

Research Article



Analysis of Frequency and Reasons of Blood Donor Deferral in Tertiary Care Hospital Blood Bank

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ABSTRACT

Blood transfusion is lifesaving therapy for many surgical and medical conditions. Blood safety is a major concern in transfusion services. The donor selection criteria are one of the steps ensuring blood safety. However, the selection criteria designed and implemented by regulating authority - The Central Drugs Standard Control Organization (CDSCO) leads to blood donor deferral. There is a geographical variation in donor deferral reasons and rates. The deferral impacts the psycho-social behavior of blood donor also. The objective of the study was to determine the blood donor deferral rate and analyze the reasons of the same. Blood donor data was collected from blood donor registry for the period from January 2017 to December 2021. The data was analyzed for frequency and reasons of deferral rate. Out of total 14530 registered blood donors, 814 were deferred for temporary and permanent reasons. The blood donor deferral rate was 5.60 %. Low hemoglobin (236 cases -28.99%) was the commonest reason of deferral. Blood donor deferral may discourage the potential blood donors and may account for inadequate supply of blood for transfusion services. Mass health education and more awareness in population are needed to avoid blood donor deferrals. Effective measures need to be established to bring back the temporary deferral into blood donation donor pool.

Keywords: Donor deferral, blood donation, donor selection criteria.

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Sabri priya E et al ³ and Rehman S et al ⁴ had mentioned same reason of blood donor deferral in their study. In other study, Bashawri LA et al showed that blood donors on medication were the commonest reason of donor deferral. ⁵

MATERIALS AND METHODS

The present study was conducted in blood bank of tertiary care hospital for period of January 2017 to December 2021.

The details of blood donors were retrieved from blood donor registry and donor questionnaire form. Any blood donor visiting the blood bank for blood donation purpose, has to undergo hemoglobin screening, vital parameters checking and submission of donor questionnaire form, as designed and mandated by CDSCO. ¹ The donor consent for blood donation is part of donor questionnaire form and is printed in its last part after the questions.

The blood donor has to give details for history of infections, recent surgeries, recent medications, consumption of alcohol in last 24 hours, past blood donation date, pregnancy, abortion, menstruation etc. in the donor questionnaire form. As per CDSCO guidelines, the blood donor is temporarily deferred, if donor does not fit in time period criteria, prescribed by these authorities, for any one of above mentioned information, given by donor in his questionnaire form. ¹

Hemoglobin estimation screening is done by copper sulphate method. The donors with less than 12.5 gm% are deferred temporarily. ¹

INTRODUCTION

Blood safety is a serious concern all over the world. The regulatory authority CDSCO has designed blood donor selection criteria to ensure the blood safety. ¹ The stringent donor selection criteria help to identify the donors with infectious diseases, discourage high risk donors from blood donation and thus, maintain the blood safety. However, temporary deferral may undergo social pain, decreased self esteem and may not return for blood donation in future.

The blood donor deferral also affects the demand and supply of blood products in any hospital blood bank. Presently, per year, ten million units of blood products are required in India against donation of 7.4 million units. ² In such current situation, donor deferral impacts on day today management of blood bank while providing blood products to hospitals.

Several national and international studies are conducted to analyze rate and reasons of blood donor deferrals. In the present study, it was found that the low hemoglobin was the most common reason of blood donor deferral and



The blood donors are permanently deferred for irreversible medical conditions like any cancer, leprosy, bleeding disorders, hemoglobinopathies, chronic kidney diseases, chronic heart diseases, positive for Hepatitis B, Hepatitis C, HIV, syphilis etc.¹

The deferred blood donor details are recorded in the donor deferral register. The counseling is done for all the deferrals. The attention is given to temporary deferral to motivate them for future blood donation after the rectification of their current temporary deferral reason.

RESULTS AND DISCUSSION

Table 1: Frequency distribution of blood donor deferral

Cause	Total cases (%)
Low haemoglobin	236 (28.99 %)
Medications	219 (26.90 %)
Underweight	79 (9.70 %)
URTI, Fever	73 (8.96 %)
Alcohol	57 (7.00 %)
High BP	33 (4.05 %)
Malaria	25(3.07 %)
Tattoo	09 (1.11%)
Underage	09 (1.11%)
Other temporary deferral	35(4.29 %)
Permanent deferral	39(4.79 %)
Total	814(99.97 %)

The donor registry and donor questionnaire forms were scrutinized. It was found that 814 (5.60 %) donors were deferred against 14530 blood donors. In the deferred donors, 4.79% were deferred permanently. The 28.99% donors were deferred temporarily for low hemoglobin level of less than 12.5 gm% and was the most common reason for temporary deferral. The similar findings were also observed by Sareen R et al⁶, Kulkarni N et al⁷, Radhinga ST et al⁸ and Rebeya Y et al⁹ with 39.42%, 34.31%, 30.97%, 40.7% respectively in their studies for low hemoglobin deferral cases.

The second most common reason for deferral was donor on recent medication with 26.9% cases. Bashawri LA et al in their study showed that the recent medication was most common reason for deferral with 26% cases.⁵

The other reasons of blood donor deferral were URTI fever 8.96% , underweight -less than 45 kg -9.7 % , alcohol intake in last 24 hours 7 % , high blood pressure 4.05 % , malaria 3.07 % , tattoo 1.11 % , underage- less than 18 years-1.11 % . The other reasons of temporary deferral includes recent blood donation in last 3 months, recent surgeries, menstruation, pregnancy, abortion, breast feeding etc. which constitutes 4.29% cases of total deferral cases.

In this study, it was found that total 4.79 % cases were permanent deferral cases which included reasons of

chronic kidney diseases, chronic heart diseases, malignancy, tuberculosis etc. Kasraian L et al¹⁰ in their study found that the most common reason for blood donor deferral was risk factors related to HIV and Hepatitis B infection with 43.6% cases.

The blood donor deferral because of any reason leads to loss of time and efforts of blood donor and blood bank staff. In the studies, Halperin D et al¹¹ and Kouao MD¹², et al showed that blood donors deferred temporarily had distressing experience and psychological effects. Hence, counseling and encouragement is needed for such temporary deferrals. The common reasons of temporary deferral are low hemoglobin level, recent alcohol intake, recent medication and menstruation etc. and they can be easily avoided by public awareness.

CONCLUSION

The drugs like blood products have significant role in life saving in accident cases and critical medical cases. However, the blood products are available only after donation of blood by any blood donor. The blood banks have to follow the mandatory guidelines of blood donor selection criteria framed by regulatory authority- CDSCO for maintaining blood safety. This leads to blood donor deferral which results in loss of many may available blood units for blood transfusion. Thus, the blood donor deferral impacts harshly on demand and supply of any blood bank of the hospital. Hence, effective measures need to be established to return the temporary deferral donor, later after rectification of their deferral reason. Donor deferral should be reduced with health awareness, intensive health education especially targeting and motivating young crowd.

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