

Review of Obstetrical Emergencies at Tertiary Care

Nisha Toshniwal¹, Munjal Pandya², Dipenti Mehta³, Dhrumi Prajapati⁴, Nikunj Patel⁵,
Keyur Patel⁶

¹Senior Resident, Department of Obstetrics and Gynecology, Narendra Modi Medical College,
Maninagar, Ahmedabad – 380008, India

²Associate Professor, Department of Obstetrics and Gynecology, Narendra Modi Medical College,
Maninagar, Ahmedabad – 380008, India

³Junior Resident, Department of Obstetrics and Gynecology, Narendra Modi Medical College,
Maninagar, Ahmedabad – 380008, India

⁴Junior Resident, Department of Obstetrics and Gynecology, Narendra Modi Medical College,
Maninagar, Ahmedabad – 380008, India

⁵Junior Resident, Department of Obstetrics and Gynecology, Narendra Modi Medical College,
Maninagar, Ahmedabad – 380008, India

⁶Junior Resident, Department of Obstetrics and Gynecology, Narendra Modi Medical College,
Maninagar, Ahmedabad – 380008, India

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Corresponding author: Dr. Munjal J Pandya

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Abstract:

Introduction: A serious and frequently dangerous situation that arises suddenly and unexpectedly and necessitates immediate action to save lives is referred to as an emergency. The leading cause of maternal mortality worldwide are obstetric emergencies, especially in developing nation where a lack of antenatal care, poor transportation infrastructure, low literacy rates and inadequate staff and equipment all contribute to problem.

Aims and Objective: To review of obstetrical emergencies, its cause, management and outcome at tertiary care hospital.

Material and Methodology: A prospective observational study conducted in our hospital on the patients with obstetric emergency at labour ward of LG hospital during November 2022 to November 2023.

Results: In our study majority of the patients (42%) were in the 25 to 29 year old age range. Only 7.1% were over the age of 35, while 31.4% were under 24. The majority of patients who needed emergency obstetric care were lower gravida women. Emergency caesarean section accounted for 48.6% of deliveries. 77.1 % outcome were uneventful. 5.7% of patient developed sepsis, 11.4% has significant anaemia. 6.3% of all maternal deaths were from 6 causes; PPH, sepsis, difficult labour, pulmonary oedema, and abruption with IUD.

Conclusion: Obstetric emergencies are a significant cause of morbidity and mortality among pregnant women and their newborns. The management of these emergencies requires timely and appropriate intervention to improve maternal and fetal outcomes.

Keywords: Antepartum Haemorrhage, Ectopic Pregnancy, Postpartum Haemorrhage, Maternal Mortality.

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Introduction

A serious and frequently dangerous situation that arises suddenly and unexpectedly and necessitates immediate action to save lives is referred to as an emergency. A key indicator of the calibre of obstetric care is the maternal mortality ratio (MMR), which is calculated as the number of maternal deaths per 100,000 live births over a specific period. The Estimates from the World Health Organization (WHO) show that it varies up to 100 times, from about 10 in developed countries to about 1,000 in the least developed countries.

The leading causes of maternal mortality worldwide are obstetric emergencies, especially in developing nations where a lack of antenatal care, poor transportation infrastructure, low literacy rates, and inadequate staffing and equipment all contribute to the problem. Prevention, whenever possible and quick, efficient care for obstetric emergencies will help. When possible, prevention and quick, efficient obstetric care emergencies will significantly lessen the severity of maternal mortality appears to be on the rise, and resisted all attempts by the WHO to reduce it.[1] High

maternal and perinatal mortality raises public health concerns despite growing public awareness of antenatal care and safe delivery procedures.

Pregnancy outcomes are greatly influenced by the demographic and clinical characteristics of the patient, such as maternal age, parity, antenatal care, and fetal presentation with related medical & obstetrical complications.

In some low-income countries, the average birth assistance rate is as low as 34%, compared to the global average of 61%. If a patient needs immediate critical care for an obstetric emergency, factors such as underutilization of health services, inappropriate transportation options, health ignorance, poverty, and traditional beliefs all contribute to a worsening of their condition.

To improve indicators related to maternal and child health and ultimately lower rates of maternal, infant, and child mortality, the Indian government has developed an interstate border district strategy. The outcome is influenced by the community's literacy and mothers' awareness as well as the political system as a whole. [2]

Because of this, a study was done at a tertiary care teaching hospital to better understand the frequency and nature of obstetrical emergencies as well as their impact on maternal and perinatal outcomes.

Aims & Objective

1. To outline the socio-demographic details of obstetric emergency patients.

2. To study the antenatal, intranatal and perinatal outcomes in obstetric emergency patients.
3. To know the magnitude of maternal mortality among the referred emergency at a tertiary care centre
4. To determine factors influencing the various obstetric outcomes in obstetric emergency patients.

Methods and Materials

Study type: Observational (hospital-based)

Study design: Descriptive Cross-Sectional Study

Study Area:

L.G Hospital, Ahmedabad

Study period: November 2022-November 2023

Study population: mothers with obstetric emergencies came to the Labour Ward of L.G Hospital

Selection criteria:

Inclusion criteria:

1. Pregnant women irrespective of gestational period, and/or within 42 days of delivery were included after giving informed consent.
2. Consent was sought from family members of eligible participants who were accompanied but unable to provide it, such as unstable patients who were in shock.

Exclusion criteria: Refused to participate.

Observation and Discussion

Table 1: Age group of women with obstetric emergencies (N = 140)

Age group	Cases	%
18-24	44	31.4
25-29	59	42.1
30-34	27	19.3
35-39	10	7.1

The majority of the patients were between 25-29 years (42%) and 31.4% were aged less than 24 years only 7.1% where over 35 years of age. The mean age of the woman was 26.7±4.3 years (range=18-36) A study done by Shruti Mane et al on obstetric emergency and its fetal-maternal outcome in a tertiary care center at MGM medical college and hospital, Kalamboli shows a majority of obstetric emergencies were in the age group between 21-30 years (69.56%)[3].

Table 2: Sociodemographic characteristics of women with obstetric emergencies (N=140)

Variable	No.	Percentage
Education		
Illiterate	36	25.7%
Primary	34	24.3%
Secondary	41	29.3%
Graduate	29	21.7%
Occupation		
Government	11	7.9%
Housewife	76	54.3%
Private sector	25	18%
Self-employed	28	20%
Residency		

Informal settlement	28	20%
Rural	66	47.1%
Urban	46	32.9%
SES		
Upper	4	2.9%
Upper middle	29	20.7%
Middle	38	27.1%
Lower middle	42	30.0%
Lower	27	19.3%

Table 2 shows that 29.3% had completed a Secondary level of education. Most of the patients were housewives (54.3%). 47.1% resided in rural settlements while 32.9% were from urban settlements. A majority (30.0%) of patients belonging to the lower middle socioeconomic class followed by the Middle socioeconomic class (27.1%) while only 2.9% were from the Upper middle socioeconomic class similar to the study conducted by Vidyadhar B. Bangal et al.[4]

Table 3: Distribution according to gravidity of cases (N=140)

Gravida	No.	Percentage
Primigravida	63	45.0%
Gravida-2	27	19.3%
Gravida-3	34	24.3%
Gravida-4	13	9.3%
Gravida- \geq 5	03	2.1%

Table 3 shows that 64.3% of the cases are either primigravida (45.0%) or second gravida (19.3%) while 35.7 % of the patient had gravidity of more than three. A maximum number of patients referred for emergency obstetric care were having lower gravidity.

Thus, the maximum number of patients referred for emergency obstetric care was of lower parity. This is because of the higher incidence of Eclampsia/Pre-Eclampsia in primigravida, the

increased incidence of cesarean section, and its complications

Agarwal and Chaurvedi (2002) reported that nowadays trend for LSCS in primi is increasing[5]. Similar results for obstetric emergencies in primigravida are shown by Sharada et al (44%)[6], and Upadhyaya et al (39.62%) [7]. On the other hand, a study done by Shruti Mane et al[3], obstetric emergencies were more in multi gravida (52.1%)

Table 4: Distribution of cases according to gestational age (N=140)

	Gestational age	No.	Percentage
Antenatal period	\leq 12 weeks	05	3.6%
	13-24 weeks	04	2.9%
	25-36 weeks	36	25.7%
	37-42 weeks	90	64.3%
	\geq 42 weeks	00	0.0%
	Total	135	96.4%
Postnatal period	PND 0-7	4	2.9%
	PND 8-15	00	0.0%
	PND 16-42	00	0.0%
	Post abortion	01	1.4%
	Total	5	3.6%

As shown in Table 4 maximum number of cases recorded were antepartum emergency patients i.e., 96.4% followed by postpartum emergency (3.6%) of total obstetric emergency cases. In our study few patients presented with an emergency related to abortion. According to a study by Vidyadhar B. Bangal et al[4], 52% of emergencies happened during the antenatal period, 32% during labor and delivery, and the remaining 16% occurred after birth.

Table 5: Complications in previous Pregnancy (N=77)

Period	No.	Percentage
Antenatal		
Abruption	2	2.6%
Anaemia	10	13.0%

bleeding in pregnancy <28 weeks	6	7.8%
bleeding in pregnancy >28weeks	3	3.9%
cardiac disease	1	1.3%
diabetes mellitus	2	2.6%
hypertensive disease	7	9.1%
premature labour <37 completed weeks	3	3.9%
premature rupture of membranes	4	5.2%
urinary tract infection	3	3.9%
Ectopic Pregnancy	2	2.6%
None	34	44.1%
Intranatal		
intrapartum bleeding	2	2.6%
fetal distress	10	13.6%
Malpresentation	4	5.2%
obstructed labour	2	2.6%
prolonged labour	1	1.3%
None	58	75.3%
Postnatal		
post-partum haemorrhage	5	6.5%
puerperal sepsis	3	3.9%
retained placenta	1	1.3%
None	68	88.3%

As shown in Table 5 maximum number of complications in a previous pregnancy was recorded during the antenatal period i.e., 55.9% followed by the intranatal period (24.7%) and the postnatal period (11.7%) of total obstetric emergencies cases.

Table 6: Outcome of past pregnancies (N=77)

Outcomes	No.	Percentage
Abortion	15	19.5%
Stillbirth	1	1.3%
Live birth	58	75.3%
Death	3	3.9%

Of the outcomes of past pregnancies as shown in table 6, 75.3% were well babies, 1.3% were stillbirths, 19.5% were abortions, and 3.9% died.

Table 7: Mode of Delivery in a past pregnancy (N=77)

Mode of delivery	No.	Percentage
Pre-LSCS		
1	17	22.1%
2	14	18.2%
3	3	3.9%
Pre-ND		
1	34	44.2%
2	42	54.5%
3	9	11.7%

Table 7 shows 22.1%, 18.2%, and 3.9% of women in past pregnancy were delivered by previous 1 LSCS, previous 2 LSCS, and previous 3 LSCS respectively. Normal delivery of previous 1, 2, and 3 were 44.2%, 54.5%, and 11.7% respectively.

Table 8: Clinical Diagnosis of obstetric emergencies patients (n=140)

Clinical Diagnosis	No.	Percentage
APH	26	18.6%
MSL	19	13.6%
Preeclampsia	35	25.0%
Abortion	2	1.4%
Eclampsia	9	6.4%
Ectopic pregnancy	3	2.1%
Ruptured uterus	2	1.4%

Prolonged labour	2	1.4%
Obstructed labour	2	1.4%
Malpresentation	8	5.7%
Molar pregnancy	4	2.9%
Obsetric shock	4	2.9%
PPH	18	12.9%
Retained placenta	1	0.7%
Others*	3	2.1%
Sepsis	2	1.4%
Total	140	100.0%

*Hand prolapse, Foot prolapse, Compound presentation=no.1, 0.7%

The most common Clinical diagnosis among obstetric emergencies was pre-eclampsia (22.9%) followed by antepartum haemorrhage (22.1%), and post-partum haemorrhage (15.7%).

In a study done at Rift Valley PGH in 1998, non-reassuring fetal status (12.5%) was the most common diagnosis on admission while obstructed

labour and pre-eclampsia/eclampsia contributed to 9.6% and 8.2% respectively.

A study done by Shruti Mane et al in which the most common obstetric emergency was hypertension(eclampsia + severe preeclampsia) 44.19% followed by obstetric haemorrhage (16.28%)[3].

Table 9: Treatment Administrated on admission on women with obstetric emergencies (n=140)

Treatment given on admission		No.	Percentage
Medical	Antibiotics	125	89.3
	Anti-hypertensive	46	32.9
	Mgso4	09	6.4
	Prophylactic Mgso4	04	2.9
	Iv-fluids	90	64.3
	Blood transfusion	51	36.4
	Others (Lasix)	01	0.7
Surgical	D & E	03	2.1
	MVA	04	2.9
	Laparoscopy	01	0.7
	Augmentation and Induction of labour	16	11.4
	Emergency CS	68	48.6
	Laparotomy	02	1.4
	Cho square suture	01	0.7
	B-lynch suture	01	0.7
Obstetric Hysterectomy	07	5.0	

As shown in table 9 Medical and surgical interventions were done. Among medical treatment 89.3% antibiotics, 64.3% IV fluids, 36.4% blood transfusion, 32.9% anti-hypertensive, 6.4% Mgso4, and 2.95 prophylactic Mgso4 were given. Among the surgical management around 48.6% were prescribed to go under the emergency caesarean section on admission, about 11.4% were prescribed

induction of labour while a hysterectomy was done in 5.0%. Other surgical interventions like MVA, Cho square suture, laparotomy, and laparoscopy were done on one-one patients.

It gives a strong association between maternal mortality and blood availability, ensuring the availability of blood for prompt access to transfusion is warranted [8].

Table 10: Mode of delivery in current pregnancy of women with obstetric emergencies (n=130)

Mode of delivery	No.	Percentage
Spontaneous Vaginal Delivery	59	45.38%
Assisted Vaginal Delivery	03	2.31%
Caesarean Section	68	52.31%

As shown in figure 10, most patients (52.3%) delivered via emergency caesarean section while 45.4% had a spontaneous vaginal delivery and about 2.31% had assisted vaginal delivery. It is noted that in this study, the emergency caesarean

rate is high, indicating that this is a special group of patients who need timely intervention to prevent adverse maternal and fetal outcomes [9]. In this study, the finding of 2.31% assisted vaginal delivery indicates perhaps unnecessary caesarean

sections were carried out for cases where assisted vaginal delivery would have been indicated.

Table 11: On-admission condition of women with obstetric emergencies (n=140)

Condition	No.	Percentage
Stable	108	77.1%
Critical	32	22.9%

Table 11 shows the condition of women with obstetric emergencies on admission in which 77.1% were stable and around 22.9% were critical.

Table 12: Maternal outcome with obstetric emergencies (n=140)

Maternal outcome	No.	Percentage
Uneventful	88	62.9%
Fever	3	2.1%
Anaemia	16	11.4%
ICU Admission	3	2.1%
DIC	5	3.6%
Sepsis	8	5.7%
PPH	2	1.4%
CVA	6	4.3%
Death	6	4.3%
Others*	3	2.1%

Acute pulmonary oedema, PPE, press=1. Among the mothers referred to obstetric emergencies, around 63% had an uneventful outcome. 11.4% had significant anaemia while 5.7% developed sepsis. 6 maternal deaths were contributing to 4.3% and this was due to PPH, sepsis, obstructed labour,

pulmonary oedema and abruption with IUD. In comparison, a study done at Rift Valley PGH in 1998 reported that 92.3% of referrals had an uneventful immediate postpartum period while the postpartum maternal morbidity included febrile illness (3.1%) and genital injuries (1.2%)[10].

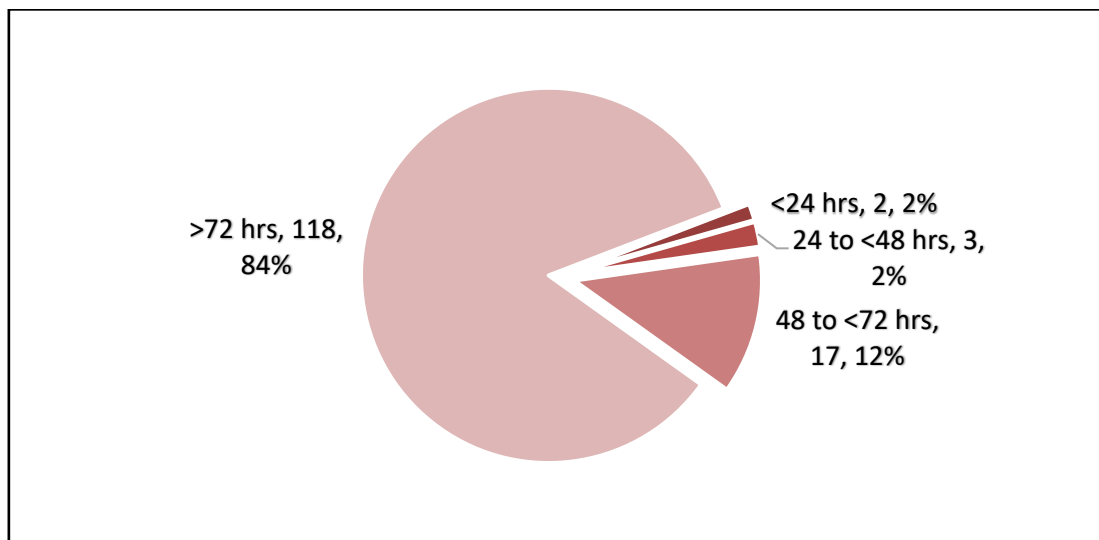


Figure 1: Duration of stay in hospital from admission to discharge

As illustrated in figure 1, 84% percent of the mothers' obstetric emergencies stayed in the hospital for 72 hours or more. While 4% of obstetric emergency mothers stayed in the hospital for <48 hours.

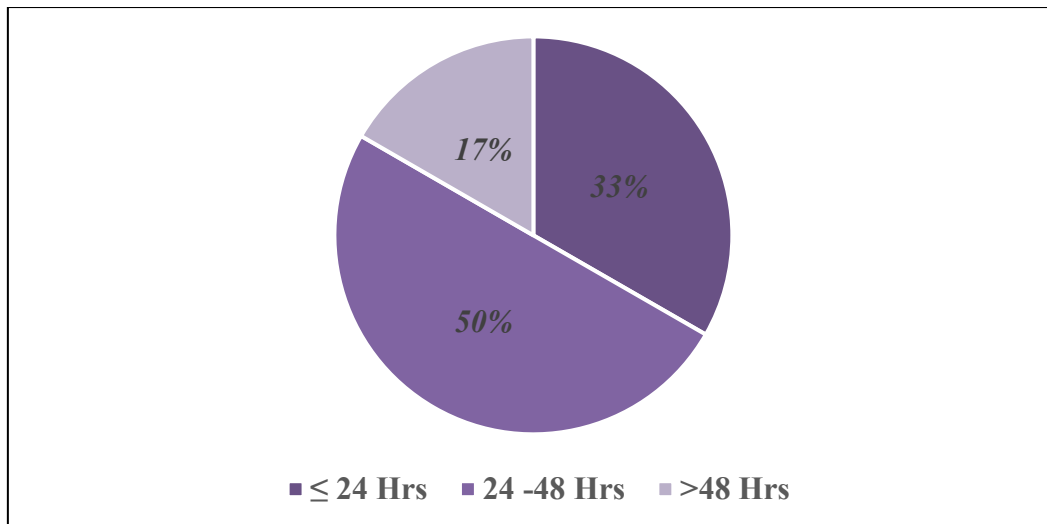


Figure 2: Duration from Admission to death of obstetric emergency patients

Conclusion

Obstetric emergencies are a significant cause of morbidity and mortality among pregnant women and their newborns. The management of these emergencies requires timely and appropriate intervention to improve maternal and fetal outcomes. In this study, we analysed the characteristics, interventions, and outcomes of obstetric emergency patients at our institution.

Our findings showed that the most common obstetric emergencies were Pre-eclampsia, antepartum hemorrhage, and post-partum hemorrhage. The majority of patients received medical and/or obstetrical and surgical interventions, with caesarean delivery being the most common surgical intervention. Overall, the maternal and fetal outcomes were favourable, with low rates of maternal morbidity and mortality.

However, there were some cases where the outcomes were not favourable, highlighting the need for ongoing quality improvement efforts to optimize the management of obstetric emergencies. One obstetric emergency can lead to a cascade of events that can lead to other consequences that leads to maternal mortality and morbidity. Though the government has planned strong networking between referring unit and referral center, still some lacunae were observed in reference status. So these factors can be targeted to improve obstetric care of emergency patients. Despite the availability of medical services, many patients have not registered anywhere. So factors needed to be reviewed are lack of seeking medical care by patients from outreach services

In conclusion, obstetric emergencies are a significant problem, and there is a need for improved access to antenatal care and emergency obstetric services to reduce maternal and neonatal morbidity and mortality. The management of

obstetric emergencies requires a multidisciplinary approach and timely intervention to improve maternal and fetal outcomes. Further research is needed to identify best practices and strategies to prevent and manage obstetric emergencies.

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