



Blood Donor Deferral: do We Need to Revise our Strategy?

KEYWORDS

Donor deferral, low hemoglobin, blood donors, temporary deferral

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ABSTRACT

Blood donor deferral imposes a perpetual challenge to the transfusion services. Donor deferral issue is addressed by blood banks as per the National guidelines. We undertook this study with the aim of analyzing the donor deferral pattern over a period of nine years at our blood bank to initiate steps to attend to shortcomings if any. Records of all the donor deferrals from 2006 to 2014 were traced and comprehensive retrospective analysis of blood donors deferred in the study period was done. 13.07% potential donors were deferred. 96.50% donors were deferred for temporary reasons while 3.50% were deferred permanently. Low hemoglobin accounted for highest number of deferrals. Diabetes mellitus accounted for maximum permanent deferrals. Donor deferral policy in our country needs to be reviewed so as to strike a fine balance between the demand and supply of blood. Also, consolidating the donor reserve would ensure retention of temporarily deferred donors.

INTRODUCTION:

Blood donor deferral, defined as non acceptance of probable donors based on diverse criteria, imposes a perpetual challenge to the transfusion services in meeting the necessity. Deferral criteria are an indispensable part of any blood donation service ensuring safety of not only the blood donors but also the beneficiaries. It has been seen worldwide that the number of available blood donors always falls short of the demand. For instance, the annual rate of blood donations in India is approximately 7.4 million units for an estimated target of 10 million [1].

Donor deferral burdens the transfusion services to meet the actual requirements in an already existing high demand supply ratio. Blood banks play a pivotal role in ensuring that the donors are deferred for the right reason and thereby does not encroach upon a shrinking donor pool. It is deeply demoralizing for a donor to be deferred, thereby warranting enormous effort to be put in by the blood transfusion service for retention of a temporarily deferred donor in the donor pool.

In India, the blood transfusion services are guided by the donor deferral criteria laid down by the Transfusion Medicine Technical Manual (Director General Health Services, Ministry of Health and Family Welfare, Government of India) [2]. Presently, the donor deferral issue is addressed by the blood banks not only based on these guidelines, but also by taking into consideration certain additional/modified criteria based on individual experiences. We undertook this study with the aim of analyzing the donor deferral pattern over a period of 9 years at our blood bank and to initiate steps to attend to shortcomings if any.

MATERIAL AND METHODS:

Records of all the donor deferrals from January 2006 to December 2014 were preserved at our Blood donation center. A comprehensive retrospective analysis of blood donors deferred in the study period was done. Prospective donors were deferred based on the guidelines provided by the Director General Health Services, Ministry of Fam-

ily and Health Welfare, Government of India and modifications to a few of them were undertaken with an endeavor to keep donor safety the primary concern. Donors who reported to our Blood Donation Center as well as those who came forward for donation at outdoor camps were included in the study. Initially the donors were served a health questionnaire and only those who fit the laid down criteria for donation advanced to the next stage. This is followed by a physical examination with regard to general appearance, weight, temperature, pulse, blood pressure, presence of skin lesions and estimation of hemoglobin.

Low hemoglobin (Hb) has traditionally been the most common reason for donor deferral in developing countries [3]. Donor Hb in our set up is measured by the Hemocue method which is one of the most sensitive and a well established point of care Hb estimation method in blood banking. At our blood bank there are 2 modifications made to the National donor deferral policy. Firstly, we accept donations from donors who have their systolic blood pressure between 100 and 140 mm of Hg as against 100 and 180 mm of Hg and secondly the upper limit of age for donation has been restricted to 60 years as against 65 years.

The data has been compiled so as to include the number of male and female donors and their rates of deferral. Donors deferred temporarily as well as the permanently deferred donors have been analyzed for an array of eligibility criteria.

RESULTS:

A total of 67,751 donors reported for blood donation at the Blood donation center as well as outdoor camps. Demographic profile of the donors is as shown in **Table 1**.

TABLE 1: DEMOGRAPHIC PROFILE OF DONORS

	Registered donors	% of all donors	Deferred donors	% Deferrals
Male	62,128	91.70	6,801	11

Female	5,623	8.30	2,055	36.55
Total	67,751	100	8,856	13.07

Of all the donors who came to donate only 8.30% were females. 13.07% of all potential donors were deferred overall of which 11% male and 36.55% of female donors who came for donation were deferred.

8,856 donors were deferred for various reasons as enumerated in **Table 2**, **Table 3** and **Fig 1**.

TABLE 2: REASONS FOR TEMPORARY DEFERRAL

CRITERIA	TOTAL DEFERRED	% OF TEMPORARY DEFERRAL	% OF TOTAL DEFERRAL
Low Hb	1666	19.49	18.81
Jaundice/Hepatitis	1423	16.65	16.07
Underweight	971	11.36	10.96
Medications	728	8.52	8.22
Hypertension	673	7.87	7.60
Vaccination	460	5.38	5.19
Recent Donation	439	5.14	4.96
Malaria	325	3.80	3.67
Dog Bite	279	3.26	3.15
Underage	249	2.91	2.81
Respiratory Infection	228	2.67	2.57
Skin Disease	178	2.08	2.00
Menstruation	166	1.94	1.87
Alcohol Intake	158	1.85	1.78
Surgery	117	1.37	1.32
Dental Procedure	87	1.02	0.98
Bronchial Asthma	85	0.99	0.96
Tuberculosis	55	0.64	0.62
Inadequate Sleep	34	0.40	0.38
Chicken Pox	33	0.39	0.37
Allergy	26	0.30	0.29
Tattoo	24	0.28	0.27
Generalized Weakness	22	0.26	0.25
Typhoid	22	0.26	0.25
Fasting	19	0.22	0.21
Received Blood Transfusion	16	0.19	0.18
Breast Feeding	15	0.17	0.17
Renal Disease	12	0.14	0.13
Low Blood Pressure	9	0.10	0.10
Weight Loss	6	0.07	0.07
Unhealthy Phlebotomy Site	3	0.03	0.03
Abortion	3	0.03	0.03
Pregnancy	3	0.03	0.03
Anxiety	3	0.03	0.03
Tachycardia	3	0.03	0.03
Liver Abscess	3	0.03	0.03
Peptic Ulcer	3	0.03	0.03
TOTAL	8546	100	96.50

TABLE 3: REASONS FOR PERMANENT DEFERRAL

CRITERIA	TOTAL DEFERRED	% OF PERMANENT DEFERRAL	% OF TOTAL DEFERRAL
Diabetes	102	32.90	1.15
Medications	88	28.39	0.99
Epilepsy	55	17.74	0.62
Heart Disease	38	12.26	0.43
Old Age	11	3.55	0.12

Psychiatric Illness	10	3.22	0.11
HIV	4	1.29	0.04
Hemophilia	1	0.32	0.01
G6PD Deficiency	1	0.32	0.01
TOTAL	310	100	3.50

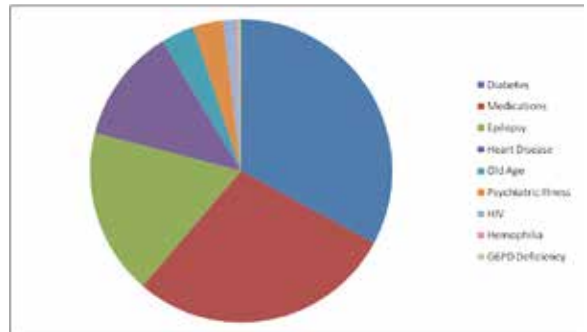


Figure 1: Pie chart showing reasons for permanent deferral of donors

Low hemoglobin accounted for the highest number of donor deferrals constituting 19.49% of all temporary deferrals and 18.81% of all deferrals.

Jaundice/hepatitis accounted for 16.65% of all temporary deferrals. 11.36% of all donors were temporarily deferred for being underweight while 8.52% donors were deferred for concurrent intake of medications. Lifestyle disease diabetes mellitus accounted for the maximum permanent deferrals. 96.50% of donors were deferred for temporary reasons while 3.50% were deferred permanently. Of those who were permanently deferred, 28.39% were done so for having been on medications and 17.74% were deferred for having given a past history of epilepsy.

DISCUSSION:

Blood donors are the pillars of transfusion services and blood donation center is the mirror of any blood bank. Over the period of years strategies have been devised to recruit new donors and enlarge an ever depleting donor pool. However, little attention is paid to the donor psyche after being deferred. Donor deferral and the manner of conveying a donor regarding his provisional incapability to donate plays an important role in retention of temporarily deferred donors. A fine balance has to be struck while deferring a donor so that it does not eat into the existing donor pool.

67,751 potential donors came forward for blood donation, out of which 91.7% were males while only 8.3% were female donors. This is comparable to other studies conducted in various parts of India viz. by Naveen et al in Western India [4] (10%) and by Rehman et al in Northern India [5] (5%). In our study, a total of 8,856 donors were deferred (13.07%). Similar Indian studies conducted by Shalini et al [6] and Naveen et al [4] reported a deferral incidence of 9% and 11.6% respectively. Fred et al [7] reported a donor deferral incidence of 5.12%, which might have been due to tolerant donor selection criteria. Higher incidence of deferral in our study emphasizes the ever increasing importance of a counselor to be present at the donation centers who would not only convey the reason for deferral in a way keeping the donor sentiment a priority, but also further motivate the deferred donors to maintain a healthy lifestyle and donate at a later date. Also, the need of regu-

lar proficiency testing of the blood bank technicians with respect to donor deferral cannot be overlooked. Soft skills required for deferring a donor for the right reason and in the right way possible is an art that needs to be inculcated in daily training. Workshops conducted as a part of continuing medical education on soft skills is required which would also help in achieving the same. 36.55% of all potential female donors were deferred compared to only 11% of all male donors deferred. This may be because of high incidence of anemia in Indian women especially of child bearing age which incidentally also overlaps with the eligibility age range of blood donation [8]. It reiterates the necessity to counsel these temporarily deferred female donors, make suitable interventions like iron supplementation and motivate them for donation at a later instance.

Most of the donors (96.50%) were deferred temporarily and 3.50% were permanently deferred. It would never be known how many of these temporarily deferred donors were motivated to donate blood subsequently. Study done by Rehman et al [5] reported an incidence of temporary deferral of 63.7% while 36.3% donors in their study were deferred permanently. Educating these temporarily deferred donors regarding the deferral criteria and the duration of deferral using Information Education Communication material would go a long way in motivation and retention of these donors.

Low Hb accounted for the highest percentage (19.49) of temporary deferrals. This finding is consistent with other studies conducted viz. Rabeya et al [9] (40.7% deferral). Arslan et al [10] in 2007 also showed that low Hb was the single most important cause of deferral (18.81%). In our study, past history of jaundice/hepatitis was the second most common reason for temporary deferral (16.65%). This perhaps reflects upon the higher prevalence of the disease in the community. It was however, not possible to comment on the exact cause of jaundice in the deferred population. The third most common reason for temporary deferrals in our study was low body weight (11.36%). In a similar study Shalini et al [6] have reported low weight to be the second most common reason for temporary donor deferral (29.2%).

Our study shows that the most common reason for permanent deferral of donors was diabetes mellitus (32.90%). It includes the diabetic donors on insulin as well as those who gave a history of having uncontrolled diabetes. In this regard, it would be rational to use portable blood sugar

monitors at the blood donation center in order to ensure that suspected diabetic donors are neither deferred nor selected inadvertently. Also, with regards to hypertension as a donor deferral criteria, as per the Technical Manual (Director General Health Services, Ministry of Health and Family Welfare, Government of India) a donor having systolic blood pressure between 100 and 180 mm of Hg can be accepted for donation [2]. However, at our center a donor with systolic blood pressure more than 140 mm of Hg is deferred. This certainly decreases the availability of donors but at the same time it ensures that rapid removal of blood from the hypertensive donor does not precipitate a cerebral catastrophic event.

Our study found that 11 donors were deferred due to old age. We strictly follow a policy of deferring donors above the age of 60 years keeping in mind the ever increasing burden of lifestyle diseases with increasing age.

Countries all over the world have adopted relatively flexible policies wherein temporary deferral of donors who are in the permanent deferral category is being carried out wherever possible. In order to ensure that there is adequate supply of blood for those who need it, the policy makers need to review and perhaps revise the deferral policy subsequent to introduction of necessary changes to the blood donor questionnaire. Further studies can be conducted on the subject subsequent to revisions to estimate the impact of these changes on the donor pool. For example a set of donors who need to be addressed are those with uncomplicated hemochromatosis. In a few countries blood from hemochromatosis patients can be accepted for transfusion while in India it is overtly prohibited. Marrow et al in their study have presented successful facilitation of blood donation from this group of donors thereby beefing up the blood donor reserve [11]. However, further studies need to be conducted in India to formulate policies in this regard.

CONCLUSION:

To conclude, the donor deferral policy in our country needs to be reviewed so as to strike a fine balance between the demand and supply of blood. At the same time, consolidating the donor reserve by frequently educating the blood bank staff regarding precise deferral criteria and soft skills would at least ensure retention of temporarily deferred donors who constitute an immense portion of the deferred population.

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