

## A Retrospective Study of Maternal & Perinatal Outcome in Obstetrical Emergencies at Tertiary care centre in Ahmedabad

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**Abstracts:** **Objectives:** To identify obstetric cases as emergencies needing critical care. To assess the varying clinical presentations and contributing factors for cases arriving as obstetric emergencies. To identify the need for hospitalization and admission to intensive care unit. To understand the various interventions and critical care management required , its impact on future outcome of such admissions and to analyze the maternal and perinatal outcome of such obstetric emergencies. **Material and Methods:** 100 cases of obstetric emergencies admitted and treated at a tertiary care centre in Ahmedabad during the study period from March 2017 to March 2018 It is a clinical study of maternal and perinatal outcome in obstetric emergencies irrespective of gestational period ,parity and medical complications. **Results:** A total of 9,160 deliveries were conducted during this period. The majority of obstetric emergencies were in the age group between 20-30 years, 55% were multigravida, 45% were primi gravida, 10% were grand multi gravida. 56% were referred cases, 44% were directly admitted. Most common obstetric emergency was obstetric hemorrhage in 34% cases.52% were delivered by normal vaginal delivery.LSCS was done in 42%.ICU admission in 33.3%, live births in 72%, perinatal mortality was 28%, maternal mortality in 11% cases. **Conclusion :** Obstetric emergencies have a deleterious effect on mother and fetus resulting in high maternal and perinatal morbidity and mortality. Peripartum hemorrhage, hypertensive emergencies are the leading causes. [Mehta S Natl J Integr Res Med, 2018; 9(6):54-58]

**Key Words:** Maternal, Obstetric Emergencies, Perinatal outcome

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**Introduction:** The maternal mortality ratio (MMR), expressed as maternal deaths per 100,000 live births over a given period, is a major measure of quality of obstetric care. Globally 303,000 maternal deaths occurred in 2015[MMR-216], a decline of 44% from levels in 1990[MMR-385]<sup>1</sup>.India has a maternal mortality ratio of 130 (2014-2016),a significant decline of 76.6% from levels in 1990(556)<sup>1</sup>.With this,India has achieved Millenium Development Goal (MDG) 5 i.e. India has achieved a reduction in MMR by three quarters from 1990 to 2015<sup>2</sup>. Government of India, through National Health Mission (NHM) has taken key steps to address the issue of maternal mortality and accelerate its reduction in order to achieve SDG (Sustainable Development Goals) of MMR to be reduced to less than 70 by 2030 which includes setting up of blood storage units at FRU's(first referral units) and training manuals for doctors and healthcare providers for dealing with an obstetric emergency at a primary level<sup>1,2</sup>

Obstetric emergencies are the leading causes of maternal mortality worldwide. In developing countries like India, illiteracy, poverty, lack of antenatal care, poor transport facilities and inadequate equipment/staffing magnifies the problem.It is very important to give due attention to the nature and magnitude of

obstetrical emergencies, so that corrective measures can be taken to reach the desired goal. With this background, a retrospective study was carried out to understand the incidence and nature of obstetrical emergencies and their maternal and perinatal outcome

**Materials & Method:** A study of maternal and perinatal outcome studied in 100 obstetric emergency admissions during 1 year study period from March 2017 to March 2018 was done. Ethical committee approval was obtained. A total of 9,160 deliveries were conducted during this period. The obstetric emergencies were analyzed in 100 cases. Social and maternal factors in relation to etiology, clinical features, mode of management and maternal and fetal outcome and preventive aspects were studied

**Inclusion criteria:** Pregnant women irrespective of gestational period, and/or within 42 days of delivery admitted. Cases with singleton or multiple pregnancies, cases with obstetric emergencies in labour such as malpresentations, malpositions, deep transverse arrest, obstructed labour, Ante partum hemorrhage, eclampsia, rupture uterus. Cases with obstetric emergencies in 3rd stage of labour such as retained placenta, post partum hemorrhage, post partum collapse, cases referred from peripheries.Pregnancies

associated with medical complications such as diabetes, severe anemia, heart disease and hepatitis.

**Result:** In the present study, majority of patients(72%) belong to the age group of 20-30 years. (Table 1). The same age group also forms a majority in study done by Sharda et al(79%) and Catherine et al(80.4%). This age group reflects the peak reproductive age group and hence is expected finding due to its higher reproductive potential

**Table: 1 Obstetric Emergencies in Various Age Groups**

Sr No	Age Group	No Of Cases (100)	Sharda et al <sup>3</sup>	Catherine et al <sup>4</sup>
1	16-20	16	5	16.5
2	20-30	72	79	80.4
3	>30	12	16	3.1

In this study, most emergencies belonged to the multipara group(55%) which is also reflected in studies of Sharda et al(47%) and Upadhyaya et al(49%). Both Antepartum and Postpartum hemorrhages have increased incidences in multiparous patient. Also Anemia and other medical complications associated with pregnancies are seen more commonly in multiparous than primiparous patients (Table 2).

**Table 2: Parity**

Sr no	Parity	No Of Cases	Sharda et al	Upadhyaya et al <sup>5</sup>
1	Primipara	45	44	39.62
2	Multipara	55	47	49.06
3	Grand Multipara	10	9	8.80

Maximum no of patients belonged to the third trimester(84%) which is expected as complications of pregnancies are more likely to occur in peripartum period and secondly, there is an increased chance of exacerbation of co-morbidities during this period (Table 3).

**Table 3 Gestational Age**

Sr No	Gestational Age	No Of Patients
1	0-12 WEEKS	10
2	13-24 WEEKS	12
3	25-36 WEEKS	32
4	>36 WEEKS	52
5	POSTPARTUM	04

In the present study, majority of patients had taken no antenatal visits and were unbooked (56%). Studies done by Lamina mustafa and Upadhyaya had 60% and 63% unbooked cases respectively. According to WHO(2001) recommendation, at least 4 antenatal visits should have been taken. 1<sup>st</sup> at 16 weeks, 2<sup>nd</sup> between 24-28 weeks, 3<sup>rd</sup> at around 32 weeks and 4<sup>th</sup> at around 36 weeks (Table 4).

**Table: 4 ANC Registrations**

Present Study			Lamina Mustafa et al <sup>6</sup>	Upadhyaya et al
Un-booked	Antenatal Visits	No Of Patients		
	None	56	60.3%	62.89%
Booked	<3	30	39.7%	27.11%
	=>3	14		

In the present study, majority of patients(41%) had a primary school education while 35% were illiterate. Educated females are more sensitive to health issues resulting in prompt seeking of healthcare and are also more likely to have better social and nutritional status and hence expected to have fewer complications. This finding probably highlights the importance of female education for good maternal outcome (Table 5).

**Table 5: Educational status**

Sr No	Education	No Of Patients
1	Illiterate	35
2	Primary School	41
3	High School	24

In the present study, majority of patients were referred from PHC/CHC(40%) and private(16%). This finding is probably due to lack of OT facilities and blood products at primary and community health centres. Private centre referrals are probably due to the cost factor as under the JSSK programme, all obstetric facilities and interventions are provided free of cost (Table 6).

**Table 6: Number of referred cases**

1	PHC/CHC	40
2	PRIVATE	16
3	DIRECT ADMISSION	34

The majority of cases were delivered by normal vaginal delivery in 52% cases and by LSCS in 42% cases [FTNVD-Full term normal vaginal delivery]. [PTNVD-Preterm normal vaginal delivery] (Table 7).

**Table 7 :Mode of deliveries**

Sr No	Mode of delivery	Number of cases	%
1	Emergency LSCS	42	42
2	Laparotomy	6	6
3	FTNVD	28	28
4	Outlet forceps	5	5
5	PTNVD	14	14
6	Undelivered	3	3
7	Abortion	2	2
	Total	100	100

Most common cause for ICU admission was hemorrhagic shock in 36.6% and second most common cause was Hypertensive disorders in 20% cases. In Saha et al, most common cause for ICU admission was hypertension in 13% cases (Table 8).

**Table 8: Indications for ICU Admission**

Reason for admission	Present study	Saha R et al <sup>7</sup>
Pulmonary edema	5(16.6%)	3(6%)
Hemorrhagic shock	11(36.6%)	7(14%)
Sepsis	01(3.3%)	2(4%)
Hypertension	06(20%)	13(26%)
Cardiac condition	01(3.3%)	8(16%)
Respiratory insufficiency	02(6.6%)	4(8%)

Out of 95 deliveries, the live births occurred in 71.5%, perinatal mortality occurred in 28.4% cases. Prematurity was present in 25.2% cases, while IUGR was present in 9.4%, congenital anomalies were in 1.0%. of maternal mortality followed by PPH(27.2%). (Table 9). This finding further strengthens the need for early detection of patients with risk factors for hypertension and

**Table 11: Comparison of obstetric emergencies encountered with other studies**

Obstetric emergencies	Present study	Sangeetha Gupta et al <sup>8</sup>	Lamina Mustafa et al	Upadhyaya et al
Obstetric hemorrhage	34%	28%	21.7%	27%
Severe preeclampsia	29%	20.5%	8.8%	27.04%
Eclampsia	8%	-	8%	10%
Ruptured uterus	2%	-	4.6%	1.89%
Severe anemia	10%	11.8%	-	-
Sepsis	2%	3.5%	6.1%	10.69%
Cardio-myopathy	4%	-	-	-
Others	11%	-	-	-

Death occurred within 12 hrs of admission in 45.4% cases. According to Namratha Shrivastava

hemorrhages in pregnancy through regular antenatal visits and proper treatment of such patients will lead to decrease of this preventable mortality

**Table 9: Fetal outcome**

SR NO	Fetal outcomes	Cases	&
1	Live birth	68	71.5%
2	Perinatal mortality	27	28.4%
a	IUD	14	
b	Fresh still born	07	
c	Early neonatal death	06	
3	Prematurity	24	25.2%
4	IUGR	09	9.4%
5	Congenital anomalies	01	1.05%
	Total	95	100%

Hypertensive disorders(36.3%) was leading cause(Table 10).

**Table 10: Causes of maternal mortality**

S.No	Causes	No. of cases	%
1	Hypertensive disorders	4	36.3%
2	PPH	3	27.2%
3	APH	1	9%
4	Heart disease	1	9%
5	Sepsis	2	18.8%
	Total	11	100%

Most common obstetrical emergency(Table 11). in our study was obstetric hemorrhage (34%) followed by severe preeclampsia(29%). In Sangeetha Gupta et al, Lamina Mustafa et al, and Upadhyaya et al, obstetric hemorrhage and severe pre eclampsia were most common

et al 49.06% deaths occurred within 12 hrs. Subsequent morbidity and mortality rates

subside with progression. Therefore, timely interventions taken in the first 12 hrs of admission prove to be set point for further management and progression of the condition (Table 12).

**Table 12: Admission to death interval**

Time	Namratha Shrivastava et al <sup>9</sup>	Present study
Within 12 hrs	26(49.06%)	5(45.4%)
12-24hrs	13(24.53%)	3(11.8%)
24-72 hrs	8(15.09%)	2(23.5%)
->72 hrs	6(11.32%)	1(23.5%)

**Discussion:** A total of 9,160 deliveries were conducted during this period. The majority of obstetric emergencies were in the age group between 20-30 years, 55% were multigravida, 45% were primi gravida, 10% were grand multi gravida. 56% were referred cases, 44% were directly admitted. Most common obstetric emergency was obstetric hemorrhage in 34% cases. 52% were delivered by normal vaginal delivery. LSCS was done in 42%. ICU admission in 33.3%, live births in 72%, perinatal mortality was 28%, maternal mortality in 11% cases.

**Conclusion :** Obstetric emergencies have a deleterious effect on the mother and fetus resulting in high maternal and perinatal morbidity and mortality. Peripartum hemorrhage (APH and PPH) and hypertensive emergencies are leading causes of maternal mortality and morbidity worldwide. Preventive measures taken during early gestation makes a huge difference in decreasing these cases. Health education to pregnant women about maternal health services and its proper implication. Early ANC booking and regular Antenatal checkups, a minimum 4 checkups for normal pregnancy and 10 checkups for high risk Pregnancy at regular intervals. Sensitisation of doctors and other healthcare providers towards obstetric emergencies so that the earliest signs not be neglected. Top priority management of high risk pregnancies preferably at a tertiary care hospital or at private center with all available facilities to deal with an obstetric emergency. Availability of communication and transport facilities for speedy referral and transfer of high risk pregnancies and obstetric emergencies to tertiary care centres. Provision for

blood transfusion facilities round the clock at District and Taluka Hospital. Setting up of separate obstetric Intensive care units (OICU) and availability of obstetrician, anesthetist, neonatologist, physician and surgical services for these emergency cases. The maternal mortality rates in developing countries remain high, and many of these deaths are likely to be preventable. Providing adequate and accessible health-care services and education of community birthing assistants (dais) to ensure timely transfer of the unwell mother and providing a separate obstetric intensive care unit at every tertiary hospital is a challenge that needs to be met

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