

A STUDY ON DEFERRAL CASES OF DONORS IN BLOOD BANK IN A TERTIARY CARE CENTRE**Dr. Tirumala Kanakadurga Sripathi*¹ and Dr. R. Govindarajan²**¹Department of Pathology 1st Year Postgraduate in Pathology.²Department of Pathology Professor of Pathology, Blood Bank, Sbmch.***Corresponding Author: Dr. Tirumala Kanakadurga Sripathi**

Department of Pathology 1st Year Postgraduate in Pathology.

Article Received on 13/09/2017

Article Revised on 04/10/2017

Article Accepted on 25/10/2017

ABSTRACT

For Blood safety donor selection is necessary in addition to the screenings of blood bags for infectious diseases. Deferrals lead to loss of precious blood/ components available for transfusion. To prevent this, we should be having knowledge of causes of deferral and their frequency. In this study, causes of donor deferral were evaluated retrospectively from June 2014 to February 2017 in the blood bank of Sree Balaji Medical College & Hospital Chennai. Analysis of the deferrals showed that temporary deferral was more common than permanent deferral. Most common cause in permanent deferral was HBsAg positivity. Causes among temporary deferral were anemia (Hb<12.5 gm%), increased BP in last 3 months, jaundice, alcohol intake in last 3days, weight <45 kg, age <18 yrs, patients on antibiotic, previous donation in last 3 month, typhoid in last 1year, Dog bite etc.

KEYWORDS: In present medical and surgical practice, a blood transfusion can be a vital.**INTRODUCTION**

In present medical and surgical practice, a blood transfusion can be a vital, life-saving procedure. But it requires an adequate supply of safe blood from a healthy donor. For this, donor selection is necessary in addition to the screenings of blood bags for infectious diseases. However deferrals lead to loss of precious blood/components available for transfusion. For preventing this we should be having knowledge of causes of deferral and their frequency.

The National AIDS Control Organization's (NACO) statistics show that the annual rate of blood donation in India is about 7.4 million units, against the requirement of 10 million units ^[1]. According to World Health Organization (WHO) figures, over 81 million units of blood are collected annually worldwide but only 39% are collected in developing countries which have 82% of the world's population. A blood bank plays an important role in ensuring the supply of safe blood as and when required. While it is important to ensure that there is an adequate supply of blood, it is also essential that the blood collection process does not harm either the donor or the recipient.

This is achieved by having donor deferral criteria and stringent screening of collected blood for possible Transfusion Transmissible Infections (TTIs). Deferrals are divided into permanent and temporary. The aim of our study is to know the profile of the blood donors and

causes of the permanent and temporary deferral and their frequency.

MATERIALS AND METHODS

This retrospective study included all the donors reporting for blood donation in the blood bank of Sree Balaji Medical College and Hospital, Chennai from June 2014 to February 2017. The donors were evaluated on the basis of clinical history, physical examination, Hb estimation, blood pressure, and temperature. NACO guidelines were used for deferral of blood donors. Data was collected from the records maintained by the blood bank. Hemoglobin was measured by automated 3-part hematology analyzer.

Blood samples of these donors were screened for HBsAg by Microscreen HBsAg ELISA Test kit and anti HCV by SD HCV ELISA, anti-HIV by SD HIV1/2 ELISA 3.0 the 3rd generation Anti HIV1/2 ELISA test, Malaria by SD Malaria Ag Pf and syphilis by CARBOGEN, immunochromatographic assay for the qualitative detection of antibodies of all isotypes (IgG, IgM, IgA) against Treponema pallidum antigen.

RESULT

Out of 800 people who had come for blood donation, 750 were males (93.75%) and 50 were females (6.25%), (Table 1). In 800 donors 80 (10%) deferred, out of which 70 (8.75%) were temporary and 10 (1.25%) were

permanent (Table 2). Overall males (750; 93.75%) were deferred more than the females (50; 6.25%) but males (77; 9.63%) were found to have higher deferral rate among the male donors than females (3; 0.38%), (Table.3).

Analysis of the deferrals showed that the temporary deferral was more common than permanent deferral.

Gender	No.of Registrations	No.of Deferrals	% Deferrals of Total Registration
Male	750	77	10.26%
Female	50	3	6%
Total	800	80	10%

Most common cause among temporary deferral was anemia (Hb <12.5%), followed by increased BP. Most common cause in permanent deferral was HBsAg positivity followed by age >60 yrs.

causes	Number	%Temporarydeferrals	% Total deferrals
Anemia, Hb<12.5%	27	38.57%	33.75%
Malaria in last3month	1	1.43%	1.25%
Weight <45 kg	4	5.71%	5%
Jaundice last 1year	3	4.29%	3.75%
Alcohol in last 72hrs	2	2.86%	2.50%
On antibiotic/aspirin for last 3days	1	1.43%	1.25%
Previousdonation in last 3months	2	2.86%	2.50%
Hypertension	7	10%	8.75%
Typhoid in last 1year	1	1.43%	1.25%
Dentalextraction/surgery in last 6 month	5	7.14%	6.25%
Diabetes oninsulin	1	1.43%	1.25%
Anxiety	1	1.43%	1.25%
Obesity	2	2.86%	2.50%
Dog or catbite/rabiesvaccination in last1 year	7	10%	8.75%
Undiagnosedheadache	1	1.43%	1.25%
Tattoo /ear piercing in last 1year	5	7.14%	6.25%

Causes	Number	% Permanent deferrals	% Total deferrals
HBV positive	1	10%	1.25%
Age >60 years	2	20%	2.50%
HCV positive	0	0%	0%
Chronic obstructive lung disease	2	20%	2.50%
HIV-1,2 positive	1	10%	1.25%
Heart disease	1	10%	1.25%
Asthma	2	20%	2.50%
Epilepsy	1	10%	1.25%
leukemia/lymphoma/multiple myeloma	0	0%	0%
patient who received chemotherapy	0	0%	0%

The other causes of temporary deferral included low body weight, upper respiratory infection, syphilis, jaundice and others which are easily curable. A proper track for follow up of temporarily deferred donors regarding their management should be made in the blood

DISCUSSION

Donor selection has vital importance in blood banking and transfusion medicine. The preamble of our study was to device a protocol which could prevent the loss of whole blood/component and be safe for the donors and recipients.

Most of the donors were males (93.75%); women accounted for only (6.25%) of the donors. Present study showed that female donors were deferred more frequently than male donors which might be due to wide prevalence of anemia in female donors.

The most common cause among temporary deferral was anemia (38.57%), which showed low hemoglobin as the most common cause, in 12.5% of the temporary deferral. In such cases, treatment of anemia with follow up, should be undertaken for benefit of patients and proper utilization of potential donors for the public alike.

bankso that these donors can be recruited back in donors' pool.

In our study 12.50% of donors were deferred for permanent reasons. This high frequency was due to the

inclusion of transfusion transmissible infection in our study especially Hepatitis B infection (HBV).

The method used for Hepatitis B testing as mentioned in material and method detect HBsAg positivity, indicates that either the donor had a subclinical disease/acute or chronic viral infection/false positive cases. So for the benefit of the patients these donors were deferred permanently.

This is very important finding which should be of great concern as Hepatitis B infection is increasing more among the local population and knowledge of routes of transmission of TTI can decrease the seroprevalence of Hepatitis B infection, further this infection can be controlled by vaccination which should be encouraged. Public awareness programs relating to routes of transmission for these infections should be encouraged.

CONCLUSION

The present study showed that although donor deferral rates were very much similar in different populations, the reasons for deferral differ, reflecting difference in socioeconomic status and environment. However, some studies showed different deferral rate which could be due to different donor selection criteria.

Analysis of deferral patterns may help medical personnel and doctors to be more focused in donor screening especially of those who are having higher frequency e.g., Anemia, BP and Hepatitis B infection. Temporary deferred donors require proper follow up and management so as not to lead to a diminished supply of future donors. Government establishment need proper attention to control BP.

Hepatitis B infection can be prevented by educating people regarding the importance of Hepatitis B vaccination and routes of transmission. Finally, the approach to improve safety of blood and blood products and to decrease loss of precious blood/ component must include four steps: (1) detail history based on NACO/WHO guidelines, (2) physical examination, (3) laboratory tests including ELISA for anti HIV, anti HCV and HBsAg and other test for Bp and syphilis and (4) public awareness programmes.

So to conclude, it is important to determine the rate and causes of blood donor deferral for the safety of blood/component transfusion and also to guide the recruitment efforts to prevent loss of precious blood/components at local, national and international levels.

REFERENCES

1. Department of AIDS Control Ministry of Health and Family Welfare Government of India Annual report, 2008-2009: 27.
2. Baxi A Misconceptions over blood donation causing shortage in India, 2008.
3. Newman B Blood donor suitability and allogeneic whole blood donation. *Transfus Med Rev*, 2001; 15: 234-244.
4. Bahadur S, Jain S, Goel RK, Pahuja S, Jain M Analysis of blood donor deferral characteristics in Delhi, India. *Southeast Asian J Trop Med Public Health*, 2009; 40: 1087-1091.
5. Chaudhary RK, Gupta D, Gupta RK Analysis of donor-deferral pattern in a voluntary blood donor population. *Transfus Med*, 1995; 5: 209-212.
6. Zou S, Musavi F, Notari EP, Rios JA, Trouern-Trend J, et al. Donor deferral and resulting donor loss at the American Red Cross Blood Services, 2001 through 2006. *Transfusion*, 2008; 48: 2531-2539.
7. Custer B, Johnson ES, Sullivan SD, Hazlet TK, Ramsey SD, et al. Quantifying losses to the donated blood supply due to donor deferral and miscollection. *Transfusion*, 2004; 44: 1417-1426.
8. Lawson-Ayayi S, Salmi LR Epidemiology of blood collection in France. *Eur J Epidemiol*, 1999; 15: 285-292.
9. Arslan O Whole blood donor deferral rate and characteristics of the Turkish population. *Transfus Med*, 2007; 17: 379-383.
10. Lim JC, Tien SL, Ong YW Main causes of pre-donation deferral of prospective blood donors in the Singapore Blood Transfusion Service. *Ann Acad Med Singapore*, 1993; 22: 326-331.
11. Rabeya Y, Rapiaah M, Rosline H, Ahmed SA, Zaidah WA, et al. *Blood*, 2008.