

Original Research Article:

Evaluation of Reasons of Pre- Blood Donor Deferrals: A Retrospective Study at a Tertiary Care Teaching Hospital

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Date of Submission: 06 May 2018 Date of acceptance: 22 June 2018

ABSTRACT

Background: Patients who require transfusion as part of their clinical management have the right to expect that sufficient blood will be available to meet their needs and to receive the safest blood possible. The present study was conducted to evaluate reason of blood donor deferrals.

Materials & Methods: The present retrospective study was conducted on 1240 subjects of both genders (males- 580, females- 660) in blood bank, Mahatma Gandhi Memorial (MGM) Medical College, Indore, Madhya Pradesh, India. Each and every donor were evaluated on the basis of a medical history, physical examination, hemoglobin estimation, weight, age, blood pressure, pulse rate, temperature.

Results: Out of 580 registered males, 110 deferred and out of 660 females, 250 females deferred. Under temporary causes, most common were fever seen in 12 males and 25 females, menstruation in 45 females, low weight in 15 males and 35 females, underage in 5 males and 22 females. Among permanent deferrals, most common reason was diabetes seen in 32 males and 56 females, HCV in 12 males and 22 females, epilepsy in 7 males and 8 females and cirrhosis in 6 males and 4 females.

Conclusion: Donors should be counseled, educated and encouraged to improve the efficiency of donor programme. Also, temporary deferred donors require further counseling regarding usefulness of donating blood.

Key words: Blood, Donors, Education.

Introduction

Blood transfusion is an indispensable component of health care. It contributes to saving millions of lives each year in both routine and emergency situations, permits increasingly complex medical and surgical interventions and dramatically improves the life expectancy and quality of life of patients with a variety of acute and chronic conditions. Patients who require transfusion as part of their clinical management have the right to expect that sufficient blood will be available to meet their needs and to receive the safest blood possible.¹

Blood transfusion is life saving procedure in many situation specially in trauma cases. Therefore the importance of availability of blood and blood products in an emergency situation cannot be emphasized. Safe and adequate supply of blood and products is major public health issue faced globally. According to National AIDS control organization's statistics, the annual rate of blood donation is about 7.4 million units against the requirement of 10 million units in India.²

A voluntary donor is one who donates without any rewards or compulsion whereas a replacement donor is one who donates blood upon request of specific patient or patient's family which intended to be used specifically for the treatment of that a patient. Potential blood donors may not be able to donate for several reasons. All the donors will be screened properly to ensure the blood drawn is safe for transfusion.³ The present study was conducted to evaluate reason of blood donor deferrals.

Materials & Methods

The present retrospective study was conducted on 1240 subjects of both genders (males- 580, females- 660) in blood bank, Mahatma Gandhi Memorial (MGM) Medical College, Indore, Madhya Pradesh, India. All were informed regarding the study and written consent was obtained. Ethical clearance was taken prior to the study. Each and every donor where evaluated on the basis of a medical history, physical examination, hemoglobin estimation, weight, age, blood pressure, pulse rate, temperature. Details of all those who where deferred were recorded in the deferral register. Results thus obtained were subjected to statistical analysis using chi- square test. P value less than 0.05 was considered significant.

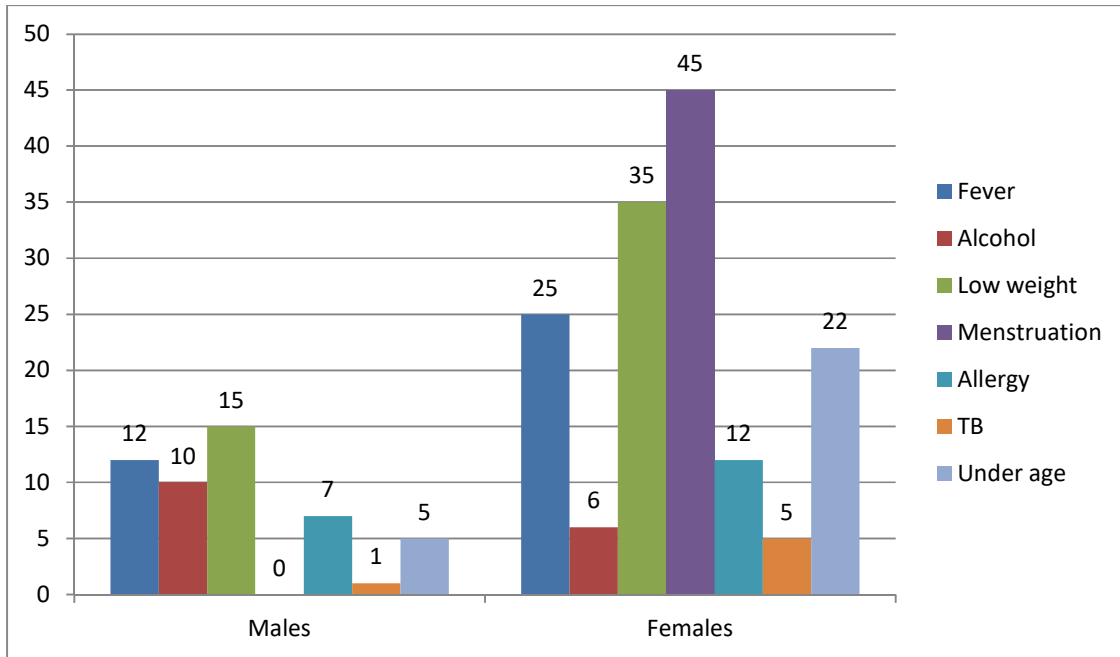
Results

Table I shows that out of 580 registered males, 110 deferred and out of 660 females, 250 females deferred. Graph I shows that under temporary causes, most common were fever seen in 12 males and 25 females, menstruation in 45 females, low weight in 15 males and 35 females, underage in 5 males and 22 females. Graph II shows that among permanent deferrals, most common reason was diabetes seen in 32 males and 56 females, HCV in 12 males and 22 females, epilepsy in 7 males and 8 females and cirrhosis in 6 males and 4 females.

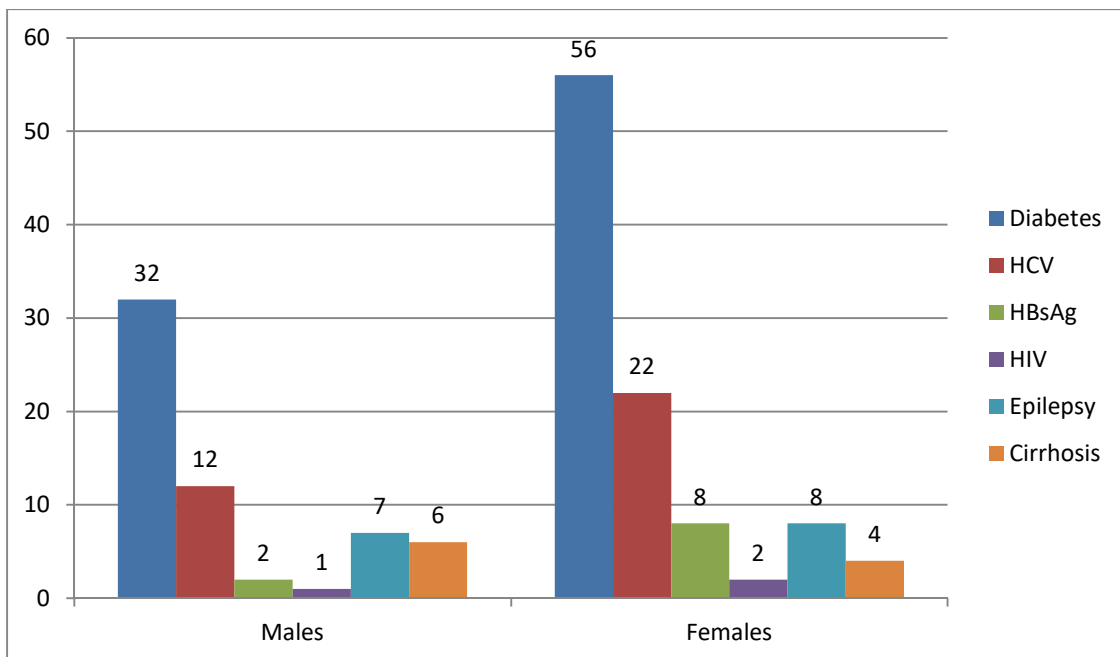
Table I: Demographic data of subjects

Gender	Registered	Deferred
Male	580	110
Female	660	250
Total	1240	360

Graph I: Temporary reasons for deferrels



Graph II: Permanent reasons for deferrels



Discussion

In India, according to NACO's statistics the annual requirement of blood for the country was estimated at 12 million units, of which DAC had a target of collecting 55 lakh units through the network of DAC supported blood banks in 2013-2014. The endeavour was to meet the blood needs of the country with voluntary nonremunerated donations, through a well-coordinated Blood Banking Programme. In 2013-2014, a total of 57 lakhs units were collected and 84% of this was through voluntary blood donation.⁴

A deferred prospective donor often leaves them with negative feelings about themselves as well as the blood donation process. These blood donors are less likely to return in future for any blood donation and have pronounced effect on them for future donation. In most of the blood banks, focus is more at recruiting new blood donors while retention and re-entry of recruited but deferred due to various causes are ignored.⁵ Pre donation donor selection is usually performed for the safety of not only the blood donor but also for the recipient. Monthly statistics sent to the higher authorities exclusively includes transfusion transmitted diseases data and excludes other causes. It is also very important to study and analyze various causes for donor deferral, in order to categorize them under temporary and permanent deferrals and to increase influx of the donors to donate blood without deferral.

Out of 580 registered males, 110 deferred and out of 660 females, 250 females deferred. Under temporary causes, most common were fever seen in 12 males and 25 females, menstruation in 45 females, low weight in 15 males and 35 females, underage in 5 males and 22 females. This is in agreement with Sharma et al.⁶

Fred et al⁷ found that male constituted around (95.08%) of the donors who came to donate blood. A major proportion (89.70%) were replacement donors. 858 (5.12%) of the entire donor population were deferred due various reason. The major causes of deferral in this study were hypertension 12.70%, followed by anemia 9.09%, tissue transmissible diseases. Those who were deferred were categorized into temporary constituting (58.04%) and permanent (41.96%). The Leading cause of permanent deferral was hypertension 30.3%, where as the leading cause among temporary deferral was anemia 15.66%. One of the major cause of deferral among males were hypertension whereas anemia was the major cause of deferral among females.

In present study, among permanent deferrals, most common reason was diabetes seen in 32 males and 56 females, HCV in 12 males and 22 females, epilepsy in 7 males and 8 females and cirrhosis in 6 males and 4 females. This is in agreement with Akash et al.⁸

Shrivastava M et al analyzed the blood donor deferral pattern and its causes among blood donors in a tertiary care hospital blood bank and to review its influence on blood safety. The data available as donor deferral record over a period of 13 years from 2001 to 2013 was analyzed. The blood donor deferral rate was 11.5%, the deferral rate in various categories was 4.8%, 4.7%, 1.6%, and 0.3% in Category 1, Category 2, Category 3, and Category 4, respectively. The majority of deferrals were temporary deferrals (62.8%) of young donors. The maximum number of donors deferred (28.2%) due to a history of jaundice (permanent) followed by 19.4% due to low hemoglobin (temporary). History of malaria, intake of medicines, infections, underweight, last blood donation within 3 months (temporary deferral), and history of heart and lung diseases, diabetes, and with suspicious identity (permanent deferral) were other major causes identified. The pattern of donor deferral identified is an important tool for blood

safety and also provides key areas to focus on a region or policy formulation nationally for donor selection as well ensure donor safety.⁹

Al Shaer L et al defined donor pre-donation deferral rates, causes of deferral, and characteristics of deferred donors in Dubai. This retrospective study was conducted on all donors who presented for allogeneic blood donation. The donation and deferral data were analyzed to determine the demographic characteristics of accepted and deferred donors, and frequency analyses were also conducted. Among 142,431 individuals presenting during the study period, 114,827 (80.6%) were accepted for donation, and 27,604 (19.4%) were deferred. The overall proportion of deferrals was higher among individuals less than 21 years old (35%, $P < 0.000$), females (44% were deferred compared to 15% of males, $P < 0.0001$), and first-time donors (22% were deferred vs 14% of repeat donors, $P < 0.0001$). The main causes for a temporary deferral were low hemoglobin and high blood pressure. The deferral rate among blood donors in Dubai is relatively high compared to the internationally reported rates¹⁰

Conclusion

Donors should be counseled, educated and encouraged to improve the efficiency of donor programme. Also, temporary deferred donors require further counseling regarding usefulness of donating blood.

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