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Analysis of Blood Donor Deferral in a Tertiary Care Centre: 5 Year Study.

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ABSRACT

Transfusion of blood and blood products is of utmost importance in cases of transfusion in emergency to save the life of patients. But al large number of donors will not be able to donate blood either for temporary or permanent reasons. Pre- donation selection of the donor is done for the safety of both donor and the recipient. To analyse and document the causes of blood donor deferral. Present study was conducted in a tertiary care hospital blood bank over a period of five years from January 2010 to December 2014. Voluntary and replacement donors in our blood bank as well as donors who participated in the voluntary blood donation camps outside the blood bank were included. During this study, a total 16377 blood donors were accepted for blood donation both in the Blood Bank and at Voluntary blood donation camps outside Blood Bank. Voluntary blood donors were 14445(88.2%) and replacement donors were 1932(11.8%). Male donors were 13429 (82%) and female donors (18%) respectively. Out of the total 16377 blood donors 851 cases (5.2%) were rejected for blood donation; 617(72.5%) due to temporary causes and 234(27.5 %) due to permanent causes. Hence studying the donor profile helps us to analyse the population having temporary causes for rejection who in turn can be treated and educated so that they become voluntary donors in future.

Keywords: donor deferral, temporary, permanent, rejection.

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INTRODUCTION

Transfusion of blood and blood products is of utmost importance where blood transfusion is done in emergency to save the life of patients. Pre-donation selection of the donor is done for the safety of both donor and the recipient. Most important is the selection of blood donors by donor selection criteria [1]. A large number of blood donors are not able to donate blood successfully for several reasons, either temporary or permanently. Individuals disqualified from donating blood are known as 'deferred' donors. Blood donor deferral is a painful and sad experience for the donor as well as blood centre screening the donor. Deferring donors often leaves negative feelings about themselves as well as the blood donation process. Additionally these donors are less likely to return for blood donation in future [2]. It is estimated that just 1% donation is generally the minimum needed to meet a nation's most basic requirements for blood; the requirements are higher in countries with more advanced health care systems [3]. 94% of the blood donations in the country are made by men while the women contribute to only 6% [4]. Shortage of blood donors are frequent, so it is important to understand and evaluate the reasons for donor deferral.

MATERIALS AND METHODS

The present study was conducted in a tertiary care hospital blood bank over a period of five years from January 2010 to December 2014. Voluntary and replacement donors in our blood bank as well as donors who participated in the voluntary blood donation camps outside the blood bank were included. Each donor was examined by the medical officer based on detailed medical history and brief physical examination as per the criteria laid down by Director General Health services and drugs controller of India [5]. Detailed information of donor deferral with respect to age, sex and cause of deferral, whether temporary or permanent was recorded. Quantity of blood collected was 350 ml in donors weighing more than 45 kgs and 450 ml in donors weighing more than 55 kgs. Haemoglobin was estimated by copper sulphate solution method in voluntary blood donation camps.

RESULTS

During this study, a total of 16377 blood donors were accepted for blood donation both in the Blood Bank and in voluntary blood donation camps outside Blood Bank. There were 14445 (88.2%) voluntary donors and 1932 (11.8%) replacement donors. There were 13429 (82%) male donors and 2948 (18%) female donors. Table 1 shows distribution of whole blood donors according to gender.

Table 1: Showing distribution of male and female whole blood donors

Gender	Total number of donors	Percentage (%)
Male	13429	(88.2 %)
Female	2948	(11.8 %)

Table 2: Showing distribution of donors deferrals according to age group

Age group(years)	Total number of donors	Deferral (%)
18-30	6550	40
31-40	5322	32.5
41-50	3733	22.8
51-60	772	4.7

Table 3: Shows distribution of temporary deferral cases

eferral causes	Total (number)	Percentage of cases(%)
Anemia	259	42
Underweight	160	26
Alcohol intake	61	10
Fever due to infections	50	8
History of major / minor surgery	38	6
History of drug intake	25	4
History of menstruation	12	2
History of icterus	12	2

Table 4: Showing distribution of permanent deferral cases

Deferral causes	Total (number)	Percentage of cases(%)
Hypertension	110	47
Asthama	66	28
Diabetes mellitus on insulin	28	12
Unexplained weight loss	30	13

Out of 16377 donors, 851 cases (5.2%) were rejected for donation; 617(72.5%) due to temporary causes and 234(27.5 %) due to permanent causes. The most common cause of temporary deferral was anemia. (42%) Table 2 shows percentage of deferrals according to age. Table 3 shows the distribution of temporary deferral cases, the most common cause being anemia and Table 4 shows distribution of permanent deferral cases, the most common cause being hypertension.

DISCUSSION

Adequate supply of blood is important and it is also essential that the blood collection process should harm neither the donor nor the recipient. This is achieved by donor selection criteria [6]. Rates and reasons of donor deferral varies from region to region and from one centre to another. Deferral rates vary from 5-24% leading to huge losses in terms of available units for transfusion in the nation every year [7].

Deferral rates ranged from 5.6-35.6% across the world [8]. In the present study, deferral rate was 5.2% which is comparable to the study by various authors [1,9,10].

According to studies by Sundar et al and Bahadur et al [10,11] female donor population was very low which was similar to our study and can be attributed to fear and lack of awareness among female population. Most common cause of deferral in female population was anemia in various studies [10,12,13] which is due to nutritional deficiency and is in concordance with present study. In a study by Patil SR et al [14], most of the deferrals were under the age of 40 and males formed 90% of donor population which is similar to present study.

In a study by Girish CJ et al, donor deferral in the lower age group (18- 30 years) was due to temporary deferral causes (70%) and deferral in the higher age group donors was because of permanent causes. Among temporary causes for deferral, anemia and low weight are two important causes in both males and females [8] which are in comparison to present study. In cases of permanent deferrals, hypertension was the most common cause for deferral which is comparable to our study [10]. The incidence of diabetes mellitus was higher in older age group blood donors in a study by Sundar et al [10], which emphasizes the need for stringent screening before blood donation as compared to our study.

CONCLUSION

Donor deferral results in loss of blood donors. Study of donor deferral causes helps us analyse the reasons for rejection of donors in young and old age groups accordingly. Deferral in the younger age group was due to temporary causes such as anemia and low body weight and deferral in the older age group was due to permanent causes like hypertension. Hence, studying the donor profile helps us to analyse the population having temporary causes for rejection who in turn can be treated and educated so that they will become voluntary donors in future.

REFERENCES

[1] Unnikrisnan B Rao P, Kumar N, Ganti S, Prasad R et al. Australasian Med J 2011; 4(7):379-85.
[2] Lim JC, Tien SL, Ong YW. Ann Acad Med Singapore 1993; 22:326-31.
[3] url http://www.who.int/media centre/f3ctsheets/fs279/en/index.html.
[4] William R, Mathew S and Mccollough J. Transfusion 2007; 47:1180-1188.
[5] http://nacoonline.org/upload/publication/Annual Report Naco 2008-09.
[6] Agnihotri N. Asian J Transfus Sci 2010; 4(2):116-122.
[7] Tomasulo PA, Anderson AJ, Paluso MG, Gutschenritter MA, Aster RH. Transfusion 2003; 20(5)511-18.

[8] Girish CJ, Chandrashekar TN, Ramesh BK, Kantikar SM. J Clin Diagn Res 6(1):47-50.
[9] Rabeya Y, Rapiaah M, Rosline H, Ahmed SA, Zaidah WA, Roshan TM. Southeast Asian J Trop Med Public Health 2008;39(3):571-4.
[10] Sundar P, Sangeetha SK, Seema DM, Marimuthu P, Shivanna N. Asian J Transfusion Sci 2010; 4(2):112-15.
[11] Bahadur S, Jain S, Goel RK, Pahuja S, Jain M. Southeast Asian J Trop Public Health 2009:405(5):1087-91.
[12] Charles KS, Hughes P, Gad R, Bodkin CJ, Rodriquez M. Transfuse Med 2010;20(1):11-14
[13] Patil SR, Mhetre S, Rayate M, karache G. Int J biol Med Res 2014;5(3):4227-4230.