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EVALUATION OF REASONS AND RATE OF DONOR DEFERRAL PRIOR TO BLOOD DONATION IN BLOOD BANK OF A TEACHING HOSPITAL

Pathology

Dr. Minal Wasnik Associate Professor, Department of Pathology, Raipur Institute of Medical Sciences, Raipur - Corresponding author

Dr. Vanita Bhaskar Assistant Professor, Department of Pathology, Raipur Institute of Medical Sciences, Raipur

ABSTRACT

Background: Blood safety a major issue in the field of transfusion medicine. To ensure this, donors undergo stringent donor screening along with screening of donated units. Donor deferral either temporary or permanent is important for this but leads to loss of potential motivated donors. So, it is important to analyze the reasons and rate for donor deferral and retain the motivated donors. **Aims:** To evaluate and analyse the reasons of pre-donation deferrals. **Materials and Methods:** A retrospective study of deferred blood donors data including both in-hospital donations and out-door camps donations, including voluntary and replacement donors. **Results:** Among 4527 donors registered, 274 (6.05%) were deferred from blood donation. Temporary deferral was more common than permanent deferral. The most common reasons for temporary deferral were anaemia, followed by underweight, alcohol consumption recent medication, fever and so on. The common causes for permanent deferral included being overage, HBsAg positivity, uncontrolled diabetes and so on. **Conclusion:** Creating public awareness on common causes of donor deferral may help to lower the deferral rates as well as promote the retention of potential donors.

KEYWORDS:

Blood donors, deferral, pre-donation, anaemia.

INTRODUCTION:

Blood transfusion service is one of the pillars of medical services without which efficient medical care is not possible. This requires adequate supply of safe blood. This can be ensured by stringent donor selection to assess the suitability of prospective donors [1]. Donor deferral leads to loss of precious blood/ blood components and they are less likely to return for future donations [2]. Knowledge of the reasons and rate of donor deferral can guide the recruitment strategy as well as help in retention of potential donors [3]. In India, the criteria for donor selection and deferral are laid down by the Drugs and Cosmetic Act of 1940, last amended in 2001, supplemented by the technical manual by Directorate General of Health Services, Ministry of Health and Family Welfare, Government of India [1]. The present study was undertaken to analyze the donor deferral reasons and rate. This will help in retention of potentially motivated donors.

MATERIALS AND METHODS:

This retrospective study was carried out by retrieving deferred blood donors data maintained by the department over a period of 2-years from January 2014 to December 2015. These included both in-hospital donations as well outdoor camps donations, including voluntary as well as replacement donors. Criteria laid down by the Directorate General of Health Services, Ministry of Health and Family Welfare, Government of India, were used for donor selection and deferral.

RESULT:

Out of 4527 donor registrations, 4253 were successful donations. Total 274 (6.05%) donors were deferred. Among the deferred donors, 84 (30.7%) were males and 190 (69.3 %) were females (Table-1). Majority of deferrals were temporary deferrals (n=188, 67.9%), whereas 86 (32.1%) donors were permanently deferred (Table-2). The most common reasons for temporary deferral included, anaemia, underweight, alcohol consumption, recent medication, fever, underage, hypertension and so on (Table-3). The common causes for permanent deferral are being overage, HBsAg positivity, uncontrolled diabetes, asthma and so on (Table-4).

Table-1: Demographic profile of deferred donors

Gender	Number of deferrals	% of deferrals	% deferrals of total registration
Male	84	30.7%	1.9%
Female	190	69.3%	4.2%
Total	274	100%	

Table-2: Frequency of temporary and permanent deferrals

Type of deferrals	Number of deferrals	% of deferrals	% deferrals of total registrations
Temporary	188	67.9%	4.2%
Permanent	86	32.1%	1.9%
Total	274	100%	

Table-3: Reasons for temporary deferral

Reasons for deferral	Number of deferrals	% of deferrals	% of total deferrals
Anaemia	82	43.6%	29.9%
Underweight	28	14.9%	10.2%
Alcohol consumption	15	8.0%	5.5%
Recent medication	10	5.3%	3.6%
Fever/ URTI	6	3.2%	2.2%
Underage	6	3.2%	2.2%
Menstruation	6	3.2%	2.2%
Hypertension	5	2.7%	1.8%
Recent donation	3	1.6%	1.1%
Hypotension	3	1.6%	1.1%
Tuberculosis	3	1.6%	1.1%
Dental extraction/ surgery	4	2.1%	1.5%
Jaundice/ hepatitis	2	1.1%	0.7%
Lactation	2	1.1%	0.7%
Typhoid	2	1.1%	0.7%
Malaria	2	1.1%	0.7%
Miscellaneous (poor vein, tattooing, ear piercing, vaccination, etc.)	9	4.6%	3.3%
Total	188	100	

Table-4: Reasons for permanent deferral

Reasons for deferral	Number of deferrals	% of deferrals	% of total deferrals
Overage	32	37.2%	11.7%
HBsAg	10	11.6%	3.6%
High risk behaviour	10	11.6%	3.6%
Uncontrolled Diabetes mallitus	8	9.3%	3.0%
Asthma	7	8.1%	2.5%
Heart diseases	6	7.0%	2.2%
Epilepsy/ psychiatric illnesses	5	5.8%	1.8%
HIV	3	3.5%	1.1%
HCV	3	3.5%	1.1%
Cancer	2	2.4%	0.7%
Total	86	100	

DISCUSSION:

Donor selection is the most important steps in improving the safety of

blood and blood products. Knowledge and awareness regarding the reasons of donor deferral is important to avoid the loss of the potential donor.

In our study, total number of donor registered were 4527, out of which 4225 were male and 302 were females. The donor deferral rate in our study was 6.05% (n=274) in our study. Rabeya et al [4] have reported a similar deferral rate of 5.6 %, while Di Lorenzo et al [5] have founded a much higher deferral rate of 21.6%. Zou et al [6] have reported a deferral rate of 12.8% while Arslan et al [7] found a slight higher deferral rate of 14.6% in their study. So much variation in donor deferral rate could be due to regional diversity as well as variation in donor selection criteria.

In our study, temporary deferral rates were more than permanent deferrals, which is 67.9% for temporary deferral and 32.1% for permanent deferral. Similar results were observed in studies by Rehman et al [8] as well as by Pisudde et al [9].

The major cause of temporary deferral in our study was anaemia (43.6%), which was similar to study performed by Halperin et al [10] which showed low haemoglobin as the most common cause in 46% of the temporary deferrals. Similar type of results were observed in other studies as well [11, 12, 13, 14]. The high prevalence of anaemia could be due to poor nutritional status and ill health. These donors should be provided the information regarding treatment of anaemia with follow up of such cases.

Among reasons of temporary deferrals, anaemia was followed by being underweight (14.9%) and alcohol consumption (8.0%). Such high percentages have not been observed in other studies and this could reflect regional life style along with improper nutrition.

Other causes of temporary deferral included fever, recent medications, recent donations, jaundice, and so on. A proper track regarding management and follow up of the temporary deferred donors should be there, so that these potentially motivated donors can be recruited back for future donation.

In our study 32.1% of donors were deferred for permanent reasons, which is higher than Custer et al [15] who reported a permanent deferral rate of 10.6% and Arslan [7] who reported a rate of 10%. However, our result is similar to the observation made by Rehman et al [8]. This high permanent deferral rate could be due to transfusion transmitted infections being included in our study. Among the common reasons of permanent deferrals being overage was closely followed up by HBsAg positive status and high risk behaviour. The HBsAg positivity rate is comparable to the study conducted by John et al [16]. HIV positivity was seen in 3.5% cases as observed by Rehman et al [8]. We also found a rate of 3.5% of people with high risk behaviour. Collection of blood from these people creates a risk to recipient by transfusion. This increases the need of eliciting more detailed history while screening, history of tattooing, piercing, drug addiction, high risk sexual practice etc. as on rare occasions even a screening test may turn as false negative. Public awareness needs to be created regarding the routes of transmission of transfusion transmissible infections.

CONCLUSION:

The present study evaluates the rate and reasons of donor deferral showing that the donor deferral rates were similar in different populations. However, the reasons for deferral differ, reflecting the difference in socioeconomic status and environment along with differences in donor selection criteria. Analysis of the rate and reasons with categorization of deferrals as temporary & permanent deferral may help medical personnel involved in blood collection to be more focused in donor screening. All the potential donors deferred for temporary reasons should be informed, counselled and educated regarding the reasons for deferral. Also, these temporary deferred donors require appropriate follow up and management so that these potentially motivated donors can be recruited back for future donation. So to conclude, creating public awareness on common causes of donor deferral may help to lower the deferral rates as well as promote the retention of potential donors.

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