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Original Research Article

Donor Deferral Pattern for Plateletpheresis at a Tertiary Care Teaching Hospital

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Abstract: Single donor platelets has numerous advantages over Random Donor Platelets which includes decreased risk of Transfusion transmitted infections, bacterial contamination and alloimmunization due to reduce donor exposure. The most significant limitation to continued expansion of Plateletpheresis is the availability of platelet donors. Ineligibility of donors due to various reasons has further aggravated the already diminished pool of donors. On the basis of selection criteria, donors are deferred either temporarily or permanently. In our study 233 male donors were screened over one year out of which deferral rate was 44.2% (103 out of 233 donors). Deferral rate was highest in the age group of 25-34 years (45%) and most of these (73%) were replacement donors. Amongst these, 98.1% were deferred temporarily and 1.9% permanently. The most common cause of deferral was low platelet count (32%) followed by poor venous access (16%), URI/ intake of antibiotics (12%), low Hemoglobin levels (8%).
Keywords: Deferral, plateletpheresis, platelet count, Hemoglobin

INTRODUCTION

In recent years the demand for plateletpheresis or Single Donor Platelets (SDP) has increased considerably. The most common reasons behind this are increased awareness of specific component therapy and the risks associated with whole blood transfusion [1]. Single donor platelets has numerous advantages over Random Donor Platelets which includes decreased risk of Transfusion transmitted infections, bacterial contamination and all immunization due to reduced donor exposure [2]. The most significant limitation to continued expansion of Plateletpheresis is the availability of platelet donors [3]. In Indian scenario it is difficult to recruit donors for apheresis because of longer time and more commitment required for the procedure, lack of awareness, improper knowledge, cultural beliefs and unknown fears amongst donors. Besides this, ineligibility of donors due to low platelet count or haemoglobin concentration is an aggravating factor in the already diminished pool of donors. On the basis of selection criteria, donors are deferred either temporarily or permanently [4].

Voluntary blood donors are the backbone of blood bank. Deferral of the donors creates negative feelings about blood donation. Education, motivation, and treatment of these deferred donors are important aspects in blood banking, so that these donors can be recruited again. Thus, effective measures need to be initiated to find out the issue of lost donors in terms of numbers and reasons. It is important to retain the stock of precious blood units lost due to these temporary deferrals [5]. The present study is being done to know

the causes and frequency of deferral of donors for plateletpheresis at a tertiary care hospital.

MATERIAL AND METHOD

The present study is conducted in the department of Immunohematology and Blood Transfusion over a period of one year. Personation screening of donors was done before plateletpheresis to determine their suitability. The screening process included a detailed medical history along with physical examination which included weight, pulse, blood pressure and temperature. This was followed by checking of specific criteria for plateletpheresis which included good venous status in both the arms, platelet count > 2lakh/µl, no history of aspirin containing medicines in last 36 hours and a gap of 12 weeks from last whole blood donation and 48 hours from plateletpheresis donation. All procedures were performed on Haemonetics plus cell separator.

RESULTS

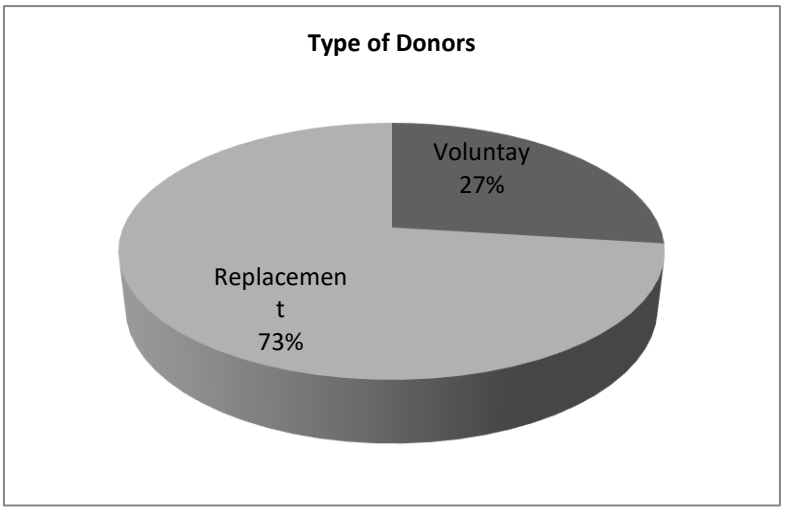
A total of 233 male donors were screened over a period of one year, out of which deferral rate was 44.2% (103 out of 233 donors). Deferral rate was highest in the age group of 25-34 years (45%) and most of the donors (73%) were replacement donors. Out of 233 donors, 98.1% were deferred temporarily and 1.9% permanently. The most common cause of deferral was low platelet count (32%) followed by poor venous access (16%), URI/ intake of antibiotics (12%), low Hemoglobin levels (9.7%).

Table-1: Demographic characters of deferred donors

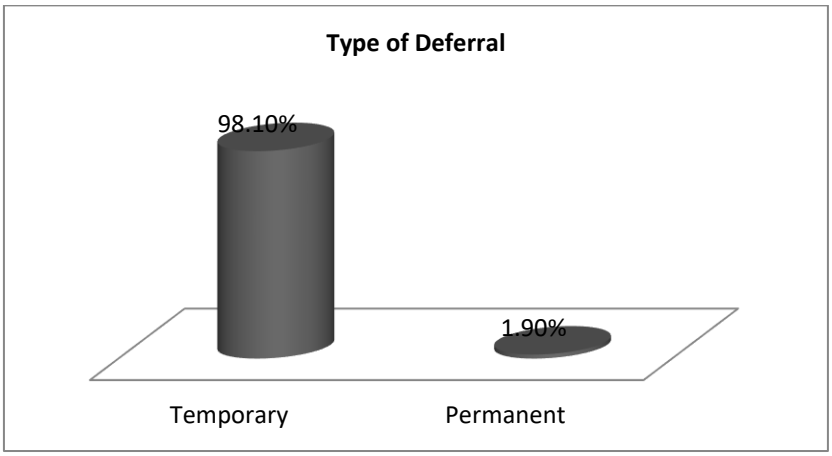
	Categories	No. Of Donors Deferred	Percentage
Age Range	18-24 years	31	30%
	25-34 years	47	45%
	35-44 years	17	16%
	>44 years	8	8%

Table-2: Causes for plateletpheresis donor deferral

Causes	No. of Donors	Percentage
Low Platelet Count	33	32%
Poor Veins	17	16.5%
URI/Antibiotics	13	12.6%
Low Hemoglobin	10	9.7%
Alcohol intake last night	7	6.7%
Aspirin intake	5	4.8%
Under weight	5	4.8%
Medical causes	5	4.8%
Allergy/dermatitis	3	2.9%
Seropositive	2	1.9%
Last donation < 3 months back	1	0.9%
Tattooing within 6 months	1	0.9%
Underage	1	0.9%



Fig−1: Type of Donors- Replacement and Voluntary



Fig−2: Type of Deferral- Temporary and Permanent

DISCUSSION

In the present study the donor deferral rate is 44.2% which is very high as compared to studies done by Tondon et al at Lucknow in 2008[6] and Pujani *et al* at Delhi in 2014[2] who reported a deferral rate of 27.5% and 25.4% respectively. Seema *et al* [7] in their study conducted in 2013 at Greater Noida also had a deferral rate of 20.5%. However, most common reason for deferral is the same i.e. low platelet count. Second most common reason for deferral in these studies is low hemoglobin level whereas in our study it is poor veins (16%) and low hemoglobin which accounts for 9.7% of all deferrals. Amongst these 9.7%, 3.8% had hemoglobin levels between 11.5-12.5 g/dl with normal red cell indices. With new apheresis equipments, minimal amount of blood loss does not hamper the donor safety practically. So to increase the donor pool for plateletpheresis hemoglobin cut off can be reduced from 12.5 g/dl to 11.5 g/dl. Fraser *et al* [8] studied the effect of lowering the hemoglobin cut off from 12.5 to 11.5 g/dl for female plateletpheresis donors and did not report any delirious effects on donors. Kusumgar et al observed no effect on platelet yield or adverse donor reactions while performing apheresis in 49 donors with 11.5-12.4gm% hemoglobin and stated that one fifth of deferred donors can be reconsidered if criteria for hemoglobin is relaxed [4]. In our study relaxing the donor selection criteria for hemoglobin from 12.5 to 11.5 g/dl along with normal red cell indices could have enabled re-entry of 3.8% donors which is quite welcome in an already limited apheresis pool.

Table−3: Percentage of donors able to re-enter donor pool if Hb criterion is relaxed

Study	% Deferral if criteria Hb>12.5 g/dl	% Deferral if criteria Hb>11g/dl	% of donors re-enter the donor pool
Tondon *et al*	14	5.35	8.65
Kusumgar *et al*	29.44	15.83	13.61
Pujani *et al*	27.05	9.85	17.2
Seema *et al*	18.96	8.62	10.34
Present study	9.7	5.8	3.8

Blood donor suitability criteria are based on science, informed medical opinion, and regulatory rules [9]. Blood donors are deferred for numerous reasons. Some deferrals are to protect the donor from the risks of blood donation while some serve to protect the recipient. Deferrals resulting from certain positive serological test results for TTD are permanent and may unfortunately be stigmatizing. Majority of the predonation deferrals are short temporary deferrals that can be resolved in days or months, after which the donors can return to donate [10]. Deferring or rejecting potential blood donors often leaves the person with negative feeling about themselves as well as the blood banking system. But there are definite advantages of eliminating donors with possible risk of disease because despite the availability of sensitive screening tests to detect HIV infection, blood donors can be infected but test negative if they have been infected for a period of 6 weeks or less [11]. Deferring donors also protects the donors from possible adverse reactions and avoid consequent negative impact on the donor motivation [12].

CONCLUSION

Various reasons for pre donation deferral diminishes donor pool even though demand for blood and its components are increasing. This aggravates the prevailing situation of deficiency of blood supply in our country. It becomes very crucial to review our policy regarding acceptance for plateletpheresis donations to keep pace with the increasing demand. Donor deferral is very painful and tragic for the donor as well as blood centre. Hence it is imperative that potential donors be equipped with knowledge pertaining to deferral criteria as this might help in increasing the probability of returning of a deferred donor at a later date.

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