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PROFILE OF BLOOD DONORS IN A TERTIARY CARE CENTRE IN SOUTH INDIA- A CROSS SECTIONAL STUDY

Pathology

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ABSTRACT

Blood is considered a scarce resource in the world. Many patients requiring transfusion do not have timely access to safe blood and many lives are lost because of this reason. According to the WHO Information Sheets, 2005 80% of the worldwide population has access to only 20% of safe blood. **Aim-** To analyse the donor profile and the need for voluntary blood donation drives. **Methodology:** A descriptive cross-sectional study conducted among blood donors attending the blood bank of a Tertiary care centre in South India from 2015 to 2019. **Results:** Out of 7979 blood donations, voluntary donors were only 8.5 % with most (97.8%) of the donors being males. The donors arriving at the blood bank were between 18 and 64 years of age. Of the voluntary donors, about 37% were first-time blood donors. The commonest available blood group was O positive (34.1%) and the least available was AB negative (0.8%). Among the reasons for donor rejection, mismatch between the donor's blood group and that of the requested unit was the commonest (25.8%) followed by hypertension (22.9%) on examination. HBsAg seropositivity was the majority (0.5%) among the transfusion transmitted infections screened. **Conclusion:** Efforts should be made to direct all the donations towards voluntary non remunerated ones. Awareness among the general population about the need of blood donation, educating them about the criteria of acceptable donors and discussing the general myths and facts about donation process is also important.

KEYWORDS

Blood Donation, Voluntary Donors, Replacement Donors

INTRODUCTION

Blood is considered as a life-saving drug; which despite efforts could not be manufactured artificially. [1,2] Thus we are left with the option of depending on blood donors worldwide for this precious gift. Voluntary non remunerated donors are considered the safest among the different types of donors. [3,4] WHO in its bi-regional workshop has defined Voluntary blood donation as the donation of whole blood or plasma voluntarily without inducement or reward.[5,6] Replacement, family and professional donors could be sources of unsafe blood as they might mask important medical history. According to the World Health Organisation and NACO statistics, the annual blood requirement in India was 80 lakh units in 2012-2013 and with over a population of 1 billion, India has a shortage of safe blood.[1] Time and again the question of availability of safe donations have been reviewed. Some studies have proved the deficiencies in the structured manner of voluntary blood donations.[7] Up to 25% of donations are supposed to be kept as a buffer in each blood bank according to the NACO guidelines which are maintained by only 20% blood banks.[1] This could be met only by increasing voluntary donations. Misconceptions regarding donations including anaemia and contracting infections remain in the majority of the population. [1] Awareness programmes and educating the common population emphasising the benefits of donations could help resolve these issues up to a greater limit.

MATERIALS AND METHODS

Study setting- This cross-sectional study was done in the department of transfusion medicine of a tertiary care hospital in South India.

Sample size and study group- A total of 7979 donors over a period of 5 years (2015- 2019) were included in the study. The data was collected by reviewing the records of the blood bank during the time period. The study group were divided into voluntary, replacement and family donors. Voluntary non-remunerated blood donor (VNRBD) means that a person gives blood, plasma or cellular components with his/her own free will and receives no payment for it. A small token of appreciation can be provided. A replacement / family donor is the one who donates when it is required by the community or a family member. The total units of whole blood or each component prepared was also studied.

Statistical analysis- The data was analysed using PSPP 1.4.1

RESULTS

From 2015 to 2019, 7979 blood donations were done out of a total of 10,008 prospective blood donors, while 2,029 (20.2%) were deferred by following the donor selection criteria. Voluntary donors were 685 which is 8.5 % total donations. Most of the donors were males with females amounting to only 228, which is 2.8 % of the total number of blood donors. The age range was from 18 to 64 years. Out of the reasons for rejection, 525 (25.8%) donors were rejected due to the mismatch of the requested group and the group of the donor, followed by 465 (22.9%) rejections due to hypertension on examination.

Repeat donors/family donors were 74.3% of total donors, while first-time donors were 25.7%. Of the voluntary donors, 37% were first-time blood donors.

4 % of donors were relatives of the patient, out of which 2/3rd were repeat donors. Data illustrated in **Figure 1**.

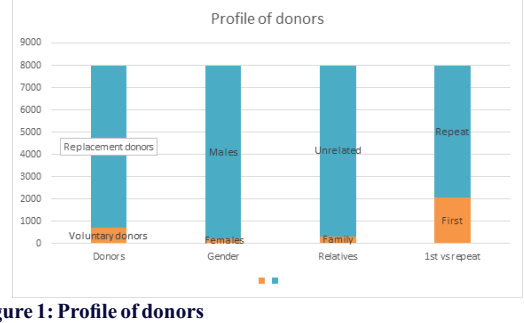

Figure 1: Profile of donors

Of the total 9905 blood groups done the most available group was O positive (34.1%) and the least available was AB negative (0.8%). Distribution of the donors according to the blood groups is shown in **Table 1**.

Table 1: Distribution of the prospective donors according to the different blood groups.

Blood Group	Number	Percentage (%)
A+	1885	19.0
A-	225	2.2
B+	2978	30.0
B-	444	4.4
AB+	503	5.0
AB-	83	0.8
O+	3387	34.1
O-	400	4.0

Seropositivity of the donated blood is checked routinely and transfusion transmissible infections (TTI) are screened. HIV, HBsAg, HCV testing using ELISA method, RPR and Malaria using antibody testing is done. HBsAg was found to be the most common (0.5%) of all the TTIs with 46 cases being detected out of the tested 7979. 4 (0.05%) cases of RPR positivity, 2 (0.02%) cases of HCV and 1 (0.01%) case of HIV positivity was also noted. There was no case of malaria positivity.

DISCUSSION

Prospective donor deferral rate was 20.2% in our study while the deferral rates ranged from 5.1% to 33% in various studies across the world. [2-4] Many of the reasons for deferral could be avoided by proper education of prospective donors. [1] Replacement/family donors were 74.3% when compared to 47.8% to 90.9% in various parts of North India. [1-6]. Replacement/family donors increase chances of TTI and unethical practices. [6-8]. Measures to increase voluntary blood donation should be encouraged.

First time donors were 25.7% in the present study while it ranged from 10% to 26% [9, 10]. Blood banks must motivate all first time donors to become regular donors.

A study by Unnikrishnan et al also found replacement donors and males to be the majority of the donor population. HBsAg turned out to be the commonest among the seropositivity [6]

Ugwa et al in a similar cross- sectional study found a striking predominance of Family replacement donors (FRD) followed by paid donors (PD). After proper counselling, majority of FRD and PDs were willing to become voluntary donors in the future. They also noted a male predominant donor population. [3]

Kaur G et al studied the TTI risk among both voluntary and replacement donors and concluded voluntary donors are always a better option for collecting safe blood. [4]

Singh et al concluded that the prevalence of TTI among voluntary donors was very low and the replacement donors showed a higher prevalence of of HBV, HCV, and syphilis. [15]

The study by Halder et al, in contrary while studying 5383 blood donors over a period of 4 years found voluntary donors to be the majority while they also had male predominance. Seropositivity was for Hepatitis B which is similar to the present study. [2]

CONCLUSIONS

Voluntary donations comprised of a mere 8.5% of the total donations. Efforts have to be made on improving the numbers and converting the majority of donations to voluntary non remunerated ones. This could be possible by measures like motivational lectures, counselling of target population and certification of donations.

Male donors were among the majority when compared to females. Common myths about blood donations and its health benefits need to be educated to the public population.

Donations from family and relatives should be discouraged as far as possible. This is by keeping a buffer stock at every blood bank.

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