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A retrospective study of obstetric patient's pattern and outcome in intensive care unit of a tertiary care hospital

Medical Science

KEYWORDS : ICU, Haemorrhage, Eclampsia.

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ABSTRACT

Background: Pregnant women are at risk to develop complications due to illness related to pregnancy or due to aggravation of pre-existing disease. This study was undertaken with the objective to ascertain the prevalence, causes and outcome of critically ill obstetric patients admitted to the intensive care unit (ICU).

Methods: A retrospective case series study and analysis of data from obstetric patients admitted for critical care management.

Results: 0.96% of the total obstetric patients admitted to the hospital required ICU admissions. 35.6% of patients were admitted to ICU for ventilator support. Pre-eclampsia and obstetrical hemorrhage were the common diagnosis for these patients.

Conclusion: Critically ill obstetric patients require a team approach of the obstetrician, anesthesiologist and intensive care specialist for the optimal care of these patients

Introduction

Pregnant women are often young and in their reproductive years. In majority of them, pregnancy and labour usually progresses uneventfully. Sudden complications occurring during this period may lead to maternal mortality and morbidity The transfer of an obstetrical patient to the intensive care unit (ICU) is considered to be an indicator of maternal morbidity[1].Developing countries account for 99% of global maternal deaths. Incidence of pregnant women admitted to ICU in developed coutries 2 to 4 per 1000 deliveries as compared with 2 to 13.5 per1000 in developing countries[2]. Management of these patients requires cooperation of obstetrician and intensivist/anesthesiologist.

This study was undertaken with the objective to ascertain the prevalence, causes and outcome of critically ill obstetric patients admitted to the intensive care unit (ICU).

AIMS AND OBJECTIVES

1. To evaluate the obstetric admission to the intensive care unit (ICU).
2. To determine the spectrum of diseases in obstetric patients admitted to ICU.
3. To study the outcome of obstetric patients admitted to ICU.

Materials And Methods

The present study was conducted in 8 bedded multi-disciplinary intensive care unit at 900 bedded tertiary care centre at SS institute of medical sciences and research centre in Davangere, India .It was a retrospective study conducted over a

period of 24 months from 1/1/2013 to 1/1/2015. Two years retrospective review of all the obstetric admissions (antenatal and postnatal up to 6 weeks post-delivery) were done. Total number of patients admitted to ICU in this period, total number of deliveries in study period and total obstetric patients admitted to ICU were noted. The data included demographic details, obstetric history, indications for ICU admission, pre-existing medical illness and pregnancy complications, treatment given and outcome .Parity and gestational age of admission was also noted and data was analysed.

Results

A total of 73 patients were admitted in ICU from January 1, 2013 to December 31, 2015.

During the study period there were a total of 7550 admissions for the obstetric reasons and the hospital had a total of 3540 deliveries. These admissions included patients who were admitted to the hospital for antenatal complications, deliveries, abortion and its complications, ectopic pregnancy, obstetric hemorrhage, complications of the puerperium. The analysis shows 0.96% of the total obstetric patients admitted to the hospital required ICU admissions.

The age of the patients ranged from 18 to 44 years and majority of patients were between 20 to 30 years of age. Approximately 2/3 of the patients, admitted to the hospital were primigravidae. Most of the patients were admitted to the ICU during the IIIrd trimester and during the immediate post-partum or post-abortal period.

Table 1 : Age Distribution of Patients Admitted to ICU

Age Group (years)	No. of cases (n = 73)	%
18 – 25	35	47.9
26 - 30	27	36.9
31 - 35	6	7.8
36 – 45	4	5.4

Table2 :Time of admission to hospital

Time	No. of case (n= 73)	%
Ante partum	33	45.21
postpartum	40	54.79

Pre-eclampsia and its complications were the primary patient diagnosis for the patients admitted to ICU in 45.18% of the cases. Obstetrical haemorrhage (abruption, PPH, rupture uterus) was responsible for 31.46% of admission.16.46 % of cases had cardiac problems.

8.2% of patients requiring admissions to ICU died due to their illness.3 patients developed complications due to post-partum hemorrhage, 2 patients had puerpeural sepsis, and one patient had dilated cardiomyopathy.

Three patients got discharged against medical advice and could not be followed.

Table 3 : Indications of admission in ICU

INDICATIONS		NO	%
Haemorrhage	APH	10	13.69
	PPH	9	12.31
	Ruptured Uterus	2	2.73
	Ectopic	2	2.73
Hypertension	Severe PE	16	21.91
	Eclampsia	12	16.46
	HELLP	5	6.84
Cardiac Diseases	RHD	11	15.1
	Dilated Cardiomyopathy	1	1.36
Sepsis	Puerperal Sepsis	4	5.47
Anaemia		2	2.73

Discussion

Maternal mortality is the most devastating complication of pregnancy. ICU management may be necessary if life threatening complications develop during gestation and in the postpartum period. These complications may arise out of any pre-existing medical condition like rheumatic heart disease as in our study, renal conditions etc. or due to any obstetric condition arising out of the pregnancy.

Of the 73 obstetric patients admitted to the ICU, 67 of 73 patients were discharged while 6 patients died, a mortality rate of 8.2%.Previous studies shown a mortality rate between 5 to 36% in obstetric patients depending on country .Collop etal reported a mortality rate of 20%[1] while Mabie etal reported 3.5% mortality[3].

In our patients, preeclampsia, eclampsia, and HELLP syndrome were the most common (45.18 %) reasons for ICU admission, followed by hemorrhage (31.46 %) and Cardiac diseases (16.46 %). These diagnoses are confirmed to be associated with increased maternal morbidity and mortality. Early diagnosis of these conditions may prevent complications or decrease their impact on survival.

Hypertensive disorders of pregnancy (50%) and sepsis (17%) were the two main obstetrical conditions responsible for maternal illness in a study by Bibi[4]. Pre-eclampsia, obstetric hemorrhage and sepsis were the indications for critical care in 26%, 20% and26% respectively. Richa et al[5.] Pre-eclampsia (62.0%) and obstetric haemorrhage (18.3%) were the most common reasons for ICU admission in a 12-year-study by Keizer.[6]

Our study shows that the 35.6 % of patients had respiratory insufficiency and required ventilator support. A study by Sriram found, mechanical ventilator support was required by 61% of the patients and 38% had hemodynamic instability.[8] Bibi in their study, showed 40% of the patients required critical care for hemodynamic instability.[4]

Our study had 4 patients who were admitted due to infective causes puerperal and post-abortal sepsis. Three patients succumbed to their illness, indicating that the infection is still a major role in maternal morbidity and mortality in our country. The same has been seen in studies by Osinaike[7] and Bibi[4].

This study had a mortality of 8.2%,while Sriram had nil mortality experience in their study[8] and Suleiman had maternal mortality of 10%.[9] 20% of our patients had no access to previous antenatal care and thus emphasizing the need for regular and proper antenatal care to decrease maternal mortality.

Conclusion

Early admission and appropriate management of critical obstetrical patients to the ICU decreases maternal morbidity and mortality. Availability of good obstetric care is the cornerstone to decreasing maternal mortality. Measures regarding maternal awareness, optimal medical care and early referral is required to safe guard these women who are otherwise healthy. Critically ill obstetric patients require a team approach of the obstetrician, anesthesiologist and intensive care specialist for the optimal care of these patients.

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