



BLOOD TRANSFUSION PRACTICES IN OBSTETRICS IN GDMCH

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ABSTRACT

OBJECTIVES: This study was an effort to identify and highlight existing blood transfusion practices in our hospital, including indications of various blood components used and the allergic reaction encountered. Anemia and obstetric hemorrhage remains major cause of maternal mortality worldwide. Blood transfusion can be a life saving intervention. **MATERIALS AND METHODS:** A Prospective observational study was conducted to analyse the various indications for transfusion of blood and blood components in our hospital. **RESULTS:** In this study the most common indication for blood transfusion was anemia (78%) followed by postpartum hemorrhage (7.87%) and antepartum hemorrhage (6.23%). Adverse reactions found in our study was not statistically significant. **CONCLUSION:** This study shows that we need to train the medical fraternity at all levels to learn to identify the indications for transfusion and select appropriate component for management.

KEYWORDS : Blood transfusion, obstetric hemorrhage blood component therapy

INTRODUCTION :

"A plea for the freer use of blood transfusion in obstetrics" was an article by JOHN STALL WORTHY, in BMJ in 1939 [Ref.No1]

Various pregnancy related complications and disorders of labour present as risk factors for extra blood loss during pregnancy and cause severe hemodynamic instability. Along with this, complications due to abortion (spontaneous or induced) and ruptured ectopic show up as condition requiring transfusion in day to day practice. [Ref.No2]

The common causes for the pregnancy associated conditions requiring transfusion are

1. ANEMIA
2. POSTPARTUM HEMORRHAGE
3. ANTEPARTUM HEMORRHAGE
4. ABORTION
5. ECTOPIC PREGNANCY [Ref.No3]

Obstetrician and gynecologist need to be aware of the potential complication of blood transfusion in their practice. Anemia is responsible for 15% of maternal mortality. Early correction avoids the need for transfusion. obstetric hemorrhage is responsible for 7% maternal mortality worldwide.

WHO estimates, over a thousand of all maternal deaths are directly due to obstetric hemorrhage. The obstetric conditions leading to hemorrhage are placenta previa, placental abruption and postpartum hemorrhage [Ref.No4]. Massive hemorrhage typically appears in postpartum. The blood flow to the placenta is about 700 ml/min at term, so bleeding is likely to be rapid, often unexpected and difficult to control. Transfusion of blood and its components is potentially lifesaving procedure. Other causes include- placental problems (placenta accreta, retained placenta), uterine overdistension (multiple gestation, polyhydramnios), pre-eclampsia, DIC, operative vaginal delivery [Ref.No5]. Blood transfusion can be a life saving intervention.

This study was an effort to identify the number of patients requiring transfusion, indications for transfusion, various blood components used and allergic reaction encountered.

MATERIALS AND METHODS :

TYPE OF STUDY: prospective observational study

PLACE OF STUDY: Department of OBG, GDMCH

STUDY PERIOD: April 2020 to MAY 2021

STUDY POPULATION: All antenatal, postnatal and post operative in patients who were transfused with blood and blood products

STUDY METHOD: The patient's medical condition, state of hemorrhage and blood investigations were taken into consideration before transfusion. The blood products involved in this study were packed red blood cells (PRBC), fresh frozen plasma (FFP), cryoprecipitate and platelet. The following items were evaluated

1. Underlying disorders which required transfusion,
2. Types of blood products used
3. Blood transfusion reaction.

The data collected were analysed and tabulated

RESULTS :

During the study period, total no of patients transfused were 1266.

TABLE 1 DEMOGRAPHIC FACTORS:

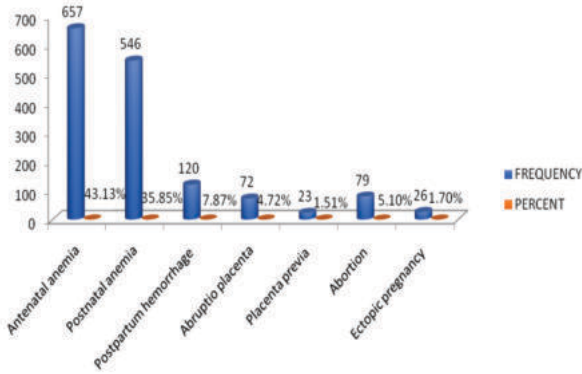
FACTORS	PERCENTAGE
A) Age(years)	
<20	25%
21 -30	60%
31- 40	10%
>40	5%

B) Parity	PERCENTAGE
Primigravida	42%
Multigravida	58%

C) Mode of delivery	PERCENTAGE
Vaginal	48%
Cesarean	42%

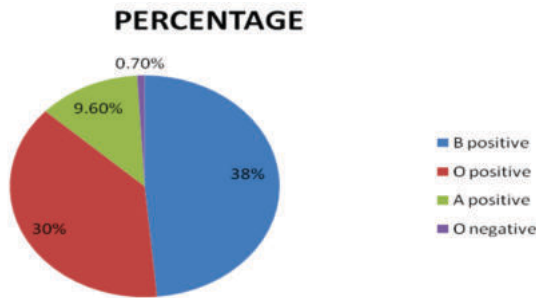
TABLE-2: BLOOD TRANSFUSION AND BLOOD PRODUCTS

IN OBSTETRIC CASES (N=1523)



During this period, 11 patient received whole blood, 1043 patients received PRBC , 339 patients received FFP , 49 patients received cryoprecipitate and 92 patients received platelets.

TABLE-3 : BLOOD GROUP



Most common Blood group was B+ (38.0%) followed by O+ve (30.0%) , A+ve (9.6%) and O-ve (0.7%).

TABLE -4 GRADES OF ANEMIA ON ADMISSION

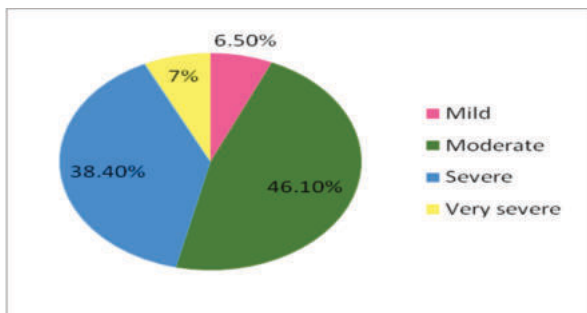


TABLE 5: BLOOD PRODUCTS TRANSFUSED (N=1523)

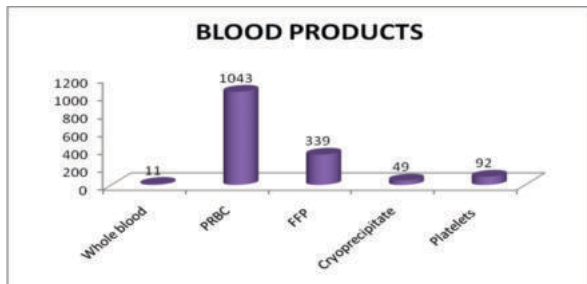


TABLE 6 .BLOOD TRANSFUSION REACTION

No adverse reaction was found in majority of patients , very few patients had reactions such as breathlessness (most common) followed by rashes , itching , vomiting within few

hours of transfusion . one patient had hematuria during our study . Incidence of reaction was higher in PRBC transfusion

REACTIONS ENCOUNTERED	NUMBER(20)
Breathlessness	10
Rashes , Itching	7
Vomiting	2
Hematuria	1

DISCUSSION:

In the developing countries , obstetric complications are leading cause for transfusion Obstetric haemorrhage is the common cause of death, causing one fourth of Maternal death yearly. Massive and life-threatening Obstetric haemorrhage occurs in 3 to 5% and 0.1% of deliveries respectively and blood products transfusion is required in 0.3 to 1% [Ref.No.6]

Anaemia during pregnancy is the significant cause of maternal mortality and morbidity .The decision for transfusion was done in the study when Hb less than 7 g percent and there were less than four weeks for delivery or in labour. Anaemia in pregnancy is defined as first trimester Hb less than 7 g/dl ,second or third trimester Hb less than 10.5 g per/dl and postpartum Hb less than 10 g/dl in line with BCSH(British Committee for standards in hematology) guidance.For normocytic or microcytic Anemia oral iron should be considered as the first step. Further test should be undertaken if there is no demonstrable rise in Hb after 4 weeks .

compliance has been checked. Pregnant women should be offered screening for anaemia at booking and at 28 weeks.Multiparous women should have an additional full blood count done at 20 to 24 weeks. Parenteral iron is indicated when Oral iron is not tolerated or absorbed or patient compliance is in doubt .Women at high risk of haemorrhage should be advised to deliver in hospital. Active management of third stage of labour is recommended to minimise blood transfusion [Ref.No.7]

The different components of the blood play different functions. There is a need to realise the role of blood component therapy .Each bag of PRBC has 150 to 200 ML RBCs and 75 ML plasma with the hematocrit of around 60%. They are used when we have insufficient RBCs in circulation or decrease in oxygen carrying capacity of the blood. vachhani et al in their study discouraged practice of single unit transfusion citing it as avoidable in majority of the cases.The risks involved in the blood transfusion can cause more damage than benefit to the patient [Ref.No.8]. Platelets or fresh frozen plasma (FFP) is to be given when required.FFP is used in correction of micro vascular bleeding, multiple coagulation factor deficiencies.Platelets are used when the platelet count falls below to 20,000 per millimetre cube. One unit of platelets increases the platelet count by 5000 to 7000 per litre. There is no role of prophylactic platelet transfusion; one needs to investigate and treat the cause [Ref.No.9]

Transmission is a life-saving procedure ,but approximately 1% of all transfusions can cause an immediate and delayed adverse reaction, despite the measures taken to reduce risk. Transmitted infections, haemolytic reactions, transfusion associated acute lung injury (TRALI), hypercalcaemia, hypomagnesemia , hyperkalaemia can occur. Problems of massive transfusions such as hypothermia, metabolic acidosis and abnormalities of coagulation can occur [Ref.No.10]

During pregnancy changes in the coagulation and the fibrinolytic system in form of enhancement and inhibition respectively occur.Large volume blood loss causes consumptive loss of coagulation factors. It causes more bleeding and starts a vicious cycle ending up with DIC. These obstetric haemorrhage could be massive and may require replacement of one entire blood volume within 24 hours or replacement of 50% of total blood volume (TIBV) within three

In our study ,41 had received three units of PRBCs,18 had received four units of the PRBCs.The setting of massive transfusion protocols describes the process of management of blood transfusion requirements in major bleeding episodes, assisting the interactions of the treating clinicians and the blood Bank and ensuring judicious use of blood and blood components.

CONCLUSION:

Blood transfusion is an essential component of obstetric care and at times lifesaving. Anemia should be corrected early by adequate antenatal screening. It avoids need for transfusion and reduces maternal mortality.In the situation of obstetric haemorrhage early resuscitation is done with crystalloids and oxygenation . All steps are taken to control bleeding and reduce the transfusion requirement.

To avoid dilutional coagulopathy, concurrent replacement with coagulation factors and platelet may be necessary. Whole blood may be preferred in acute massive haemorrhage especially when the components are not readily available.A preplanned multidisciplinary protocol yields the best results in the management. Therefore we still need to go a long way in order to train the medical fraternity at all levels to learn to identify the valid indications for transfusion and select appropriate component for management.

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