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Original Research Article

BLOOD TRANSFUSION PRACTICES IN OBSTETRICS AND GYNAECOLOGY AT TERTIARY CARE CENTRE: A RETROSPECTIVE STUDY.

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Abstract

Background: This study was undertaken to ascertain the total patients receiving a transfusion, indications for transfusion, various blood components used, the timing of transfusion, and the presence of any risk factors in the patients transfused.

Methods: Transfusion request forms of 2998 patients admitted to the Department of Gynaecology and Obstetrics in the zanana Hospital, SMS Medical College and attached group of hospitals Jaipur from May 2020 to July 2020were retrospectively reviewed for the types and volume of blood component transfused. Indication for each blood component transfusion was noted. Patients who had MOH were further analyzed to estimate the ratio of components transfused.

Results: We have experienced 898 obstetric patients who underwent blood component transfusion during the study period. Out of these, 440 (49%) and 458 (51%) were primigravida and multigravida respectively. The mean age of patients who received transfusion was 27 years. The maximum number of patients was in the age group of 21–32 years

Conclusion: Anemia during pregnancy is a significant cause of maternal mortality and morbidity. The decision for transfusion was done in this study when the Hb<7 gm%, and there were <4 weeks for delivery or in labor

Keywords: Hb, Anemia, Pregnancy.

Introduction:

People have always been fascinated by blood: Ancient Egyptians bathed in it, aristocrats drank it, authors and playwrights used it as themes, and modern humanity transfuses it. The road to an efficient, safe, and uncomplicated transfusion technique has been rather difficult, but great progress has been made[(1)]. Anemia in pregnancy is a hemoglobin concentration of less than11 g/dl in the first and third trimesters and 10.5 g/dl in the second trimester. The diagnosis and effective treatment of chronic anemia in pregnancy is an important way of reducing the need for future transfusions. The decision to transfuse blood should not be based on hemoglobin levels alone, but also on the patient's clinical need. Blood loss during normal vaginal delivery or Caesarean section does not normally necessitate transfusion provided that the maternal hemoglobin is above 10.0–11.0 g/dl before delivery. Obstetric bleeding may be unpredictable and massive. Every obstetric unit should have a current protocol for major obstetric hemorrhage and all staff should be trained to follow it. If disseminated intravascular coagulation is suspected, do not delay treatment while waiting for the results of coagulation tests[(4)].

In this review, we have focused on red cell transfusion because it is the most common blood component used in obstetrics and gynecology with a critical examination of current trends in blood transfusion practice, indications for use of red cells, potential complications, and strategies for the reduction of unnecessary transfusion[(1,3).]

The decision to transfuse blood should not be based on hemoglobin levels alone, but also on the patient's clinical need.

The following factors must be taken into account:

- Stage of pregnancy.
- Evidence of cardiac failure

■ Presence of infection: e.g. pneumonia, malaria

■ Obstetric history

■ Anticipated delivery:

— Vaginal

— Caesarean section

■ Hemoglobin level. [4]

Over the years, there has been a tendency to reduce the use of blood transfusion in obstetrics. And the same has been supported by the research papers in this field. This decline in transfusion has occurred despite the rise inoperative the delivery rate at various centers. Despite the decrease ingrates of blood transfusion the obstetric outcome has improved[7].The common causes for pregnancy-associated cases requiring transfusion are:

1. Postpartum hemorrhage

2. Anemia

3. Preeclampsia

4. 1st Trimester bleeding

5. Abruption placenta

6. Misc[8]

This study was undertaken to ascertain the total patients receiving a transfusion, indications for transfusion, various blood components used, the timing of transfusion, and the presence of any risk factors in the patients transfused. [9].

Materials and Methods

Transfusion request forms of 2998 patients admitted to the Department of Gynaecology and Obstetrics in the zanana Hospital, SMS Medical college and attached group of hospitals Jaipur from May 2020 to July 2020were retrospectively reviewed for the types and volume of blood component transfused. Indication for each blood component transfusion was noted. Patients who had MOH were further analyzed to estimate the ratio of components transfused

The following parameters were reviewed:

1. Type and number of blood component transfused

2. Underlying obstetric risk factor in each case

3. Indication for each blood component transfusion noted

4. Patients who had MOH were further analyzed to estimate the ratio of components transfused.

Analysis

A Chi-square test (for categorical variables) was done to assess frequency distribution. Logistic regression analysis was done using SPSS version 16 (SpssInc, Chicago, II, USA). $P < 0.05$ was considered statistical significance.

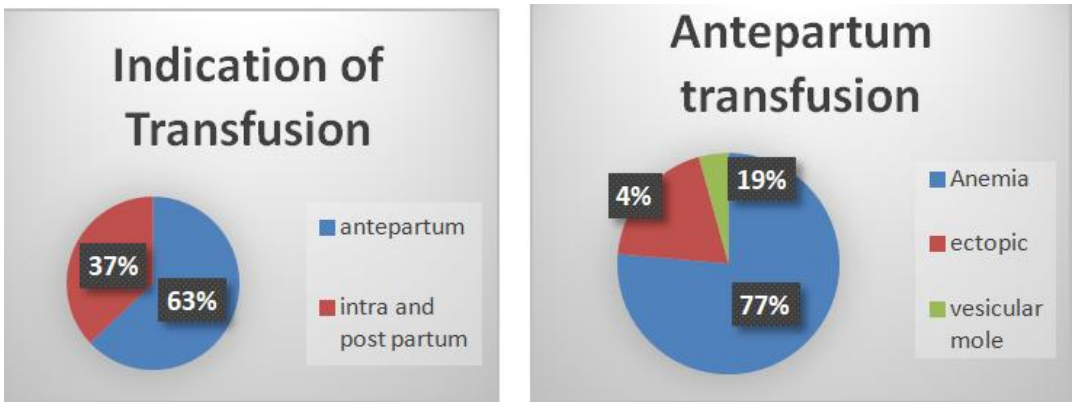
Results

Obstetric patients who underwent blood component transfusion

We have experienced 898 obstetric patients who underwent blood component transfusion during the study period. Out of these, 440 (49%) and 458 (51%) were primigravidas and multigravida respectively. The mean age of patients who received transfusion was 27 years. The maximum number of patients was in the age group of 21–32 years.

The 898 cases with obstetric hemorrhage that required blood component administration. 63% (566) and 37% (323) cases needed a peripartum and antepartum transfusion, respectively. On analyzing the indications for antepartum transfusion, it was found that 76% (247) cases were for anemia correction which accountedfor the maximum cases. This is followed by ectopicpregnancy (19.2%; 62) and vesicular mole (4.3%; 14).

The obstetric conditions which have led to intrapartum and postpartum hemorrhage include abruption placenta(127 cases; 22.4%), placenta previa (173 cases; 30.6%) atonic postpartum hemorrhage(135 cases; 23.9%) ,uterine inversion (24 cases; 4.3%), eclampsia (33 cases;5.8%), HELLP syndrome (2 cases;0.35 %), ruptured uterus (72 cases; 12.7%).



Graph 1:

Discussion

Due to the erratic pathology of postpartum bleeding, blood transfusion has been identified as one of the eight essential components of comprehensive emergency obstetric care, which has been shown to reduce maternal mortality.[2-11].

The main factors which contribute to maternal mortality and morbidity in a developing country are obstetric hemorrhage and anemia of pregnancy. Obstetric hemorrhage can occur either in ante-, intra-, or post-partum period.

The different components of the blood play different functions, and there is a need to realize that the component therapy is the need for the present day. The blood component therapy should not be just started based on one investigation like Hb or platelet count, but the clinical profile of the patient, present condition, possibility of rebleed, etc., should also be the guiding factor. Each bag of packed RBCs has 150–200 ml RBCs and 75 ml plasma with a hematocrit of around 60%. These are indicated when we have insufficient RBCs in circulation or there is a decrease in the oxygen-carrying capacity of the blood. Vachhani et al. in their study discouraged the practice of single-unit transfusion citing it as avoidable in the majority of the cases, and the risks involved in blood transfusion can cause more damage than benefit to the patient([11, 12]

The obstetric and medical condition for blood transfusion during intra- and post-partum period was analyzed. The indications observed in our study include abruptio placenta (127 cases; 22.4%), atonic postpartum hemorrhage (135 cases; 23.9%), placenta previa (173 cases; 30.6%), uterine inversion (24 cases; 4.3%), eclampsia (33 cases; 5.8%), HELLP syndrome (2 cases; 0.35%), ruptured uterus (72 cases; 12.7%).

Conclusion

Blood transfusion is a lifesaving essential component of obstetric care. Acute obstetric blood loss is usually unpredictable and sudden. The decision to transfuse should be time taken to maintain adequate tissue oxygenation in the face of acute hemorrhage. Identifying the risk factors for hemorrhage in the antenatal period and anticipating bleeding is essential in managing obstetric hemorrhage[2]. whole blood is preferred by many clinicians because of its easy availability in the blood banks.

Obstetric hemorrhage is the commonest cause of maternal death, causing one-fourth of maternal deaths yearly [14]. Massive and life-threatening obstetric hemorrhage occurs in 3–5% [2] and 0.1% [14–16] of deliveries, respectively, and blood product transfusion is required in 0.3–1% [14, 15]. During pregnancy, the changes in the coagulation and the fibrinolytic system in form of enhancement and inhibition respectively occur, [16] large volume blood loss causes consumptive loss of coagulation factors, which causes more bleeding and starts a vicious cycle ending up with DIC. These obstetric hemorrhages could be massive and may require replacement of one entire blood volume within 24 h or replacement of 50% of total blood volume (TBV) within 3 h.

Anemia during pregnancy is a significant cause of maternal mortality and morbidity. The decision for transfusion was done in this study when the Hb<7 gm%, and there were <4 weeks for delivery or in labor. This trigger for transfusion of blood has been controversial, and the Cochrane review favors the restrictive transfusion policy for the safety of the patients [8]. Postpartum PRBC transfusion in our study was only given if the patient was prone to bleeding due to some medical condition. [18].

Conclusion

Anemia during pregnancy is a significant cause of maternal mortality and morbidity. The decision for transfusion was done in this study when the Hb<7 gm%, and there were <4 weeks for delivery or in labor

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