a continuous shortage of blood exists[3]. Therefore, it is of utmost importance to take necessary measures to increase the blood supply without compromising on the donor's health or safety of transfusion recipients. Besides donor recruitment measures, developing strategies for retention of already motivated and recruited donors is considered as "need of the hour" to meet the rising demand despite shrinking donor pool[4-7]. Deferring the donors sometimes leaves a negative impression about self in some individuals which will lead to have a wrong or unsuitable opinion on blood donation process itself. Therefore, these individuals who are deferred once will rarely turn up for a blood donation in due course of future.[8] The deferral system is of two kinds – temporary and permanent. A temporary deferral for a specific period of time only, those individuals need clear and acceptable counseling and education. So that; they can donate blood and continue to be healthy donors. Thus, it is the responsibility of blood banks to identify unfit donors and defer them as temporary / permanent; based on the clinical, personal history and evidence available[9]. This study was carried out to know the prevalence of various reasons for donor deferral at Blood Bank, Jhalawar hospital and medical college society, Jhalawar.

Materials and Methods:

Type of study: Retrospective study

Place and Duration of study: Blood Bank, Jhalawar hospital & medical college society, Jhalawar, Rajasthan covering the period between Jan 2020 to Dec 2020.

Sampling Methods: All records including, donor registers, completely filled donor selection form which included

the type of donation (voluntary/replacement), the patient's details, pre-donation questionnaire, counselling details and medical examination findings available for each case were analysed and tabulated and compare with similar studies.

Statistical Methods: All Data were collected and analysed in percentage.

Inclusion and Exclusion Criteria-

Every blood donor who was willing to donate blood at the blood bank was screened based on donor questionnaires prepared according to criteria laid down by Director General of Health Services and Drug controller of India, after which a detailed medical history was taken.

Criteria for selection -

1. Whose age is 18-65 years.
2. Whose weight is >45 kg and Hemoglobin not less than 12.5 gm%.
3. There is no history of blood donation in last 3 months for males and 4 months for females.
4. No complain of any acute and chronic disease.
5. Do not taking any medicine that enlisted in causes for deferral.
6. No history of vaccination against any vaccine that come under causes for deferral within deferral time limit for particular vaccine.
7. Non-pregnant and non-lactating female.
8. No history of blood transfusion in last 12 months.
9. No history of major surgery in last 12 months and 6 months in case of minor surgery.
10. Donor free from any disease transmissible by blood transfusion.
11. Donor shall not be fasting before blood donation.
12. Defer for the period of menstruation.

13. Pulse 60-100 with no irregularities.

Criteria for exclusion –

Any person visiting for blood donation purpose who did not meet the inclusion criteria was excluded from study.

Voluntary, whole blood donors recruited at out-door blood donation camps and in-house(blood bank) were included while apheresis donors were excluded from the study

Result

A total number of 11559 donors who came forward for donation during the study period of one year from January 2020 to December 2020. Out of 11559 registered pre donation screening interviews 11223 were males (97.093 %) and 336 (2.906 %) were females [Table 1]. Out of which, 11328(98.001%) were accepted for blood donation and 231(1.998%) were deferred for various reasons.

Out of these 231 deferrals, 185 (80.086 %) were came for voluntary donation and 46 (19.913 %) were came for replacement. [Table 2].

Out of these 231 deferrals, 203 (87.88 %) were deferred due to temporary causes and 28 (12.12 %) were deferred due to permanent causes [Table 3].

Out of total 231 deferred donors, 203 (87.88 %) were deferred temporarily because of anaemia (Hb<12.5mg) 80, 7 for alcohol consumption within 24 hours before donation, 81 for underweight(<45kg)/underage, 5 for vaccination, 18 for recent donation, 1 for malaria, 1 for surgical history, 4 for recent drug intake, 1 for jaundice, 3 for fever, 2 for tattoo on skin [Table 4].

There were 28 permanently deferred donors, 7 due to Hepatitis B, 1 due to asthma, 3 due to diabetes on insulin, 1 due to anticonvulsant drugs, 1 due to cardiac disease, 1 due to thyroid drugs and 12 due to age more than 65 years [Table 6].

Discussion

The blood donor selection is a very important step for safe and healthy blood transfusion. During the donor selection process, the donors who are disqualified for donating blood are called deferred donors. Donors may get deferred due to temporary or permanent causes. Deferring donors also protects the donors from possible adverse donor reactions and avoid consequent negative impact on the donor motivation. Blood donors are the backbone of safe blood transfusion practice. Strict criteria for blood donation are not only protect donor from adverse effects but also extremely important so as to prevent transfusion transmittable infections spreading to the recipients. During the proper donor selection process, some donors get deferred because of various permanent and temporary causes. It is essential to understand various reasons of donor deferral for both temporary and permanently deferred donors, so that in case of temporarily deferred donors proper follow up can be conducted to bring back donors for blood donation. In case of permanently deferred donor's proper notification and counselling can be given. Donor deferral rates in blood centers vary from 5 to 24% [10] leading to huge losses in terms of available blood units for transfusion. We undertook this retrospective study to obtain the prevalence of deferral in our whole blood donors.

A total of 11559 donors came for donating blood in our blood bank and blood donation camps organized during this period of our study. The donor deferral rate reported in our study was 1.998% which is comparable to the study of Jethani *et al.*, showed deferral rate of 2.6% which was comparable with our study [11]. Study done by Choudhary RK *et al* reported 16.4% deferral rate which is higher as compared to our study [12]. Studies in literature showed varied rates of blood donor deferral ranging from 5.19% to 35.6% across the world [13]. These variations of donor referral rates may be

because of different donor selection criteria, variations in prevalence of anemia and due to different geographical locations. In our study, most of the donors 11223 were males (97.093%), women accounted for only (2.906%) similar to other studies also shows very low female donor population like Krishna MC et al. [14]–1.55%, Sunder P et al. [15]–11.27%, Sareen R et al.[16] 8.39%, Choudhary RK et al.[12] 8.68% and Girish CJ et al.[17] 2.66%.

This is due to fear, lack of awareness, physiological reasons, ignorance and lack of motivation in females.

It was observed that temporary cause of deferral (87.88 %) are more common as compared with the permanent cause (12.12%) and found to be highly

significant in present study, similar with other studies by Kumar S.H. *et al.*, [18] where temporary deferrals rate was 90.3% and permanent deferral rate was 9.7% of total deferrals. The overall most common causes of temporary deferrals amongst the blood donors in present study were anemia (34.63%), underweight/underage (35.064%) and recent donation (7.92%) and alcohol intake 3.03%. All the temporary deferral individuals must be educated for cause and period of deferral and proper counselling should be given to them so that they can donate blood in future. The most common causes of permanent deferral in present study were donor age more than 65 year (5.194%) followed by high-risk history (3.030 %), diabetes (1.298%) and cardiac diseases (0.432%).

Table 1: Distribution of persons by Gender, who came for blood donation

	No. of total registrations	Percentage of total registration
Male	11223	97.093%
Female	336	2.906%
Total	11559	100%

Table 2: Distribution of Blood Donation Deferral by Donor Type

	No. of Deferrals	Percentage of total Deferrals	Percentage deferrals of total Registration
Voluntary	185	80.086%	1.60%
Replacement	46	19.913%	0.39%
Total	231	100%	1.99%

Table 3: Distribution Of Blood Donation Deferral

	No. of deferrals	No. of deferrals in %
Temporary	203	87.88 %
Permanent	28	12.12 %
Total	231	100 %

Table 4: Distribution Of Blood Donation Deferral By Causes

SN	Causes	No. of deferrals	No. of deferrals in %
1.	Anemia	80	34.63
2.	Under weight and under age	81	35.06
3.	Medical and surgical causes	19	8.22
4.	High risk history	7	3.03
5.	Others	44	19.04

Table 5: causes of temporary deferrals

SN	Causes	Number of deferral donor	Percentage from Temporary deferral (%)	Percentage from Total deferral (%)
1.	Recent Drug intake	4	1.97	1.731
2.	Vaccination	5	2.46	2.164
3.	Anemia	80	39.408	34.632
4.	Underweight/ Underage	81	39.901	35.064
5.	Skin lesions /tattoo on skin	2	0.985	0.865
6.	Jaundice	1	0.492	0.432
7.	Fever/ Viral Infection	3	1.477	1.298
8.	Surgery	1	0.492	0.432
9.	Malaria	1	0.492	0.432
10.	Alcohol intake	7	3.448	3.03
11.	Recent donation	18	8.886	7.92
	Total	203	100%	87.88%

Table 6: Causes of Permanent Deferral

SN	Permanent deferral (cause)	TOTAL	Percentage from Total deferral (%)
1	Diabetes on insulin	3	1.298
2	Asthma	1	0.432
3	High risk history	7	3.030
4	Epilepsy(Anti-convulsant drugs)	1	0.432
5	Chronic liver disease	2	0.865
6	Cardiac Disease	1	0.432
7	Thyroid drugs	1	0.432
8	Donor age >65	12	5.194
	Total	28	12.12%

Conclusion

Most common causes for deferral were underage/underweight (35.06%), low hemoglobin (34.63%).

The deferral rate can be reduced by providing information and education of selection criteria. Hence analysis of rejection pattern will not only help in donor and recipient safety but also in maintaining a healthy donor pool in the long term. Strict donor selection criteria and donor education regarding self-exclusion is the key point of safe blood supply.

To increase the pool of donors, we should educate donors about the cause and time period of deferral. Safety measures for donors should be taken before donation. Precautionary measures like checking the previous history of blood donation, medical history; examination and screening of other medical conditions should be made mandatory before donor selection. The major causes of deferral were low hemoglobin concentration, low body weight, under or over age donor, typhoid etc. Temporary deferral cases can also be decreased by providing basic knowledge of deferral conditions. It is necessary that every blood bank should

analyze rates and patterns of donor deferral due to temporary reasons can be avoided by conducting awareness programs. All this step will ensure safe and quality blood products quality for the recipients.

The community should be educated about the significance of blood donation and about the myths and social stigma associated with blood donation to reduce the deferral rate via social awareness programmes.

Strict donor selection criteria and donor education regarding self-exclusion is the key point of safe blood supply.

Recommendations

1. All the potential donors deferred for temporary reasons should be counselled and educated about the reason of deferral and encouraged to return again later to ensure the availability of safe and adequate supply of blood.

2. Permanently rejected donors should be advise for proper treatment.

Contribution from authors

Dr. Manish Kumar: Preparation of manuscript, Data collection, Data compiling, literature review, final approval.

Dr. Brajendra Shakyawal: Manuscript editing, literature review, final approval

Dr. Umed Singh Solanki: Literature review, Final approval

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