

**PREDICTORS RELATED TO ICU ADMISSIONS OF OBSTETRICS CASES OF A TERTIARY CARE HOSPITAL IN WESTERN UTTAR PRADESH : A RETROSPECTIVE OBSERVATIONAL STUDY****Dr. Yogita Anand**

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ABSTRACT Obstetrics medicine is unique as it needs management of two different lives with different requirements at the same time, therefore when a person in gravid state lands up in Intensive Care Unit, the condition can become life threatening very quickly requiring critical care support, the care of the mother is given keeping in the foetal wellbeing too. Identifying predictors of Intensive Care Units admissions in obstetric cases is crucial for early risk stratification, timely intervention, and efficient resource allocation. Unique nature of obstetric medicine is due to altered physiology in pregnancy, the presence of the fetus, the rapid deterioration of maternal and fetal condition. Haemorrhage and pregnancy related hypertension with it's complications are two common indication for Intensive Care Unit admissions.

KEYWORDS : Intensive Care Unit, Obstetrics, Haemorrhage, Maternal Mortality.**INTRODUCTION**

Managing critically ill obstetric patients in ICU presents a distinct and complex challenge for both obstetricians and physicians, because of simultaneous management of two lives with different physiologies. Unique nature of obstetric medicine is due to altered physiology in pregnancy, the presence of the fetus, the rapid deterioration of maternal and fetal condition.^[1]

The physiological changes in pregnancy combined with pre existing conditions or pregnancy related complications, can rapidly progress to life threatening situations requiring critical care support. Identifying predictors of Intensive Care Units admissions in obstetric cases is crucial for early risk stratification, timely intervention, and efficient resource allocation. Admission of obstetric patients occur approximately at 0.1-0.9% of the deliveries.^[2-5]

Aim

To evaluate the occurrence, indication and outcome of patients admitted in ICU of an obstetrics tertiary care hospital.

MATERIAL AND METHODS

- **Study Design:** RETROSPECTIVE OBSERVATIONAL STUDY
- **Study Site:-** This study was conducted in the obstetrics and gynaecology department of Rohilkhand Medical College and Hospital, Bareilly, a tertiary care hospital.
- **Study Population-** This retrospective study is conducted by collecting data from Medical Record Room of Rohilkhand medical college and Hospital of obstetrics admissions to ICU from Jan 2023 to June 2024 in Rohilkhand medical college and Hospital ICU. The medical records of the patients admitted in ICU during pregnancy and within 6 weeks of delivery was reviewed. Patients included was those patients received in casualty, admitted patients with complications and referred patients from other hospitals for ICU management.
- The data collected was age, parity, obstetric status, primary diagnosis, interventions and outcome of obstetric patients admitted to the ICU from January 2023 to June 2024.
- **Sample Size -** All the obstetrics patients admitted to ICU from Jan 2023 to June 2024 in Rohilkhand medical college and Hospital ICU (data will be collected from Medical Record Room of Rohilkhand medical college and Hospital).
- **Study Duration -** One month (jan 2025 to feb 2025)

Inclusion Criteria & Exclusion**Inclusion Criteria**

- Pregnant patients or patients within six weeks of delivery admitted in ICU.
- Age Group 20 to 35 years.

Exclusion Criteria

- Those not giving consent for participating in study

RESULTS**Table 1 – Primary Diagnosis at the Time of Admission n=70**

Diagnosis	Number	Percentage
Haemorrhage	18.00	25.71
Hypertension, preeclampsia, eclampsia, HELLP	14.00	20

Sepsis	12.00	17.14
Severe anaemia	7.00	10
Heart Disease	5.00	7.14
Medical conditions unrelated to pregnancy	8.00	11.42
TB	2.00	2.85
Dengue		5.71

Table 2 – Cause of Haemorrhage

Diagnosis	Number	Percentage
Ectopic pregnancy (ruptured)	7	38.88
Post Partum hemorrhage	5	27.77
Uterine rupture	3	16.66
Antepartum hemorrhage	2	11.11
Placenta Previa	1	5.55

Table-3 (Distribution of Organ Failure – 57)

Diagnosis	Number	Percentage
Respiratory Failure	14	24.56
Hematologic	10	17.54
Renal	10	17.54
Cardiovascular	12	21.05
Cerebro vascular	7	12.28
Hepatic	4	7.017

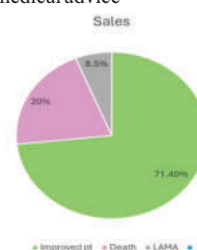
Table 4 - ICU Intervention (In 70 Patients)

	Number	Percentage
Mechanical Ventilation	48	68.57
Blood and blood product	58	82.85
ionotrops	22	31.42
Anti - hypertensive	16	22.85
Anti - convulsant	12	17.14
Dialysis	8	11.42
Obs hysterectomy	6	8.57
laparotomy	11	15.71

Table 5 (Causes Maternal Death In 14 Patients)

Hypovolemic shock	1
MODS	4
ICH	2
Respiratory Failure	3
Cardiac failure	4

End result of patients – 50 patients improved, 14 patients died ,and 6 patients Left against medical advice



There were total of 70 patients admitted in the obstetrics ICU in one and half years. Majority of patients were multipara. Most of our patients were from lower socioeconomic background. Indications for ICU admissions are present in Table 1. ICU admissions due to hemorrhage was 18 (25.71%) out of 70 patients. Hypertension, preeclampsia, eclampsia, HELLP syndrome present in 14 patients (20%). Sepsis was in 12 (17.4%) patients and Severe anemia was the main cause of complications in 7(10%) patients. Heart disease with pregnancy contributed in 5(7.14%) of ICU admissions. Medical cases unrelated to pregnancy was 8(11.42%). T.B contributed 2 (2.83%) and Dengue 4(5.71%) in complicating pregnancy.

Table 2, representing causes of Hemorrhage in 18 patients. Ectopic pregnancy(ruptured) in 7(38.88%) , Post partum hemorrhage was seen in 5(27.77) patients. Patients with uterine rupture were 3(16.66%), APH was in 2(11.11%) patients, and hemorrhage due to placenta previa were in 1 (5.55%) patients.

During the ICU stay, complications like disseminated intravascular coagulation (DIC) and other hematological causes seen in 10 (17.54%) patients, renal failure in 10 (17.54%), respiratory failure in 14 (24.56%), hepatic encephalopathy in 4 (7.017%), and cardiovascular cause in 12(21.05%) and cerebrovascular in 7(12.28%) patients. The distribution of organ failures is displayed in Table 3.

ICU interventions included mechanical ventilation in 48 (68.57%) patients, transfusion of blood and blood products in 58 (82.85%), inotropes in 22 (31.42%), antihypertensives in 16 (22.85%), anticonvulsants in 12 (17.14%), and dialysis in 8 (11.42 %). Obstetrics hysterectomy done in 6(8.57%) patients, and laparotomy done in 11(15.71%) patients.(table 4)

14 patients died and causes of maternal deaths were Hypovolemic shock, multiple organ failure (MODS), Intracranial hemorrhage, Respiratory failure, Cardiac failure.

DISCUSSION

During one year and seven months of study, 70 patients were admitted in obstetrics ICU. In admitted patients obstetrics haemorrhage is seen in 18 patients (25.7%) , pregnancy related hypertension is seen in 16 patients (22.8%). Both were related to increased mortality and morbidity. The mortality rate was found to be higher in haemorrhagic group as compared to hypertensive group also seen in study of poornima B. et al^[6] and Barde et al^[7] . Some patients developed DIC, acute renal failure and MODS. Mechanical ventilation was used in 48 patients (68%).

Fifty patients (71.4) patients improved, 14 patients (20%) died, 6 patients (8.5%) went LAMA.

Most of the case of haemorrhage needed surgical interventions.

Majority of the patients 50 (71.4%) improved. 14(20%) ICU patients died, 6 (8.5%) patients went LAMA. The death rate was high (70.3%) among patients admitted for obstetric indications compared to the nonobstetric indications, seen in Poornima B et al.^[6]

CONCLUSION

According to this study, haemorrhage and pregnancy related hypertension with it's complications, are the two common indications for ICU admissions.

Development and upliftment of primary health care facilities with involvement of multi disciplinary teams and referral of high risk pregnancies to higher health care centre is the key to decreased maternal mortality and morbidity.

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