IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)
e-ISSN: 2279-0853, p-ISSN: 2279-0861.Volume 20, Issue 5 Ser.10 (May. 2021), PP 38-40
www.iosrjournals.org

Evaluation of Blood Donors Deferment and Their Causes in a Tertiary Health Centre, Dr SCGMC NANDED

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Abstract:
Blood transfusion is a lifesaving intervention globally. In the blood donation it is very important to maintain the safety of donors therefore blood donor selection is of utmost importance as the screening of blood bags for infectious diseases. However due to deferment of blood donors in blood donation camp there is loss of valuable blood and blood components which can be used to save many lives . Therefore it is necessary to prevent the deferment of blood donors and thus we conducted this study to know various causes and prevalence of blood donors deferment in our hospital DR. SCGMC NANDED.

METHODS:
A retrospective study of donors from 1 August 2019- 31 July 2020 was conducted from the data collected from Blood bank camp Donor register of DR. SCGMC, NANDED and was analyzed further to know the temporary and permanent causes of deferment and their prevalence.

RESULT:
Of total 1850 number of registered donors, total number of deferrals were 62 (3.34%) of which 37 (59.67%) were temporary deferrals and 25(40.33%) were permanent deferrals. Anaemia and hypertension were found out to be the most common causes of deferrals in this study.

CONCLUSION:
Such study can be used to understand and improve selection criteria for blood donation in future. More and more emphasis can be given on safety of donors and in motivation of temporary deferrals to come for blood donation in future.

Keywords: *DONOR DEFERMENT, DEFERMENT PATTERN, DONOR SELECTION CRITERIA, BLOOD DONATION.*

Date of Submission: 15-05-2021 Date of Acceptance: 31-05-2021

I. Background

- Recruitment of voluntary, safe, and healthy blood donors for the provision of quality blood products to needy patients in a timely-manner is a constant challenge faced by blood transfusion services in India. According to the world health organisation (WHO), a minimum need to meet a nation's blood requirement is approximately 1% of its population. In India, annual blood collection during 2016–17 was 11.1 million units against the target of 13 million units with a shortfall of 1.9 million blood [1,2]. Despite having a huge population of over 1 billion where 50% to 60% are eligible for blood donation, still, a continuous shortage of blood exists. [3] Therefore it is of utmost importance to take necessary measures to increase the blood supply without compromising on the donor's health or safety of transfusion recipients. Besides donor recruitment measures, developing strategies for retention of already motivated and recruited donors is considered as "need of the hour" to meet the rising demand despite shrinking donor pool [4-7]. Deferrals could be temporary or permanent [8]. Temporary deferral connotes that the prospective donor is deferred based on removable, time bound factor such as low haemoglobin, haematocrit and more, while permanent deferral implies that the prospective donor has non-removable, long lasting factor such as possibility for any of the transfusion-transmissible infections (TTIs) [9]. Every blood centre has to balance the focal point between acceptable quality and desired quantity. Nodal agencies like the National AIDS Control Organization (NACO) and the State Blood Transfusion Councils (SBTCs) do not actively collect data on donor deferrals. Their formats for data collection are more inclined toward "quantity" of supply and deferrals due solely to infectious marker positivity in donated units. As a result, most of the efforts at government, community, and individual level are focused at recruiting more and more new donors while ignoring the retention and re-entry of those recruited but deferred due to various causes. This can be achieved by analysing the reason of these deferrals amongst blood donors, addressing the issue and enhancing the cause if possible. Knowledge of the pattern and reasons for donor deferral is crucial in guiding for

future recruitment plans. Hence, this study was aimed at determining the rate and reasons for donor deferral in DR SCGMC, NANDED.

AIMS AND OBJECTIVES:
Evaluation of blood donor deferment and their causes.
To know the causes of temporary and permanent blood donor deferment.

II. Materials And Methods:

- **Study design –** It is a simple cross-sectional study.
- **Study Period** – 1 year starting from 1st AUG 2019 to 31st JULY 2020.
- **Target population** – All the blood donor reporting for blood donation to blood bank in the study period.
- **Study centre:** Blood Bank DR. Shankarrao Chavan Government Medical College and Hospital Nanded, tertiary care centre.
- **Selection criteria** – Donor selection done according to the Drugs and Cosmetic Act 1940, of the donors who came to Blood Bank, DR Shankarrao Chavan Government Medical College and Hospital Nanded from 1st AUG 2019 to 31st JULY 2020.

♣ **Inclusion Criteria**: All the donors reporting for blood donation in coming in Blood Bank, DR Shankarrao Chavan Government Medical College and Hospital Nanded from 1st AUG 2019 to 31st JULY 2020.

♣ **Exclusion criteria**: As the study includes all the donors voluntarily reporting for blood donation, there is no exclusion criteria

- **Study Subjects**: – All the donors reporting for blood donation from 1st AUG 2019 to 31st JULY 2020.
- **Data Collection**– Data is collected from record maintained by blood bank and analysed.

Table no.1 Demographics of donors

Male/Female	Registered for donation	No. of deferrals	% deferrals of total registration
Male	1440	45	2.43 %
Female	410	17	0.91 %
Total	1850	62	3.34%

Table no.2 Frequency of temporary and permanent deferent donors

Type of deferent	No. of deferrals	% of deferrals	% deferrals of total registered donors
Temporary	37	59.67 %	2.00%
Permanent	25	40.33 %	1.35%
Total Deferents	62	100 %	3.35%

Table no. 3 Gender wise frequency of deferent among male and female donors

Donors	No. of donors	Deferral	% deferral among male and female donors
Male	1440	45	3.12 %
Female	410	17	4.14 %

Table no.4 Temporary deferrals

Cause of deferral	Numbers	% of temporary deferrals	% of total deferrals
ANEMIA	13	35.13%	20.96%
INFECTION	6	16.21%	8.95%
LOW WEIGHT	4	10.81%	6.45%
MENSTRUATION	3	8.10%	4.83%
ALCOHOL INTAKE WITHIN LAST 72 HRS	3	8.10%	4.83%
PREVIOUS DONATION WITHIN 3 MONTHS	3	8.10%	4.83%
ON MEDICATION	2	5.40%	3.22%
FEVER	2	5.40%	3.22%
ANY RECENT SURGERY	1	2.70%	1.61%
TOTAL	37	100%	58.90%

Table no. 5. Permanent deferrals

Cause of deferral	Numbers	% of permanent deferrals	% of total deferrals
HYPERTENSION	11	44.0%	18.33%
DIABETES	5	20.0%	8.06%
CARDIAC REALTED PROBLEMS	3	12.0%	4.83%

ASTHMA	3	12.0%	4.83%
HEPATITIS	2	8.0%	3.22%
EPILEPSY	1	4.0%	1.61%
Total	25	100.0%	40.88%

III. Result:

In this study, total 1850 registered donors were studied among which 1440 were male donors and 410 were female donors. Total number of deferrals were 62 (3.34%) of which 45 (2.43%) were males and 17 (0.91%) were females (Table no. 1) The percentage of male deferrals was found to be more than female deferrals but percentage of deferrals in male donors among males (3.12%) was less as compared with deferrals in female donors among females (4.14%) (Table no.3). Among total deferrals most were due to temporary causes (59.67%) than due to permanent causes (40.33%) (Table no. 2). The most common cause of deferral among both temporary and permanent combined was Anaemia (20.96%) followed by Hypertension (18.33%) followed by infection (8.95%) and then diabetes (8.06%) (Table no. 4 & 5).

IV. Discussion:

Among 1850 registered donors, a total of 62(3.34%) donors were deferred in this study. The donor deferral rate in this study is comparable to other study reports of which the deferral rates were ranging from 5%-20%. Deferral rates of various other studies were 6% by Sundar et al [10], 5.6% by Rabeya et al [11] ,16.4% by Chaudhary et al.[12], 14.4% by Lim et al.[13].This shows that deferral rates among donors differs from places to places which may be due to different selection criteria or may be some donors were counselled about the criteria required for blood donation. The most common cause of deferral among both temporary and permanent combined was Anaemia (20.96%) followed by Hypertension (18.33%) followed by infection (8.95%) and then diabetes (8.06%). The number of deferred donors were more temporary(59.67%) than with permanent cause (40.33%).

V. Conclusion:

This study showed deferral rates near similar to some other related studies. The difference in deferral rates may be due to different selection and screening criteria protocols or due to pre-knowledge about donation criteria in some donors. Results of such studies can be used to understand and improve selection criteria for blood donation in future also more emphasis should be given for motivation of temporary deferrals to come for blood donation in future.

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