

Whole Blood Donor Deferral Causes and Evaluation in Tertiary Care Centre

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Abstract

Original Research Article

Introduction: Blood donor deferral means that an individual is not eligible to donate blood or blood components based on the criteria used to protect the health and safety of both donors and transfusion recipient. A prospective donor may be deferred at any point during the collection and testing process. This step is important in ensuring safe transfusion practices to the recipients and the health of the donor, This is a study to categorise the deferrals according to the reasons and to delineate the causes for deferral among the whole blood donors. **Methodology:** This was a descriptive cross sectional study performed at Department of transfusion medicine at Kamineni academy of medical sciences and research centre at LB nagar, Hyderabad .This study was performed from January 2018 to December 2020. The various reasons for deferral of the whole blood donors from the donations were collected from the donor deferral registry. **Results:** The donor deferral rates for the years 2018, 2019, 2020 were 8.3%, 7.9% and 4.3% respectively, out of the total donations the highest deferral rate was among the female population the common reason being anemia, the other causes for deferral being alcohol consumption and tattooing and medical causes. **Conclusion:** We observe from this study that the maximum number of deferrals among the female population were and the cause is preexisting anemia, it is important to advice and counsel the donors before the blood donation to avoid adverse reactions among the donors as well as the recipients, awareness programs and donor motivation programs must be implemented.

Keywords: Whole blood donors, anemia, safe blood donation, alcohol consumption, tattooing.

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INTRODUCTION

The safe blood transfusion practices begin with proper donor selection. The blood bank physician must take proper care that the donor doesn't suffer from any adverse donor reactions, doesn't pose a threat to the recipient. All the blood donors must be healthy and they must be able to tolerate the minimum amount of hypotension and bradycardia that happen during phlebotomy and collection [1]. The donor must also be free from all the diseases and risk factors that can transmit infections through blood transfusion [2]. The twofold purpose of blood donor screening is to minimize the risks to both the blood recipient and the donor. Donors should be informed as early as possible about all aspects of the donation procedure and about the importance of critical self-evaluation and self-exclusion for those who do not qualify [3]. Pre-recruitment information about donor qualifications and pre-donation information about risk factors for

transmitting infections through transfusion should lead to self-deferral by some donors.

When the donor presents for donation, written educational material is given, including a list of deferral medications. The donor screening process has four major aspects: Registration which includes consent of the donor, and demographic information, of any laboratory testing abnormality or he/she may be called for future donation, Medical history, physical examination, laboratory testing [3]. Demographic information should be complete and correct so that the donor can be informed.

The donor's medical history is evaluated. The donor is accepted by a suitably qualified person trained to follow prescribed guidelines for the selection of blood donors. This person works under the instructions of a physician of the blood bank. A donor with any abnormal condition is referred to the physician of blood

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bank, who takes the final decision on whether blood should be collected from such a donor or not. In doubtful cases the donor should be deferred.

Table 1 shows the list of conditions that cause potent adverse reactions if the donor has the mentioned

conditions in column 1 the 2 nd could shows adverse reactions to the recipients who have received transfusion from the donor with mentioned conditions and the 3rd column shows disorders for both the donors as well as the recipient.

Table-1

Donor	Recipient	Both
Age	Alcohol consumption	Diabetes
Weight	Allergy	Epilepsy
< 3 months donation	Medications	Low hemoglobin
High / low B.P	Transfusion <6 months	
Apprehensive donor	Dental surgery	
High / low pulse	Tattooing/ear piercing	
Previous vasovagal reaction	Fever	
Kidney/ lung disease	Jaundice	
Fasting donor	High hemoglobin	
	Vaccinations	

METHODOLOGY

This was a descriptive cross sectional study performed at Department of transfusion medicine at Kamineni academy of medical sciences and research centre at LB nagar, Hyderabad .This study was performed from January 2018 to December 2020. The various reasons for deferral of the whole blood donors from the donations were collected from the donor deferral registry which was recorded using the standard donor questionnaire, followed by medical history and examination. Privacy and confidentiality of the study subjects were maintained during all the stages of the study.

RESULTS

The total number of whole blood donations for three years were 6187, the total deferrals included 438. The total percentage of deferrals are 6.8%. The total number of whole blood donations in the year 2018, were 2540, out of which the total deferrals were 198 out of 63 donors were deferred because of anemia, which was the most common cause which included most of the female donors, the next common causes included

high blood pressure in the middle aged groups, the common cause of deferral included alcohol consumption and tattooing among the male donors very few deferrals were because of vaccination, preexisting health conditions and ongoing treatment for other conditions .The deferral percentage on the whole for year 2018 were: 8.3%, out of which the total female donation was 79 out of 44 which donors were deferred because of anemia , which is equal to 55.6%, the total blood donations in the year 2019 were: 2268, the total deferrals 180, 7.9% the common causes for deferral were due to anemia and high hemoglobin. Low hemoglobin was prevalent among the female donors. The total female donors were : 58 , out of which 30 are deferred because of anemia were 51.7%, The total number of donations in the year 2020 were: 1379, out of which the total number of deferrals were: 60, the most common causes among the male donors were alcohol consumption and tattooing, the total female donors were 13 and there were no deferrals and the percentage of deferral among the female was 0% and total deferral percentage was 4.3 percentage the year 2020 had the least number of donations due to the ongoing pandemic.

Table-2

Total donations	Total deferrals	Deferral percentage
6187	438	6.83%

Table-3

Year	Total donations	Total deferral	Deferral percentage
2018	2540	198	8.3%
2019	2268	180	7.9%
2020	1379	60	4.3%

Table-4

Causes of deferral	Total deferrals	Percentage deferral
Anemia	142	32.4 %
Alcohol	72	16.4 %
Tattooing	68	15.5%
Medical and surgical causes	32	7.3%

DISCUSSION

In this study, the deferral percentages for the year 2018, 2019, 2020 were: 8.3%, 7.9% and 4.3% respectively the total deferral percentage was: 6.83%, the rate of deferral differs from region to region and the donor attitude and motivation also plays a key role, the highest deferral rates were reported by Chaudhary *et al.*, [2] Agnihotri *et al.*, [3] our results are comparable with the Michael Muller *et al.*, [4] with the donor deferral rate of 6.2%, The reasons for deferral are categorised into temporary and permanent deferrals in our study there were only temporary deferral during the study period, the most common causes of deferral in our study included anemia [5-8] which was more predominant among the female population and the next common cause was tattooing and alcohol consumption and medical and surgical procedures through which the donors underwent. The deferral percentage of anemia was 38.6% which was observed in the female population which was comparable to the study by Shalini Bahadur *et al.*, 34.2%, [5]. The other study by Samuel Antiwi-Baffour *et al.* [6], showed 17.1% of deferrals among the healthy voluntary blood donors. The deferral percentage due to alcohol consumption in our study was 11.8% which is comparable to the study by Sabari Priya *et al.*, [7] which was 12.23% in their study, the least donor deferral rate was observed in Talonu *et al.*, [9] with a deferral rate of 4%. The percentage of tattooing was 4.2% which was similar to study by Dhivya Kandasamy *et al.* [10] and Sabari Priya *et al.* [7] 4.55%. The reasons for permanent deferrals included known uncontrollable hypertension and treatment chronic diseases like tuberculosis. The other temporary deferrals included: treatment for skin diseases, underweight, underage and overage [10-14].

Anemia is one of the leading causes for deferral at the pre donation deferral stage and it is the most common among the female donors, the causes for anemia are nutritional, parasitic in the Indian community [11]. The lack of knowledge for blood donation criteria resulted in alcohol consumption the day prior to the donation and lack of motivation was the major causes for high risk behaviours [15].

CONCLUSION

We observe from this study that the maximum number of deferrals was among the female population and the cause is preexisting anemia. Among the males included high hemoglobin values, alcohol consumption, tattooing and treatment of other medical conditions, it is important to advise and counsel the donors before the blood donation to avoid adverse reactions among the donors as well as the recipients, awareness programs and donor motivation programs must be implemented.

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