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Original Research Paper

Pathology

ANALYSIS OF BLOOD TRANSFUSION REACTION IN OBSTETRIC PATIENTS AT JHALAWAR MEDICAL COLLEGE, RAJASTHAN

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ABSTRACT

Introduction- Blood transfusion plays a major role in prenatal care in anemic mothers and during obstetric hemorrhages which are a major cause of maternal mortality.[1] **Aim & Objective-** Analysis of frequency, distribution and types of blood transfusion reaction in obstetric patients at JMC. **Materials & Methods-** After obtaining approval, those obstetric patients meeting the inclusion criteria will be enrolled in the above study. All reported transfusion reaction was evaluated. Blood samples for re-cross matching, Coombs' test, and urine samples for methemoglobinuria were obtained from each patient who experienced a transfusion reaction. **Inclusion criteria:** All pregnant ladies who underwent blood transfusions during six months period (July 22 - December 22) at JMC. **Result-** The proportion of patients receiving blood transfusion out of the total anaemic obstetric population received at JMC is as follows:-July : 263(26.7%), August : 252(24.6%), September : 241(26.8%), October: 225(25.5%), November : 209(26.5%), December : 184(25.4%). So total blood transfused is 1374(25.9%). **Out of this 1374 cases 12 blood transfusion reactions were notified i.e. 0.87%.** Classified as below :- Febrile non-hemolytic transfusion reactions : 6(50%), Allergic reactions : 4(33.3%), Acute hemolytic reactions : 0(0%), Miscellaneous (Isolated hypotension etc.) : 2(16.7%), TRALI : 0(0%). No any maternal mortality was observed due to transfusion related reactions. **Conclusion-** Total blood transfused was 1374 i.e. 25.9% of Anemic obstetric patients, in which 12 blood transfusion reactions were notified i.e. 0.87%. Among which the most common transfusion reaction was Febrile non-hemolytic transfusion reactions(50%).Blood transfusion should be considered only when severe anemia and obstetric hemorrhages are major risk to life, because of related blood transfusion reactions.

KEYWORDS : Anemia, Blood transfusion reactions, Obstetric hemorrhages, Pregnancy.

INTRODUCTION

Blood transfusion plays a major role in prenatal care in anaemic mothers. The kind, degree, and stage of pregnancy at which anaemia (Hb < 11g/dl) is identified all affect how the condition is treated during pregnancy. Blood transfusions are used to treat severe anaemia (Hb < 7g/dl) at any gestation in the second half of pregnancy. Another cause of blood transfusion is obstetric haemorrhages which are a major cause of maternal mortality.[1] Transfusion should be done only when benefits outweigh the risk.[4] Mostly obstetric patients can be predicted if they would have severe PPH on the basis of antenatal risk factors while all other pregnant ladies should be closely monitored for risk factors throughout labour and delivery.[3] Studies have shown that severe iron deficiency anemia during pregnancy increases the likelihood of preterm delivery, low birth weight, and possibly poor neonatal health.[8] Most persons having transfusion reactions fully recover. Haemolytic, allergic, non-haemolytic or febrile responses are possible with transfusion reactions. For easy understanding some minor negative reactions are: Headache, Fever, Rashes/Itching & etc. Medication can be used to treat these adverse effects, and they usually subside within a day. One typical type of non-immune response is fluid overload. The more severe issues are : having trouble breathing, severe headache, sudden blood pressure falls, few of which might be considered life-threatening.

AIMS & OBJECTIVES

- To determine the frequency and distribution of blood transfusion reactions during pregnancy at JMC.
- To determine the incidence of various types of blood transfusion reactions during pregnancy at JMC.

DURATION

This study is conducted for a period of 6 months from July 2022 to December 2022.

MATERIALS & METHODS

After obtaining approval and clearance, those obstetric patients meeting the inclusion criteria at Jhalawar Medical College, Jhalawar over a period of six months (July'22 to Dec.'22) will be enrolled in the above study.

Haemolytic, allergic, non-haemolytic, and febrile responses were reported as the signs of transfusion reaction. Blood samples for re-cross matching, Coombs' test, and urine samples for methemoglobinuria were obtained from each patient who experienced a transfusion reaction. Patients received symptomatic treatment or further management for the reaction.

Inclusion criteria:

All pregnant ladies who underwent blood transfusions during this six month period (July'22 to Dec.'22) at Jhalawar Medical College & attached hospitals.

Exclusion criteria:

All pregnant ladies who visited other than the study's time duration or underwent blood transfusion at hospital not under Jhalawar Medical College.

RESULTS

The proportion of patients receiving blood transfusion out of the total anaemic obstetric population (Hb < 11g/dl) received in OPD/IPD at Jhalawar Medical College is as follows :-

July	:	263(26.7%)
August	:	252(24.6%)
September	:	241(26.8%)
October	:	225(25.5%)
November	:	209(26.5%)
December	:	184(25.4%)

So total blood transfused is 1374(25.9%).

Out of this 1374 cases 12 blood transfusion reactions were notified i.e. 0.87%. Classified as below:-

No any maternal mortality was observed due to transfusion related reactions.

Febrile non-hemolytic transfusion reactions :	6(50%)
Allergic reactions :	4(33.3%)
Acute hemolytic reactions :	0(0%)
Miscellaneous (Isolated hypotension etc.) :	2(16.7%)
TRALI :	0(0%)

DISCUSSION

The blood transfusion reaction rate of 0.87% seen in the study is at par with the global standards. According to studies done in Europe and South America, the incidence of ATR is 0.2% in Europe and 0.34% in South America.[11,12] Similar studies done in other developing countries like Pakistan and Nigeria showed much higher incidences. Incidence of these studies shown are Nawaz S et al[5] is 20.8%, Ibrahim U N et al[6] is 26.3% and Parveen R et al[7] is 8%.

Our study show incidence of Febrile non-hemolytic transfusion reaction 50% (n=6), Allergic reactions 33.3% (n=4), Acute hemolytic reactions 0%, Miscellaneous (Isolated hypotension etc.) 16.7% (n=2), TRALI 0%. No any maternal mortality was observed due to transfusion related reactions. While in other studies incidence in Nawaz S et al[5] shows Non-hemolytic reactions 4.2% (n=20), Febrile reactions 11.7% (n=55), and Acute hemolytic reactions 4.9% (n=23). Two maternal mortalities were observed due to severe haemolytic reaction. Incidence in Ibrahim U N et al[6] shows Febrile non-hemolytic transfusion reaction 47.7% (n=201), Allergic reactions 24.5% (n=103), Acute hemolytic reactions 11.6%(n=49), Miscellaneous (Isolated hypotension etc.) 4.9% (n=21), Anaphylactic reaction 2.1%(n=9).

CONCLUSION & SUMMARY

Total blood transfused was 1374 i.e. 25.9% of Anemic obstetric patients, in which 12 blood transfusion reactions were notified i.e. 0.87% and is at par with the global standards. Among which the most common transfusion reaction was Febrile non-hemolytic transfusion reactions(50%), and other transfusion related reactions were Allergic reactions(33.3%), Miscellaneous (Isolated hypotension etc.)(16.7%).

Blood transfusion is attributed to saving many maternal lives, but should be considered only when severe anaemia and obstetric haemorrhages are major risk to life, because of related blood transfusion reactions. Mostly obstetric patients can be predicted if they would have severe PPH on the basis of antenatal risk factors while all other pregnant ladies should be closely monitored for risk factors throughout labour and delivery.[3] The risk of blood transfusion reaction can be minimised by adhering to proper blood banking techniques such as proper storage, blood grouping and cross matching and monitoring of transportation and transfusion by competent authority. Proper evaluation should be done for every transfusion related reaction, to minimise possibility of similar reactions in future.

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