

AN EVALUATION OF BLOOD DONOR DEFERRAL CAUSES AT TERTIARY CARE CENTRE OF SRIKAKULAM DISTRICT

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ABSTRACT

BACKGROUND

Analysis of donor deferral pattern indicates the impact of knowledge of deferral criteria in blood donor. Donor deferral causes varies from region to region, hence the need to study the pattern of donor deferral.

AIM OF THE STUDY

To know the prevalence of donor deferral and the various causes responsible for them in our Institute.

METHODS AND MATERIALS

Retrospective study from January 2013 to August 2015. Demographic details and the various causes of permanent and temporary deferral were recorded and analysed.

RESULTS

Total number of deferral donors was 7% with more number of cases in females. The deferral donors with permanent causes were 19.7%, commonest being symptoms suggestive of HIV (26.14%). The deferral donors with temporary causes were 80.28%, commonest being underweight and anaemia.

CONCLUSION

Our Institute caters to the needs of rural and tribal population. To decrease the deferral rate and decrease the number of cases with symptoms suggestive of HIV, more emphasis has to make in creating awareness regarding the criteria for blood transfusion and self-deferral.

KEYWORDS

Blood Donor, Deferral, Causes, Evaluation.

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INTRODUCTION

In current medical and surgical practice, blood transfusion is a life-saving procedure. The National AIDS Control Organization's (NACO) statistics shows that the annual rate of blood donations in India is about 7.4 million units against the requirement of 10 million units. In rural and tribal areas getting a suitable donor meeting the criteria laid by standards for blood banks and blood transfusion services is very difficult. Deferral leads to loss of precious blood/components available for transfusion. For preventing this, we should have knowledge regarding the causes of deferral and their frequency. Our institute caters to the needs of rural and tribal population. This is a retrospective study conducted in the blood bank to know the spectrum of deferrals and their prevalence.

MATERIAL AND METHODS

This is a retrospective study from January 2013 to August 2015, at the blood bank of the tertiary care centre.

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The total numbers of registered cases were recorded during this period. The study included involved donors at voluntary blood donation camps and at the blood bank. Repeat donors were not included in the study. Each donor was examined by the medical officer based on detailed medical history and brief physical examination as per the criteria laid down by The National AIDS Control Organization, May 2007. Donor selection was made after a brief pre-donation counselling, followed by questionnaire in local language. For donors who were illiterate, assistance was given by registration staff.

Demographic details like name, address, occupation, educational status, date and time of donor selection were recorded. Criteria for donor selection were age between 18-65 years, Hb not less than 12 gm/dL or PCV less than 36%, systolic blood pressure between 100-140 mmHg and diastolic blood pressure between 60-90 mmHg, temperature not more than 37.50C/99.50F, pulse should be between 60-100 beats/min, regular, no history of any serious illness, not pregnant or in the post-partum period. Criteria for permanent deferrals were being positive for HIV, HbsAg/HCV, antibiotic history suggestive of HIV infection and chronic discomfort. Rest of the donors was considered as temporary deferrals. The recorded data was analysed.

RESULTS

The total number of donors registered during the period were 11846. Total number of cases selected as donors were 11070

(93.44%). Voluntary blood donors were 6688 (60.41%) and relative/replacement donors were 4382 (39.49%) (Table 1).

Total number of deferral donors was 776 (7%). Deferral donors in males were 627 (5.9%) and in female donors were 149 (33.40%) (Table 2).

The deferral donors were maximum in the age group of 21-30 years (36.04%) in males and 18-20 years in females (67.78%) (Table 3).

Maximum numbers of deferred donors were students in both males and females; 70.01% and 58.38% respectively (Table 4).

Both in males and females the deferred donors were undergraduates; 61.405 and 59.06% respectively (Table 5).

The percentage of deferral donors with permanent causes were 19.71%. The main cause for permanent deferral were symptoms suggestive of HIV (26.14%) followed by hypertension (24.1%), diabetes (20.91%) and asthma (18.30%) (Table 6).

Most common causes for temporary deferral in donors were underweight (17.01%) and anaemia (22.63%) (Table 7).

Type of Donor	Number of Donors	Percentage
Voluntary Blood Donors	6688	60.41%
Relative/Replacement Donors	4382	39.59%
Total	11070	100%

Table 1: Number of Donors Selected for Blood Donation

Donors	Male	%	Female	%	Total	%
Registered	11251	94.97	595	5.02	11846	-
Selected	10624	94.42	446	74.95	11070	93
Deferred	627	5.9	149	33.40	776	7

Table 2: Number of Donors Deferred

Age	Male	%	Female	%
18-20	140	22.32	101	67.78
21-30	226	36.04	40	26.84
31-40	135	21.53	7	4.69
41-50	92	14.68	1	0.67
51-60	30	4.8	-	-
>60	4	0.63	-	-
Total	627	80.80	149	19.20

Table 3: Age Distribution in Deferred Donors - 776

Occupation	Male	%	Female	%	Total	%
Employed	102	16.26	40	26.84	142	18.29%
Unemployed	86	13.71	22	14.76	108	13.91%
Students	439	70.01	87	58.38	526	67.78%

Table 4: Occupational Status in Deferred Donors - 776

Education	Male	%	Female	%	Total	%
Illiterate	45	7.17	1	0.67	46	5.92
Intermediate	72	11.48	18	12.08	90	11.59
Undergraduate	385	61.40	88	59.06	473	60.95
Post-graduate	125	19.93	42	28.18	167	21.52
	627		149			

Table 5: Educational Status in Deferred Donors - 776

Causes for Permanent Deferral	Male	%	Female	%	Total Deferral	%
Hypertension	35	24.30	2	22.22	37	24.1
Diabetes	31	21.52	1	11.11	32	20.91
Symptoms suggestive of HIV	39	27.08	1	11.11	40	26.14
Tuberculosis	5	3.47	0	0	5	3.26
Epilepsy	1	0.69	1	11.11	2	1.30
HbsAg	4	2.7	1	11.11	5	3.26
Asthma/Dyspnoea	25	17.36	3	33.33	28	18.30
Above age	4	2.77	0	0	4	2.61
Total	144		9		153	

Table 6: Causes of Permanent Deferrals - 153

Cause for Temporary Deferral	Male	%	Female	%	Total	%
Restlessness	10	2.07	1	0.71	11	1.76
Fever	25	5.17	3	2.15	28	4.49
Underweight	69	14.28	37	26.6	106	17.01
Anaemia	88	18.21	53	38.12	141	22.63
Under age	19	3.93	16	11.51	35	5.61
Low BP	8	1.65	2	1.4	10	1.60
Short interval of donation	25	5.17	3	2.15	28	4.49
Minor surgery	5	1.03	1	0.71	6	0.96
Phobia/apprehension	24	4.96	6	4.31	30	4.81
Tattoo	15	3.10	0	-	15	2.40
Aspirin intake	3	0.62	0	-	3	0.48
Medication	25	5.17	3	2.15	28	4.49
Alcohol (48 hrs.)	49	10.14	0	-	49	7.86
Dog bite (vaccination)	18	3.72	0	-	18	2.88
Typhoid	10	2.07	0	-	10	1.60
Malaria	23	4.76	1	0.71	24	3.85
Vaccination	8	1.65	0	-	8	1.28
DUB	0	0	4	2.87	4	0.64
Cold	14	2.89	2	1.4	16	2.56
h/o abortion	0	-	2	1.4	2	0.32
Paresthesia	6	1.24	0	-	6	0.96
Snake bite	3	0.62	0	-	3	0.481
Tooth extraction	9	1.86	2	1.43	11	1.76
Ear piercing	2	0.41	1	0.71	3	0.48
Received BT	11	2.27	1	0.71	12	1.92
Jaundice	7	1.44	1	0.71	8	1.28
Major surgery	7	1.44	1	0.71	8	1.28
	483		140		623	

Table 7: Causes for Temporary Deferral - 623

DISCUSSION

Donor selection is very important in transfusion medicine. The rate and reasons for deferral differ from region to region and from one centre to other. In the present study, the overall donor deferral was 7% with predominance in females (33.40%). Snehal Paul et al.¹ from Gujarat reported donor deferral of 10.37%, Agnihotri et al.² of Western India (11.6%), Chaudary et al.³ (16.4%), Bahadur et al.⁴ (9%), Rabeya et al.⁵ (5.6%), Kwa et al.⁶ of Singapore (7.1%), Unikrishnan B.⁷ (5.2%), Nagarekha Kulkarni.⁸ (4.27%) and Sundar P.⁹ (6%).

In the study by Nagarekha Kulakarni of Karnataka.⁸ the deferral donors (74.33%) were in the age group 18-38 years and Shalini Bahadur of Delhi.¹⁰ observed 89.7% of donors in the same age group. In the present study, deferral donors in males (36.04%) were in the age group of 21-30 years and

67.78% in females with age range of 18-20 years. The reason was prevalence of anaemia and underweight in the female population.

Students and educational status of undergraduates were the major donor population as they can be easily motivated and also comprise the major group in donor deferral mainly due to underweight and anaemia. In study by Unnikrishnan B of South India.⁷ student population comprised 31%. In the present study, donor deferral in students were 67.78% with undergraduates being 60.95%.

Donor deferral was tabulated into temporary and permanent causes. Nagarekha Kulakarni.⁸ and Custer et al.¹¹ reported 68% of temporary and 32% of permanent deferral causes in their study. Snehal Patel et al.¹ observed that in 79.52% the causes for donor deferral were temporary and 20.47% were permanent. In the present study, 19.71% were permanent deferrals and 80.28% were temporary deferrals.

In the present study, the most common cause for permanent deferral in males was symptoms suggestive of HIV (27.08%) and in females was bronchial asthma (33.33%). The other causes for permanent deferral was hypertension (24%) and diabetes (20.91%). The main cause for temporary deferral was anaemia (22.63%) and underweight (17.01%). Anaemia (38.12%) and underweight (26.61%) was more prevalent in females.

Snehal Patel et al.¹ in their study observed that the most common reason for deferral was anaemia followed by hypertension (16.51%). Agnihotri et al.² (11.1%), Unnikrishnan et al.⁷ (13.18%) and Rathod et al.¹² (14.74%) in their study hypertension was the main cause for deferral. In the study by Nagarekha Kulakarni.⁸ three most common causes of temporary deferral in females were anaemia, underweight and hypotension and in males were underweight, anaemia and alcohol. In the study by Naveen Agnihotri.² (56%), Arslan et al.¹³ (20.7%) and Halpenn et al.¹⁴ (46%) anaemia is the main cause for deferral, especially in females. Among permanent deferrals was hypertension, which was similarly observed in study by Sunder P et al.⁹

The share of female donors was very small (5%) in the present study which might be due to fear, lack of awareness and motivation among females. In the study by Snehal Patel, the female donor population constituted 6.39%.

CONCLUSION

In the present study, the share of female donors was small with donor deferral of 33.40% when compared to donor deferral in males 5.9%. The common cause of temporary donor deferral in females was underweight, anaemia and in males it was underweight, anaemia and intake of alcohol. The common cause of permanent deferral in males was symptoms suggestive of HIV (27.08%) followed by hypertension. In females 11.11% had symptoms suggestive of HIV. The number

of deferrals with respect to HIV can be reduced by self-deferral, hence reducing the risk of HIV transmission. The donor deferral can be reduced by providing information and educating the donors about the selection criteria. This results in better acceptability and negative feeling about rejection in blood donation.

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