Analysis of adverse reactions among whole blood donors at a tertiary care hospital

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INTRODUCTION

- Blood donation is a very low risk procedure and donors usually tolerate blood donations very well.
- Adverse reaction can occur any time during or after donation, which are usually mild and does not pose much effects on the health of the individual, but may dissuade or deter donors from future donations.

AIMS AND OBJECTIVES

The aim of this study was to describe the incidence, severity, grade and pattern of adverse reactions among whole blood donors at a tertiary care hospital blood centre.

MATERIALS AND METHODS

This was a retrospective observational study conducted during August 2023 – July 2024 at the Department of IH & BT, Tirunelveli Medical College and Hospital.

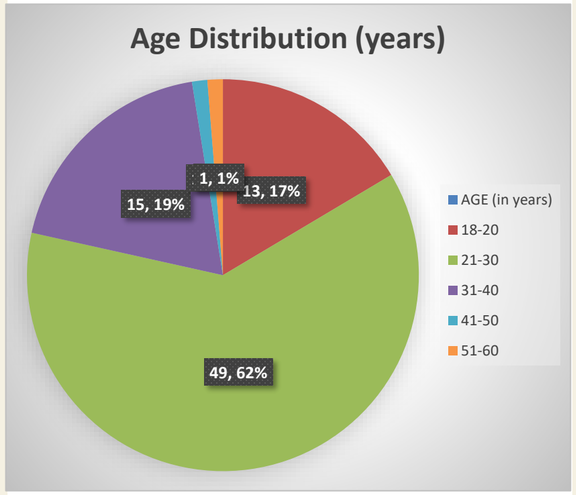
- Demographic details of donors, previous donation history and grade of adverse reaction were retrieved from donor adverse reaction register. Data was entered and analysed in Microsoft excel. Descriptive data were given in summary statistics.

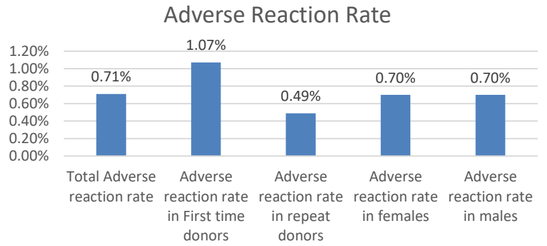
Severity Grade	General factors to consider in assigning severity Donor Adverse Event (DAE) Severity Tool	(DAE) Examples
Grade 1	• Resolved with no or minimal intervention *AND* • Short duration ≤ 2 weeks *AND* • No limitation on Activities of Daily Living (ADL) *AND* • No Outside Medical Care (OMC)	Arterial puncture, pressure bandage applied, resolved without intervention or sequelae Vasovagal event that resolves with comfort care and/or oral hydration Citrate reaction resolved with oral calcium or reduction in infusion rate
Grade 2	• OMC, no hospitalization *OR* • Duration >2 weeks- ≤ 6 months *OR* • Limitations on ADL for ≤2 weeks	Superficial thrombophlebitis resolved with oral antibiotics, no sequelae Vasovagal event that requires transport to ER for IV hydration Lacerations requiring sutures
Grade 3	• Hospitalization *OR* • Duration >6 months *OR* • Limitations on ADL >2 weeks *OR* • Require surgery of any kind	Arteriovenous fistula requiring surgical repair Fracture, dental injury, or concussion
Grade 4*	• Immediate medical intervention required to prevent death	LOC with fall and intracranial bleed
Grade 5*	• Death related to DAE	Death

* Grade 4 and Grade 5 are not shown in the Grading Severity of Blood Donor Adverse Events Tool.

RESULTS

- Of the 11180 total donors, 7090 were repeat donors (63.42%) and 10,752 were male donors (96.17%).
- Adverse donor reaction rate was 0.71% (n= 79/11180) with male to female ratio of 25:1.
- 97.47% (n=77/79) were Grade 1 severity of which vasovagal reaction was 89.61 % (n=69/77) and hematoma 10.38% (n=8/77).
- 2.53% (n=2/79) developed Grade 2 severity: vasovagal syncope requiring IV hydration. There was no Grade 3/4/5 reaction during this study period.
- Majority of reactions (78.48%, n=62/79) were seen in donors ≤30 years and in first time donors (55.69%, n=44/79).
- Incidence of adverse reaction in First time donors was 1.07% (n=44/4090) and in female donors was 0.70% (n=3/428).





DISCUSSION

- Analysis of adverse donor reactions helps in identifying the donors at risk and in adopting better strategies like pre donation counselling, reassurance & post donation monitoring until adequate hemodynamic recovery that ensures prevention of adverse reaction.

REFERENCES

1. Standard for Surveillance of Complications Related to Blood Donation Working Group on Donor Vigilance of the International Society of Blood Transfusion Working Party on Haemovigilance in collaboration with The International Haemovigilance Network The AABB Donor Haemovigilance Working Group December 11, 2014
2. Severity Grading Tool for Blood Donor Adverse Events A User Brochure Developed by: AABB Donor Hemovigilance Working Group