



TO ASSESS THE LEVEL OF KNOWLEDGE, ATTITUDE, PRACTICES RELATED TO HAEMOVIGILANCE AMONG HEALTHCARE PROFESSIONALS AT A TERTIARY CARE CENTER

Transfusion Medicine

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ABSTRACT

Background – India launched haemovigilance programme in year 2012. Main aim of haemovigilance programme is to identify, analyze and learn complication arise during blood donation, storage, transfusion and post transfusion of blood and blood related products. This study is conducted in tertiary care center to understand level of knowledge, attitude, and practices related to haemovigilance among healthcare professionals in order to safe blood donation and reduce transfusion related adverse effects. **Method**- This is an observational cross sectional pre-validated questionnaire-based study conducted in tertiary care center among healthcare professionals dealing with blood products, transfusion and transfusion related adverse reaction over a period of 3 months. The questionnaires were filled by healthcare professions either online or offline mode. Obtained data through this questionnaire were thereby analyzed. **Result**- Total 250 healthcare professionals dealing with blood products, transfusion and transfusion related adverse reaction included in the study. In our study it was observed that though healthcare professionals had good knowledge of blood donation, transfusion but they have poor knowledge about haemovigilance programme. 97% witnessed transfusion reaction and willing to report but they lack training for reporting. Lack of knowledge (87%) is major cause for underreporting. **Conclusion**- Though healthcare professionals noticed transfusion reaction during practice, due to lack of haemovigilance related knowledge most of the reactions were unrecorded. Our study not only focusing causes of underreporting but also suggesting ways to ease reporting. We even recommend Haemovigilance should be integrated in undergraduate and postgraduate medical courses as well as in nursing courses.

KEYWORDS

haemovigilance, healthcare professionals, transfusion, adverse effects

INTRODUCTION

In history first time blood transfusion was recorded in 1492 after death of Pope Innocent VII during blood transfusion and three young donors. In 1869, sodium phosphate was recommended by Braxton Hicks as a nontoxic anticoagulant. While Karl Landsteiner explained serious adverse reaction occur due to incompatible transfusions with the help of his commendable research in ABO blood groups in year 1901. For this outstanding research he won Noble prize. Researches to preserve blood rise during World War II due to increase demand of blood and blood related products. Dr. Charles Drew worked on blood transfusion and preservation of blood during World War II which helped in developing blood bank system. Due to this incredible work Dr. Drew was the first person who got appointed as a director in Red Cross blood bank. Blood preservation formula of Acid – Citrate – Dextrose (ACD) was developed by Loutit and Patrick L. Mollison from Great Britain^[1]. Worldwide in year 2012, around 108 million unit of blood were collected for heterogeneous purposes. In developing countries mostly transfusion given to children below 5 years of age while in developed countries it was for elderly population. Blood is more often used as a supportive care in major trauma cases, transplant, cardiovascular surgeries, anemia, pregnancy and in cancer treatment^[2].

Numerous blood groups developed due to day to day life transfusions. Repeated transfusions, enormous use of blood created new problems. A transfusion reaction is defined as any transfusion-related adverse event that occurs during or after the transfusion of whole blood, blood components, or human-derived plasma products^[3].

Transfusion related adverse event can be common reaction such as mild allergy, non-haemolytic febrile reactions or rare reactions like anaphylaxis reaction, sepsis. Sometimes fatal events like transfusion-associated circulatory overload (TACO), transfusion-related acute lung injury (TRALI). Disease transmission is a long term adverse event seen post transfusion^[4-5]. Transfusion should be stop immediately when one can suspect transfusion related reaction.

Mostly treatment in such cases is supportive e.g. antihistaminic in allergic rash, itching and antipyretic in case of febrile reaction^[6-7].

Haemovigilance (Hv) is defined as “a set of surveillance procedures covering whole transfusion chain from the collection of blood and its components to the follow up of its recipients, intended to collect and access information on unexpected or undesirable effects resulting from the therapeutic use of labile blood products, and to prevent their occurrence and recurrence^[8]. Across the world Hv considered as a integral part of blood safety^[9].”

In year 2012, Indian Pharmacopoeia Commission (IPC) of India with partnership National Institute of Biologicals (NIB) launched Haemovigilance Programme of India (HvPI) which includes Signal Review Panel, Core Training Panel and panel for Quality Review^[10-12]. The main purpose of this programme was to gather all adverse reaction, events related to transfusion and provide recommendation to improve patient related safety and care. It also gather data regarding adverse events (AEs), quality of products (QoP) and transfusion errors^[13,14]. The subsequent objective of HvPI is to be a part of the International Haemovigilance Network (IHN) and share data at international platform for best practices and to evaluate all Hv data^[15].

Methodology

Site Of Study-

This study was conducted at Grant Government Medical College & Sir JJ Group of Hospital, Mumbai from February 2023 to April 2023. Study was started after taking approval from the Institutional Ethics Committee of Grant Government Medical College (IEC/Pharm/RP/44/Feb/2023)

Study design-

This is an observational, pre-validated questionnaire based cross-sectional study. This study planned to assess the knowledge, attitude and practices (KAP) of healthcare professionals (doctors,

postgraduate residents, nurses, lab technician, pharmacist) toward Haemovigilance, to rule out the causes for unrecorded of transfusion reactions and also the ways to ameliorate reporting.

Study Duration-

3 months

Sample size-

250 healthcare professionals

Selection Criteria-

The study population was taken from clinical, nonclinical post graduate residents, nurses, doctors, lab technician and pharmacist who are dealing with blood collection, storage, transfusion and transfusion related reaction reporting from a tertiary care centre. They were provided Haemovigilance related KAP based pre-validated questionnaire either online google sheet questionnaire or hard copy of questionnaire and asked them fill it.

Inclusion And Exclusion Criteria-

All healthcare professionals belonging to both gender and willing to participate in study and who are dealing with blood or blood related products and their transfusion were included in the study

Statistical analysis- Data tabulated and percentages are calculated.

RESULTS

Participants involved in study were classify according to age, gender, educational qualification and profession in Table no.1

Table 1: Socio-demographic parameters of the study participants

1.A) Age

Age in years	No. of participants
20-30	200
30-40	25
More than 40	25

1.B) Gender

Gender	No. of participants
Male	140
Female	110

1.C) Educational Qualification

Educational Qualification	No. of participants
Diploma	5
Graduation	220
Postgraduation	25

1.D) Occupation

Doctors	215
Nurses	25
Pharmacist	5
Lab.	5

Table 2: Knowledge of Haemovigilance among healthcare professionals

Sr.No	Knowledge related questions	YES(%)	No(%)
1)	What is Haemovigilance?	68	32
2)	At what temperature blood can be stored?	80	20
3)	What are the precautions taken before blood transfusion?	100	0
4)	What happen with the blood which is not used for any surgery but transported out of the blood bank?	90	10
5)	In which colour bag we dispose used blood related product?	98	2
6)	Whom we should report adverse reaction related with blood transfusion?	60	40
7)	When haemovigilance program launched in India?	78	22
8)	Which is national level controlling body for blood transfusion related events?	46	54
9)	What is the mode of reporting ADR transfusion reaction?	30	70

10)	Do you have a local government level blood transfusion service?	58	42
11)	Have you heard about a hospital blood transfusion committee?	55	45
12)	Do you know that blood transfusion reactions can be reported?	82	18
13)	Have you heard about Haemovigilance program?	64	36
14)	Have you heard about Hemovigil software?	40	60
15)	What is the fullform of TRRF?	70	30

Table 3- Attitude regarding Haemovigilance among healthcare professionals

Sr. No	Attitude related questions	Yes (%)	No (%)
1)	Are you willing for reporting?	80	20
2)	Have you received any training about how to report transfusion related adverse reaction?	24	76
3)	Have you come across any literature about Haemovigilance?	40	60
4)	Every institute should enroll under Haemovigilance?	90	10
5)	Do you think One Haemovigilance Centre is enough for a city?	28	72
6)	Haemovigilance should include in all academic curriculum?	97	3
7)	Do you think any benefit of Reporting of transfusion reaction to the haemovigilance centre?	100	0
8)	cause(s) of the transfusion reactions investigated further?	86	14
9)	Transfusion related adverse effect reporting is moral duty of healthcare professional?	92	8

Table 4-Among healthcare professionals practices related questioner

Sr. No	Practices related question	Yes (%)	No(%)
1)	Have you transfused/cross-matched a patient in the last 6 months	68	32
2)	Have you attended any seminars/workshop/CME about Haemovigilance?	35	65
3)	Are you 100% sure that your blood will be utilized?	78	22
4)	Have you reported any transfusion reactions?	5	95
5)	Have you reported any transfusion reactions using Haemovigil software?	0	100
6)	Have you ever witnessed any transfusion reactions till date?	97	3
7)	Have you reported any transfusion reaction in haemovigilance?	0	100
8)	Have you reported any transfusion reaction using TRRF ?	0	100

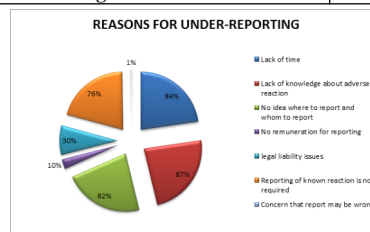


Figure 1: Factors discouraging transfusion related reactions

Figure 1 shows factors discouraging transfusion related reactions reporting among healthcare professionals include Lack of knowledge (87%), followed by lack of time (84%), No idea where to report and whom to report (82%), Reporting of known reaction is not required (76%), Legal liability issues (30%), No remuneration for reporting (10%) and Concern that report may be wrong (1%).

DISCUSSION

In 1994, haemovigilance was developed by French blood agency, currently its implemented in most of the countries^[13]. Numerous characteristics of human behaviour can be investigated with the help of Knowledge, attitude, and practice (KAP) studies. In this study observed Knowledge, attitude, and practice of haemovigilance among healthcare professionals. Closely resemble study carried out in Nagpur where response rate was 75%^[16]. Similar study conducted in Nashik with 93% response rate^[17] while our study have highest response rate around 100%. This proved curiosity about haemovigilance among healthcare professionals.

It was observed that in our study most healthcare professional were belong to age 20-30 and male participants were more as compared to females. This result corresponds to study conducted in Hyderabad^[18]. It was noticed that, in our study most of the participants completed their graduation. Majority of doctor (245) profession participants enrolled in study. In current study, most of healthcare professional have knowledge regarding blood transfusion, precautions to be taken prior transfusion (100%), biomedical waste in case of transfusion (98%). Though 82% healthcare professions aware about transfusion reaction need to be reported and 64% heard about haemovigilance program while only 40% heard about haemovigilance software. Still only 30% knows mode of reporting transfusion reaction. Most of the participants unaware about existence of national, local as well as hospital level blood transfusion related services. As we received detailed knowledge based information through questions we realized there was deficiency of knowledge which was a principal cause of underreporting transfusion related reactions.

From Table 3 it was concluded that 100% healthcare professionals thinks that reporting transfusion reaction is their moral duty, 100% felt reporting transfusion reaction is beneficial, 80% were even willing to report but only 24% undergone training regarding transfusion reaction reporting and only 40% came across haemovigilance related literature. From Table 4 it was observed, around 97% Healthcare professionals witnessed transfusion reaction, but none reported it neither by using haemovigilance software nor with the help of TRRF. Only 35% healthcare professionals attended any seminar/workshop/CME regarding Hv.

This study underlined factors discouraging transfusion related reactions and it was detected that most common factor was lack of knowledge about transfusion reaction (87%) followed by lack of time to Healthcare professionals (84%), which was similar to study conducted by Date^[16], 82% informed they are unaware where and whom to report such reactions (82%), 10% said no remuneration is reason, 1% had fear that reporting may be wrong.

Figure 2 point towards ways to improve transfusion reactions were most commonly to appoint special dedicated staff for reporting followed by conducting training related reporting. Only 0.8% healthcare professional believed making reporting mandatory will increase transfusion reaction reporting.

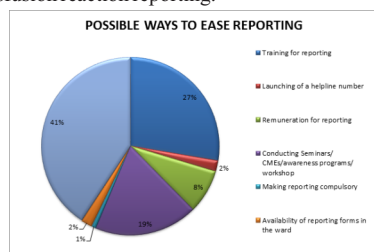


Figure 2 : Ways to ease reporting of transfusion reactions

CONCLUSION

Most of the Healthcare professional's enthusiastic with respect to transfusion reaction reporting but they have inadequate knowledge about haemovigilance programme. This study concluded that there should be accelerate awareness regarding haemovigilance among healthcare professionals and regular conduction of seminar, workshop for transfusion related reaction reporting and haemovigilance should be integrated in undergraduate and postgraduate medical courses as well as in nursing courses. There should be separate dedicated staff must be enroll for haemovigilance related work. Limitation of study is it is single centre study and it was conducted at a tertiary care hospital at metro city.

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