

Original article

Study of donor deferral during blood donation: A single centre teaching hospital study

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Abstract

Background: Safe blood transfusion can be a crucial lifesaving intervention in many clinical situations. For safe blood products donor selection is the first and foremost measure of blood donation. **Objective:** Aim of the study to determine the incidence and causes for deferral in blood donors. **Materials and Methods:** This cross-sectional retrospective study was done at Transfusion medicine department in Delta Medical College and Hospital, Bangladesh during 6 months period. In current study data were extracted from the register book and analyzed. Prospective donors were confidentially interviewed and examined and screened for causes of temporary and permanent deferral of blood donation. Data were presented as charts, table and analyzed with Microsoft Excel. **Result:** A total of 2215 directed donors were studied, of them, 1555 (73.52%) were male and 560 (26.48%) females. Predominantly blood donors belonged to 31–40 years of age group (38.01%). Out of 2115 directed donors, 423 (20%) were deferred. Deferral was significantly more likely in female. The most common cause for deferral were history of anemia (27.66%). Other causes were antibiotic & medications, high blood pressure, low blood pressure, frequent donation, Positive HBsAg, HCV markers, suspected addiction, and vaccination. **Conclusion:** Effective measures are required for documenting the deferred donors and appropriate preventive intervention program should be undertaken for prevalent causes of deferrals, like low Hb, Infections with HBV etc. Anemia is the most prevalent reason of temporary deferral for blood donation in this region of Bangladesh. Other reasons were hypertension, hypotension, suspected addiction, vaccination etc.

Keywords: Directed blood donors; deferral blood donor,

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Introduction

The safe blood is red gold in time of saving a life. For adequate supply of safe, quality blood products many measures have been taken by the blood transfusion committee. The most important is the selection of voluntary, non-remunerated blood donor.

Donor eligibility is determined by medical interview based on national guidelines. Blood donors are disqualified by blood donation criteria are called deferrals. Deferring donor often leaves them with negative feelings about themselves as well as negative effect on future donor return. It is important

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to do regular surveillance of the factors responsible for temporary or permanent deferrals. So, the aim of the study to figure out the reasons for deferrals of blood donors at Transfusion Medicine Department in Delta Medical College and Hospital.

Materials and Methods:

This cross-sectional retrospective study was done at Transfusion Medicine Department in Delta Medical College and Hospital, Bangladesh. Each donor was examined by the medical officer based on detailed medical history and brief physical examination as per the criteria by Director General Health services of Bangladesh.[5], informed written consent was taken on donor selection form. Hemoglobin was estimated by strip method in the Transfusion Medicine Department. HBsAg, HIV, and HCV, Syphilis, Malaria, testing was done by ICT rapid device method. Data were presented as charts, table and analyzed with Microsoft Excel.

Ethical Clearance: This study was approved by ethics committee of in Delta Medical College and Hospital, Bangladesh.

Result:

During 6-month period, a total of 2115 directed donors were studied. From them, 1555 (73.52%) were male and 560 (26.48%) females. Prospective donors are predominantly male [Figure 1]. From, most of directed donors belonged to (31-40) years of age group (38.01%), (21-30) years age group (26.95%) belongs to second most and (18-20) years age group (22.7%) belongs the third most common directed donor. [Figure 2], 423(20%) were rejected because of various reasons. The most common cause for deferral in this study was history of Anemia(27.66%). Other causes were antibiotic & other drugs (14.02%), high blood pressure(14.12%),

HBsAg positive (9.93%), low blood pressure (7.8%), menstruating women (5.67%), Wrong Blood Group & history of vaccination were equal (4.26%), low platelet count (2.84%), Frequent Blood Donation (2.13%), Suspected Addiction(2.13%), and HCV positive (2.13%).[Figure 3]. In this study, among the total deferred donors 311 donor (73.52%) were male and 112(26.48%) were female donor.

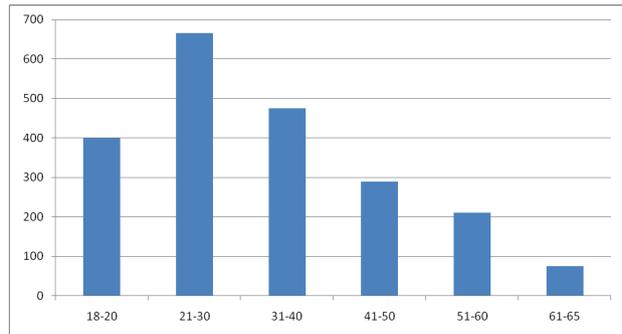


Figure -2: Age distribution

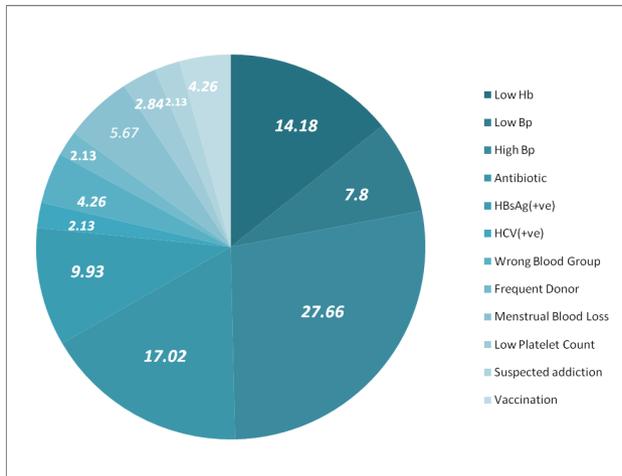


Figure-3: Reasons for deferral of donor from blood donation

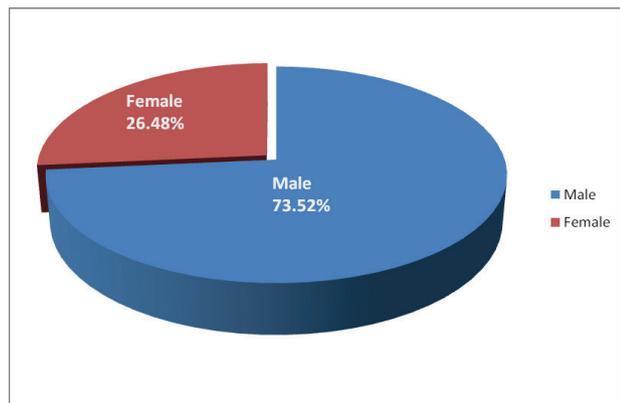


Figure-1: Gender distribution

Discussion:

Safety of blood products must be assured throughout the process from the proper donor selection through to their administration to the patient. It is a challenge for Transfusion medicine department to balance between donor acceptability and management of adequate blood inventory. Most important is the selection of blood donors by donor selection criteria. Donor deferral has a negative effect on donor return of both first and repeat. The study aimed to determine the prevalence and causes of donor deferrals during blood donation. In current study, Female donors were less than male donors. Similar findings were seen in

studies by Sundar et al³. Bahadur et al⁴ and Mamatha et al⁵ The probable reasons for such differences may be because, fear of blood donation in female donors. Another reason was that, in Bangladeshi female subjects, nutritional deficiency was more prevalent; Various studies showed that anemia is very prevalent in Bangladeshi female subjects and that is the reason for deferral from blood donations.[9] the study observed, most of directed blood donors and deferral blood donors belonged to 21–30 years of age group.

The donor deferral rate of 20% in this study is comparable to others ranging from 5% to 35%. Other studies by Mamatha et al., Rabeya et al, and Sundaret al.showed comparable results. In this study, the most common cause of such deferral was history of anemia. Studies by Dr. Farida Parvin¹&Dr. RabeyaYousuf^{2&7} showed similar findings That was the temporary reason for deferral; other temporary reasons were antibiotic & other drugs intake,high blood pressure, low blood pressure, positive hepatitis B, C markers, menorrhagia. In studies done by Girishet al⁶ and Mamathaet al anemia and less weight were temporary reasons for deferral. In another study by Sundar et al, hypertension and diabetes mellitus were mentioned as permanent reasons for deferral from blood donation. Effective strategies should be developed to retain these already motivated donors

in case of temporary deferred donors. Limitation of our study was single centre observation; so, future interventional prospective study can be planned involving multicentre approach.

Conclusion:

In conclusion, the most common cause of deferral found in our study was low hemoglobin. Other reasons were hypertension, hypotension, suspected addiction, vaccination etc. This study, clearly pointed out low hemoglobin as the commonest cause of deferral which is a temporary deferral'shence preventive measures should be undertaken to reduce the deferral rate in the population.

Recommendation:

A large scale multi centered study should be done with extended time period.

Conflict of interest: None

Author's Contribution:

Md. Rafiqul Haque was responsible for the study design and manuscript preparation. The author himself carried out the data and assess donor selection sheets and analysis of the result. Other authors helped him in data analysis and preparation of manuscript. All authors discussed the results and contributed to the final manuscript.

References:

1. F Parvin, D A Biswas, B Naznin, T Afroz, M Ali, T F Dipta
2. Y Rabeya, M Rapiaah, H Rosline, SA Ahmed, WA Zaidah and TM Roshan.
3. Sundar P, Sangeetha SK, Seema DM, Marimuthu P, Shivanna N. Pre-donation deferral of blood donors in South Indian set-up: an analysis. *Asian J Transfus Sci* 2010;4(2):112-5. <https://doi.org/10.4103/0973-6247.67037>
4. Bahadur S, Jain S, Goel RK, Pahuja S, Jain M. Analysis of blood donor deferral characteristics in Delhi, India. *Southeast Asian J Trop Med Public Health* 2009;40(5):1087-91.
5. Mamatha SV, Pavithra P, Prasad R, Muralidhara V. Analysis of blood donor deferral in a tertiary care centre: 5-year study. *Res J Pharmaceut Biol Chem Sci* 2015;6(5):533-6.
6. Girish CJ, Chandrashekar TN, Ramesh BK, Kanitkar SM. Pre-donation deferral of whole blood donors in district transfusion centre. *J Clin Diagn Res* 2012;6(1):47-50.
7. Rabeya Y, Rapiaah M, Rosline H, Ahmed SA, Zaidah WA, Roshan TM. Blood pre-donation deferrals-a teaching hospital experience. *Southeast Asian J Trop Med Public Health* 2008; 39(3):571-4.