

# An Analysis of Blood Transfusion Practices in Emergency Obstetrics: A Cross - Sectional Study from a Tertiary Care Health Centre of Eastern India

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**Abstract:** **Introduction:** Blood transfusion is essential in managing obstetric emergencies, where timely intervention with blood products can be life - saving for both mothers and fetuses. In India, haemorrhage remains a primary cause of maternal mortality, highlighting the need for reliable transfusion services, especially in resource - constrained settings. This study aims to assess the prevalence, indications, and outcomes of blood transfusions in emergency obstetrics at a tertiary care centre in Eastern India. **Methods:** This cross - sectional study was conducted over six months in the Department of Obstetrics and Gynaecology at HMCH Bhubaneswar. Ninety surgically operated obstetric patients aged over 18 years were recruited using convenient sampling based on a prior prevalence estimate of 18.4% for transfusions in emergencies. Patients who declined consent were excluded. Data on transfusion prevalence and indications were collected and analysed. **Results:** Among 1451 pregnant women presenting to the emergency obstetrics unit, 90 received transfusions, indicating a prevalence of 6.20%. The leading indication was postpartum haemorrhage (37%), followed by severe anaemia (30%). **Conclusion:** This study underscores the critical role of blood transfusion in managing acute obstetric haemorrhage and severe anaemia, which remain frequent and severe complications. Ensuring the availability of blood products is essential for reducing maternal mortality and morbidity in emergency settings. Emphasizing preventive measures, such as promoting adequate haemoglobin levels throughout pregnancy, may further mitigate these risks.

**Keywords:** blood transfusion, obstetric emergencies, maternal mortality, postpartum haemorrhage, severe anaemia.

## 1. Introduction

Blood transfusion has long been recognized as an indispensable component of modern medical care, and its application in obstetric emergencies is particularly critical. The ability to transfuse blood and its components—such as packed red blood cells, platelets, fresh frozen plasma, and cryoprecipitate—has saved countless lives worldwide. In the field of obstetrics, where complications can arise suddenly and often unpredictably, the timely administration of blood products can mean the difference between life and death for both the mother and the fetus.

Tertiary care centres in India with a high influx of obstetric cases, play a pivotal role in providing emergency care for pregnant women. These centres, often affiliated with postgraduate medical education programs, serve as hubs for high - risk obstetric cases referred from smaller healthcare facilities. Within these settings, blood transfusion services are an essential component of emergency obstetric care. However, despite the critical nature of these services, there is a paucity of comprehensive data regarding the prevalence, indications, and outcomes of blood transfusions in such settings. The existing literature largely focuses on individual case reports or small - scale studies, which limits the understanding of broader trends and patterns.

Given this context, it is essential to assess the real - world application of blood transfusion in obstetric emergencies, particularly in resource - limited settings where the demand for blood products is high and access may be constrained

## Objective

- 1) To determine the prevalence of blood and blood component transfusions in obstetric emergencies.
- 2) To identify the most common clinical indications prompting the use of transfusion in obstetric patients.

## 2. Methodology

- Study design: Cross - Sectional study.
- Study setting: Department of Obstetrics and Gynaecology, HMCH Bhubaneswar
- Study Subjects: All Patients who were surgically operated in the Obstetrics and Gynaecology department.
- Study duration: 6 months

### Sample size estimation:

- With reference to the study done by Vaid P et al. titled - “Role of blood and blood components transfusion in obstetric emergencies”, a prevalence of 18.4% for blood transfusions in obstetric emergencies was revealed over the one - year study period; Using 8% absolute precision and a desired CI of 95%;
- Estimated sample size (n) = 90
- **Sampling technique:** Convenient sampling

### Inclusion criteria

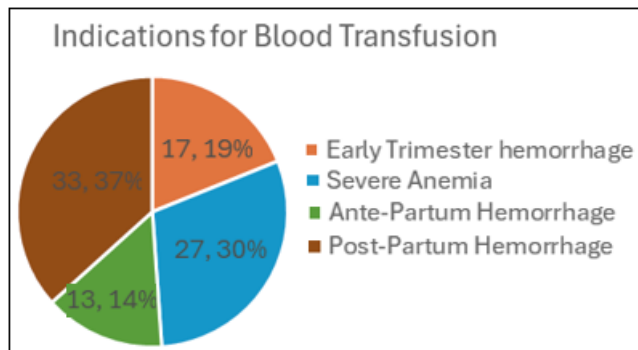
- All female patients who were surgically operated in the obstetrics and gynaecology department of a tertiary care health center of eastern India.
- Age more than 18 years

**Exclusions criteria**

- Patients/caretaker who did not give consent for study.

**3. Results**

A total of 90 pregnant females from 1451 expectant mothers were recruited from those who presented to the emergency obstetrics unit.



**Figure 1:** Indications of blood transfusion

**Table 1:** Sociodemographic details of subjects

Socio - Demographic Factors	Frequency (N=90)	Percentage (%)
<b>Age</b>		
<20 years	13	14.44
21 - 25 years	47	52.22
25 - 30 years	18	20
>30 years	12	13.33
<b>Place of Residence</b>		
Rural	67	74.44
Urban	23	25.56
<b>Parity</b>		
P0	17	18.89
P1	27	30
≥P2	46	51.11

**Table 2:** Indications for C - section

Indications For C - Section	Frequency (N=90)	Percentage (%)
Fetal distress	30	33.33
Previous C - section	11	12.22
Placenta praevia	16	17.78
Breech/transverse lie	8	8.89
Failed induction	4	4.44
Failed instrumentation	3	3.33
Non - Progress of Labour/CPD	10	11.11
Severe Pre - eclampsia/Eclampsia	4	4.44
Abruption	4	4.44

**4. Discussion**

The study found that the prevalence of blood transfusion in emergency obstetrics is found to be 6.20%. The most common indication for blood transfusion was found to be Post- partum haemorrhage (37%) followed by severe anaemia (30%). This study showed that severe obstetric haemorrhage is a relatively frequent complication. The present study reinforces the importance of appropriate use of blood and its components in obstetric emergencies.

**5. Conclusion**

Blood transfusion is need of the hour in acute blood loss as this not only prevents mortalities but also decrease morbidities associated with it. It is indispensable for saving lives of mothers who need comprehensive emergency obstetric care services because of pregnancy related haemorrhage, severe anaemia or abortions. As it is rightly said that prevention is better than cure, thus during nine months period, obstetrician must encourage pregnant women to maintain their haemoglobin level in normal range.

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