

# International Journal of Clinical Obstetrics and Gynaecology

ISSN (P): 2522-6614  
ISSN (E): 2522-6622  
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[www.gynaecologyjournal.com](http://www.gynaecologyjournal.com)  
2023; 7(5): 10-13  
Received: 11-08-2023  
Accepted: 19-09-2023

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## Retrospective analysis of obstetrical emergencies at a tertiary care centre in southern Rajasthan and associated maternal and perinatal outcome

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**DOI:** <https://doi.org/10.33545/gynae.2023.v7.i6a.1391>

### Abstract

**Aim:** To analyse obstetrical emergencies in the maternity ward at tertiary care centre in Southern Rajasthan and associated maternal and perinatal outcome retrospectively.

**Materials & Methods:** Retrospective evaluation of obstetric emergencies admitted at a tertiary care centre over a period of two years from September 2020 to August 2022 at Geetanjali medical college and hospital Udaipur district Rajasthan India was done. All pregnant woman who reported to hospital with the obstetric emergency during study period were enrolled in the study for analysis. Total patients enrolled in the present study were 260. Data was collected from indoor cases file, labour room registers and operation theatre records. Information regarding age, parity, duration of pregnancy, educational status, number of antenatal visits, nature of emergencies, treatment given, type of operative intervention, need of blood transfusion, post-operative maternal morbidity, mortality, perinatal outcome.

**Results:** Most common obstetric emergencies encountered in the present study were recorded and evaluated. Obstructed labour, fetal distress, postpartum haemorrhage and hypertensive disorder of pregnancy found to be present in 20.38percent, 19.62 percent, 13.85 percent and 15.38 percent of the subjects respectively. While assessing the fetal outcome, live birth was seen in 81.92 percent of the patients while perinatal mortality was seen in 18.07 percent of the patients. Maternal mortality was seen in 4.23 percent of the patients.

**Conclusion:** Obstructed labour, fetal distress, Postpartum haemorrhage and hypertensive disorder of pregnancy were the most common of obstetric emergency at our tertiary care centre. Timely intervention by a dedicated multi-disciplinary team can help in reducing maternal and fetal mortality.

**Keywords:** Obstetrical, maternal, perinatal

### Introduction

One of the priorities of the health care system across the globe is to reduce the maternal and neonatal mortality and morbidity. Most maternal and neonatal deaths and stillbirths occur during or immediately after childbirth. With an increasing number of births now occurring at a healthcare facility even in low- and middle-resource settings, current strategies focus on improving the quality of care during this critical period<sup>[1, 2]</sup>. The management of emergencies is usually the responsibility of hospital obstetricians. As more maternity care is now given in the community, however, midwives, general practitioners, and paramedics may be involved and must know the outlines of management of emergencies and the possible side effects<sup>[3]</sup>.

India contributes one- fifth of global burden of absolute maternal deaths. Obstetric emergencies are the leading causes of maternal mortality worldwide and particularly in developing countries where low literacy rate, poverty, lack of antenatal care, poor transport facilities and insufficient medical infrastructure, inadequate staff combine to magnify the problem. Government of India, through National Rural Health Mission (NRHM) has launched an “EmOC” (Emergency Obstetric Care) program. In order to achieve the difficult target of Millennium development goal-5 (MDG), 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<sup>[4-6]</sup>. Hence; under the light of above mentioned data, the present study was undertaken for assessing obstetrical emergencies in the maternity ward at tertiary care centre in south Rajasthan and its maternal and perinatal outcome.

## Materials & Methods

The present study was conducted with the aim of evaluating the obstetrical emergencies in the maternity ward at tertiary care centre in south Rajasthan and its maternal and perinatal outcome. Ethical approval was obtained from institutional ethical committee in written after explaining in detail the entire research protocol. Retrospective evaluation of obstetric emergencies admitted at tertiary care centre over a period of two years from September 2020 to August 2022 at Geetanjali medical college and hospital Udaipur district Rajasthan India was done. All pregnant woman who reported to hospital with the obstetric emergency during study period were enrolled in the study for analysis. Depending upon the nature and severity of the problem, cases admitted to labour room, eclampsia room and critical care unit or in the antenatal ward. Total patients enrolled in the present study were 260. Data was collected from indoor cases file, labour room registers and operation theatre records. Information regarding age, parity, duration of pregnancy, educational status, number of antenatal visits, nature of emergencies, treatment given, type of operative intervention, need of blood transfusion, post-operative maternal morbidity, mortality, perinatal outcome. All the results were recorded in Microsoft excel sheet and were subjected to statistical analysis using SPSS software.

## Results

Assessment of a total of 260 subjects was done, most of the cases were booked and multigravida. 18.46 percent were referred from surrounding nursing home, PHC's and health worker. Most common obstetrical emergencies encountered were obstructed labour, fetal distress, postpartum haemorrhage and hypertensive disorder of pregnancy found to be present in 20.38 percent, 19.62 percent, 13.85 percent and 15.38 percent of the subject respectively. Other cases include eclampsia, antepartum haemorrhage, Puerperal sepsis and ruptured uterus found to be present in 9.62 percent, 10 percent, 4.62 percent and 3.46 percent of the patient respectively. Most common mode of delivery was spontaneous and induced vaginal delivery (77.98 percent). Overall maternal mortality was seen in 4.23 percent of the patient, it was seen that eclampsia was the most common cause in 45.45 percent of the patient. While assessing the fetal outcome, live birth was seen in 81.92 percent out of which 13.84 percent were shifted to NICU and 68.07 percent were shifted to mother side. Perinatal mortality was seen in 18.07 percent of the patient, in which fresh still borne was 2.3 percent, IUD was in 9.23 percent and early neonatal death was seen in 6.53 percent of the patient.

**Table 1:** Total Number of Booked and Un-booked cases

Parameters	N	%
<b>Types of case</b>		
Booked	188	72.3
Un-booked	72	27.69
Total	260	100
<b>Admission</b>		
Direct admissions	212	81.53
Referred cases	48	18.46
<b>Parity wise</b>		
Primi	83	31.92
Multi	177	68.07

**Table 2:** Distribution of subjects according to obstetric emergencies

Obstetric emergencies	Number	Percentage
Obstructed labour	53	20.38
Fetal distress	51	19.62
Postpartum haemorrhage	36	13.85
Hypertensive disorder of pregnancy	40	15.38
Eclampsia	25	9.62
Antepartum haemorrhage	26	10
Puerperal sepsis	12	4.62
Ruptured uterus	9	3.46
Others	8	3.08
Total	260	100

**Table 3:** Mode of Delivery

Mode of Delivery		N	%	
Vaginal	Spontaneous & induced	124	77.98	
	Assisted	Forcep	9	5.66
		Brech	26	16.35
Total		159	100	
Caesarean	Elective	34	34.69	
	Emergency	64	65.30	
Total		98	100	
Caesarean Hystrectomy		3		

**Table 4:** Type of intervention

Type of Intervention	N	%
Manual Removal of placenta	15	5.76
BT & medical management of PPH	27	10.38
MgSO <sub>4</sub> Therapy	41	15.76
Perineal troma	7	2.69
Peripartm Hyst	4	1.53
<b>ICU Admission</b>		
Yes	54	20.76
No	206	79.23
<b>Outcome</b>		
Meternal Death	11	4.23
Discharged Cases	249	95.76
Near Miss Mortality	7	2.69

**Table 5:** Fetal Outcome and perinatal mortality

Fetal Outcome and perinatal mortality			
Fetal Outcome		N	%
Live Birth	Mother side shift	171	68.07
	NICU Shift	36	13.84
	Total	213	81.92
Perinatal Mortality	IUD	24	9.23
	Fresh Stillborn	6	2.3
	Early Neonatal Death	17	6.53
	Total	47	18.07

**Table 6:** Causes of maternal mortality

Causes of Maternal mortality	Number	Percentage
Eclampsia	5	45.45
PPH	3	27.27
APH	2	18.18
Sepsis	1	9.09
Total	11	100

## Discussion

An emergency can be defined as a situation of serious and often dangerous nature, developing suddenly and unexpectedly and demanding immediate attention in order to save life. 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. Obstetric emergencies are the leading causes of maternal mortality worldwide and particularly in developing countries where literacy, poverty, lack of antenatal care, poor transport facilities and inadequate equipment/staffing combine to magnify the problem [7, 8]. The causes of maternal deaths are generally known. Antepartum and post-partum haemorrhage, obstructed labour, severe pre-eclampsia or eclampsia, complications related to abortion, uterine rupture and postpartum sepsis are the direct obstetric complications (DOC) that account for more than 80% of maternal deaths. Complications from preterm births, intrapartum-related disorders or birth asphyxia, and infections are few of the significant causes of perinatal deaths across the globe [9, 10]. Hence; under the light of above-mentioned data, the present study was undertaken for assessing obstetrical emergencies in the maternity ward at tertiary care centre in south Rajasthan and its maternal and perinatal outcome.

In the present study, mean age of the subjects was 29.4 years with 68.08 percent of the subjects being of multi-gravid status. Our results were in concordance with the results obtained by Teng S *et al.*, who reported that 60 percent of the subjects were of multi-gravid status [11]. In another study conducted by Mustafa Adelaja L *et al.*, mean age of the subjects with obstetrical emergencies was 30 years [12].

In the present study, most common obstetric emergencies encountered in the present study were obstructed labour, fetal distress, postpartum haemorrhage and hypertensive disorder of pregnancy found to be present in 20.38percent, 19.62 percent, 13.85 percent and 15.38 percent of the subjects respectively. Other causes included eclampsia, antepartum haemorrhage, Puerperial sepsis and Ruptured uterus found to be present in 13.85 percent, 9.62 percent, 10 percent, 4.62 percent and 3.46 percent of the patients respectively. Our results were in concordance with the results obtained by previous authors who also reported similar findings. In a study conducted by Singh *et al.*, Out of 160 obstetric emergencies, the commonest one was obstetric haemorrhage of which 35 cases were abruptio placentae, 23 cases were postpartum haemorrhage, 30 cases were eclampsia, 19 cases placenta previa, 10 cases retained placenta, 2 cases rupture uterus, 5 cases ectopic pregnancy, 1 case septic abortion, 3 cases cord prolapse, 3 cases hand prolapse & 29 cases were obstructed labour [13]. Mustafa Adelaja L *et al.*, in another previous study reported that the leading emergencies were obstructed labour, postpartum haemorrhage, fetal distress, severe pregnancy-induced hypertension/eclampsia and antepartum haemorrhage (Placental praevia/abruptio placenta). Other important types of emergencies include puerperial sepsis, ruptured uterus and retained second twin [12]. In the present study, while assessing the fetal outcome, live birth was seen in 81.92 percent of the patients while perinatal mortality was seen in 18.07 percent of the patients. Overall, maternal mortality was seen in 4.23 percent of the patients. While assessing the 11 patients with maternal mortality, it was seen that eclampsia was the major cause in 45.45 percent of the

patients. PPH and APH were the causes in 27.27 percent and 18.18 percent of the patients. Sepsis was the cause in the 1 patient. Similar results were observed in the study conducted by Teng *et al.* in their study, out of 194 deliveries, the live births occurred in 68%, perinatal mortality occurred in 29% cases. Prematurity was present in 28% cases, while IUGR was present in 7%, congenital anomalies were in 1.5% cases. In their study, eclampsia/preeclampsia (47.6%) was leading cause of maternal mortality followed by PPH (28.6%) and APH (9.5%). Sepsis leads to 9.5% of maternal death. Indirect cases where severe anemia in 3 cases, pulmonary edema in 5 cases, ARDS in 2 cases and ARF in 1 case [11]. In another study conducted by Singh *et al.*, authors evaluated the risks factors, clinical presentations, the management and maternal and fetal outcome of common obstetric emergencies. Out of 3000 deliveries there were 160 cases of obstetric emergencies giving a percentage of 5.33%. About 84% had antenatal care and 16% had not taken ANC with perinatal mortality of 91.9% in booked cases. Out of 160 cases of obstetric emergencies, obstetric haemorrhage constituted 94 (58.75%) cases and among those cases, 23 cases (24.5%) were PPH including both atonic and traumatic, abruptio placenta constituted 35 cases (37.3%). Out of 160 cases of obstetric emergencies, obstructed labour constituted 29 cases (18.1%) being a frequent indication for emergency caesarean section, 1 case of septic abortion and 30 cases eclampsia. 29 perinatal deaths giving the perinatal mortality rate as 181 per 1000 live births [13].

### Conclusion

Obstructed labour, fetal distress, Postpartum haemorrhage and hypertensive disorder of pregnancy were the most common of obstetric emergency at our tertiary care centre. Timely intervention by a dedicated multi-disciplinary team can help in reducing maternal and fetal mortality, proper training of field medical staff regarding knowledge of the physiological mechanism of childbirth with proper monitoring of labour by partogram.

Early diagnosis of complication and prompt evaluation also improves maternal and fetal outcome.

### Conflict of Interest

Not available

### Financial Support

Not available

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#### How to Cite This Article

Rathore M, Upadhyay S. Retrospective analysis of obstetrical emergencies at a tertiary care centre in southern Rajasthan and associated maternal and perinatal outcome. *International Journal of Clinical Obstetrics and Gynaecology* 2023; 7(6): 10-13

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