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Research Article

Causes of deferrals during blood donation on healthy people of Gurugram: A crosssectional study

Ashok Kumar Sah*, Rajesh Prasad Jayaswal, Meenakshi, M Vijayasimha

Department of Medical Laboratory Technology, Amity Medical School, Amity University Haryana, Gurgugram, India- 122413.

ABSTRACT

Blood transfusion is a life-saving process usually indicated for blood loss, surgical procedure, and accidental cases. The supply of blood to the recipients during emergency conditions are expected to be fulfilled by organizing blood donation camps especially at colleges, universities, offices, shopping malls, private/government organizations, army and police stations. Such camps collect essential information from the volunteer donors which may further help to study the causes of donor deferrals in different populations. In the present study, the causes of temporary and permanent deferral among the people of Gurugram was analyzed. In 431 donors registration, total deferrals cases were 110 and the most common reason for deferrals were anemia, low BP, animal bite, typhoid, and menstrual cycle etc. The number of female deferrals were higher than that of males. Our study revealed temporary and permanent deferral causes and motivated temporary deferral cases for future donations while those with permanent deferral conditions were advised for proper medications.

Keywords: Blood Donation, Donor, Deferral, Anemia, Transfusion

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*Address for Correspondence:

Ashok Kumar Sah, Department of Medical Laboratory Technology, Amity Medical School, Amity University Haryana, Gurgugram, India- 122413.

INTRODUCTION

A unit of blood can save the life of four-persons in critical conditions. In the present scenario, younger generations step forward to donate blood voluntarily. This gives hope to the supply of blood in emergencies. Around 6 to 7.4 million units of blood are required annually in India. It may increase in the coming years. Safe and good quality blood is collected through regular voluntary donations as it has been highlighted by National blood donation policy¹.

According to the World Health Organization (WHO), 81 million units of blood is collected in developed countries annually whereas, in developing countries, it is about 39%². In the last three decades, blood bank centers play a vital role in collecting and screening of donated blood and separations are made as required by the recipients, like whole blood, plasma, and packed cells³.

Some important criteria have to be followed before selecting a donor. Moreover, multiple numbers of donors are not able to donate blood successfully due to several reasons. Either they are temporally or permanently not qualified for blood donation. Deferral leads to loss of precious whole blood donor (WBD) and reduction in blood units for transfusion purpose⁴. The overall process of deposition of donated blood includes educating, recruiting,

selecting, retaining and registering donor, collecting blood, processing, separation of blood components, execution of serological and hematological analysis on blood. Preserved blood can be viewed as a national source that is provided by healthy individuals⁵. The present study not only collected and deposited a good amount of blood but also increased awareness of blood donation and temporary and/or permanent deferral conditions among the students as well as volunteers.

METHODS

All the volunteers were screened for heart diseases, cancer, epilepsy, abnormal bleeding disorders, leprosy, mental disorders, liver disorders, kidney disorders, respiratory disorders, diabetes, polycythemia, malaria, amoebiasis, unexpected weight loss, allergic diseases, dengue fever, glucose-6-phosphatase deficiency, surgery, typhoid, animal bite, rabies vaccinations, body tattooing, blood transfusion, narcotic intravenous drugs, sexually transmitted diseases, hepatitis. Hemoglobin tests were performed by the specific gravity method.

Donors blood were collected in the blood donation camp conducted by Amity University Haryana, Gurgaon with collaboration of Rotary Blood Bank, New Delhi with written consent from the donors. The data included a list of 431

volunteers who visited the camp. The data were segregated based on the selection and deferral cases as well as on age and sex using MS office Excel 2013. Analysis of the data was also based on deferral and donors' complications.

RESULTS

In the present study, 431 volunteers got registered for the blood donation camp in which 207 (48.02%) male and 114 (26.45%) female donors were found healthy while the rest i.e., 110 (25.52%) of volunteers were found not suitable for blood donation due to temporary and/or permanent

medical conditions (Table 1, Fig. 1). 1/4th of deferral donors were pointed out during the pre-health check up (Table 2, Fig. 1). Majority of deferral cases were due to low hemoglobin concentration (63.64%) followed by low BP (8.18%), animal bite (6.36%), typhoid (4.55%), menstrual cycle (4.55%), body tattoo (2.73%), underweight (2.73%), antibiotic (2.73%), fast bleeding (0.91%) and chikungunya (0.91%); whereas in permanent deferral category, the reasons were pointed out to be low blood pressure (8.18%) and thin vein (2.73%).

Table 1: Number of volunteers with the percentage of deferrals

Category of donor's	No. of donors	Overall percentage (%)
Male	207	48.02
Female	114	26.45
Overall deferral	110	25.52
Total	431	100

Table 2: Number of volunteers with temporary and permanent deferrals

S/n	Causes of deferral	Temporary deferral	Permanent deferral	Percentage (%)
1	Low HB	70		63.64
2	Low BP	0	9	8.18
3	Animal Bite	7		6.36
4	Typhoid	5		4.55
5	Menstrual cycle	5		4.55
6	Body Tattoo	3		2.73
7	Underweight	3		2.73
8	Antibiotic	3		2.73
9	Thin Vein	0	3	2.73
10	Fast bleeding	1		0.91
11	Chikungunya	1		0.91
	Total	110		100.00

DISCUSSION

Donor selection is the first step towards the transfusion process. According to Directorate General of Health Science, Ministry of Health and Family Welfare of National and International practice, blood collection processes should ensure protected blood collection through screening, education and by following strict criteria given by the American Red Cross Society⁶.

Blood donation is a vital task. A process of blood donation doesn't harm the donor. Before selecting a donor, pre-diagnosis has to be conducted very carefully. In such cases, false-diagnosis may cause threats to the blood recipients⁷. Several clinical aspects are there which make the blood donation camps unable to gather a large amount of blood either due to temporary or permanent rejection⁸.

Rejection of donors during blood camp gives a negative feeling about themselves. Usually, there is a kind of mental

stress among the volunteers who are denied blood donation due to temporary or permanent deferral conditions. The organizers of blood donation camps need to motivate such volunteers to come out of such situations and they should also advise such volunteers to cope with the health condition⁹. Donor selection plays an important role in blood donation camp or in the blood bank and even during transfusion. During the present study, it was observed that 48.02% male donors, 26.45% female donors had to be temporarily deferred while 25.55% of the total number of volunteers had to be advised for overall adjournment. Previous studies, as well as the present study, reveal that the most common cause of deferral is due to low hemoglobin concentration or anemia followed by low BP, animal bite, typhoid, menstrual cycle, body tattoo, underweight, antibiotic, thin vein, fast bleeding, and chikungunya. Anemia occurs due to improper dietary source and intake of junk food and snacks that lead to decreased nutrition level¹⁰⁻¹². Majority of deferral donors

were due to low hemoglobin concentration or anemia¹³. Anemia can be cured by taking proper treatment with regular checkups and awareness of dietary sources. Consumption of medication during the past 72 hours due to the clinical condition of the donor may lead to deferral¹⁴. Temporary deferral donors can be considered in the following blood donation camp by taking proper measures for their present medical issues. Volunteers with low hemoglobin concentration should be advised to take iron supplements or the foods rich in iron during their treatment. All the deferred individuals should be guided to overcome any kind of mental stress, cure themselves properly and to contribute in the future.

CONCLUSION

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 blood pressure, animal bites, typhoid, menstrual cycle etc. Permanently rejected donors were advised for proper treatment and temporarily deferred donors were encouraged for further donations. However, a larger number of people denied donating blood due to the lack of essential awareness regarding the importance of blood donation camps. Therefore, dissemination of knowledge at a larger pace regarding blood donation and its importance is required. Temporary deferral cases can also be decreased by providing basic knowledge of deferral conditions.

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