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Maternal and perinatal outcome in obstetrical emergencies at Lal Ded hospital, Srinagar

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Abstract
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 required-critical care management, and its impact on future outcome of such admissions and to analyze the maternal and perinatal outcome of such obstetric emergencies.
Material and Methods: 200 cases of obstetric emergencies admitted and treated at Lal Ded Hospital, Srinagar, during the study period in 2019. It is a clinical study of maternal and perinatal outcome irrespective of gestational period, parity and medical complications.
Results: The majority of obstetric emergencies were in the age group between 20-30 years, 50% were multigravida, 15.5% were primi gravida, 10% were grand multi gravida. In this 68% were referred cases 32% were directly admitted. Fetal distress was in 30.5%, fetal demise in 11%, most common obstetric emergency was obstetric hemorrhage in 65.5% cases, 49.5% were delivered by normal vaginal delivery, laparotomy in 6.5%, ICU admission in 32.3%, live births in 68%, perinatal mortality 29%, maternal mortality in 10.5%.
Conclusion: The obstetric emergency has a profound effect on mother and fetus resulting in high maternal and perinatal morbidity and mortality. Peripartum hemorrhage, hypertensive emergencies are the leading causes.

Keywords: maternal, obstetric emergencies, perinatal outcome

Introduction
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 [1]. 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. According to World Health Organization (WHO) estimates, it varies up to 100-fold, from approximately 10 in developed countries to approximately 1,000 in least developed [2, 3] Globally 2, 89,000 maternal deaths occurred in 2013, a decline of 47% from levels in 1990. India contribute one- fifth of global burden of absolute maternal deaths [4]. 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 in adequate equipment/staffing combine to magnify the problem [5, 6]. 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. With this background, a study was carried out to understand the incidence and nature of obstetrical emergencies and their maternal and perinatal outcome at our hospital

Materials & Methods
Source of data: 200 cases of obstetric emergencies admitted and treated in Lal Ded Hospital, Srinagar, during the study period in 2019.

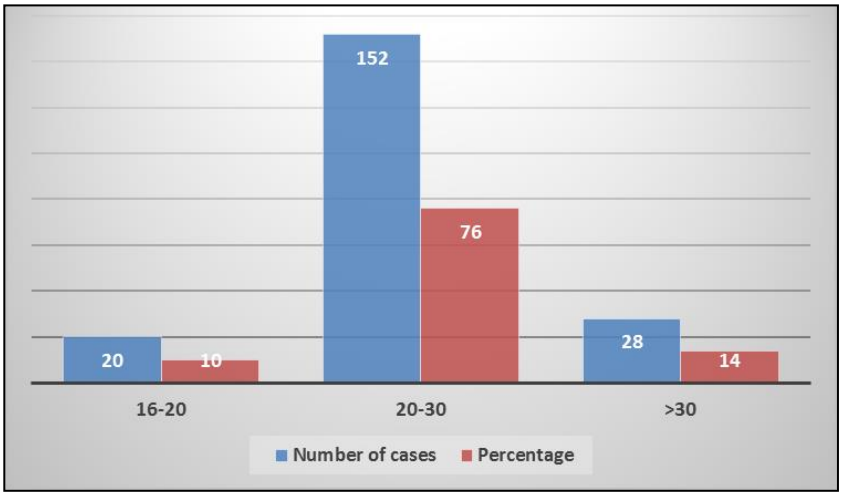
Inclusion criteria: Pregnant women irrespective of gestational period, and/or within 42 days of delivery admitted Cases with singleton or multiple pregnancies, cases with obstetric

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 and heart disease. The obstetric emergencies were analyzed in 200 cases. Social and maternal factors in relation to etiology, clinical features, mode of management and maternal and fetal outcome and preventive aspects were studied.

Table 1: Obstetric Emergencies in Various Age Groups

S. No	Age group in yrs	Number of cases	Percentage
1	16-20	20	10
2	20-30	152	76
3	>30	28	14
	Total	200	100

The majority of obstetric emergencies were in the age group between 20-30 yrs of age

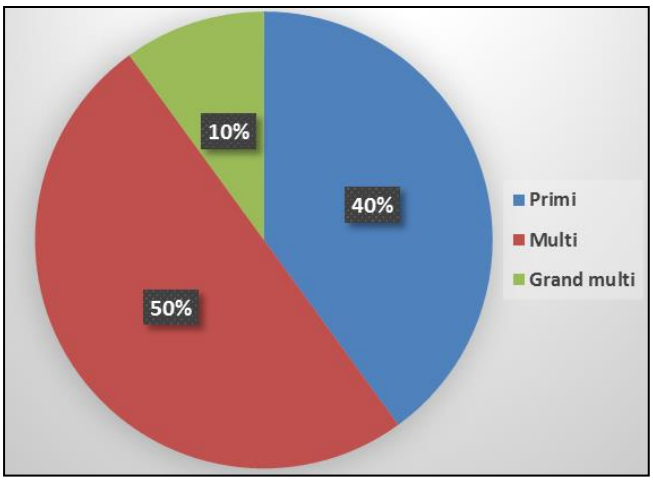


Graph 1: Obstetric Emergencies

Table 2: Parity

S. No	Gravidity	Number of cases	Percentage
1	Primi	80	40
2	Multi	100	50
3	Grand multi	20	10
	Total	200	100

The majority of cases 50% were multi gravida, 40% were primigravida, 10% were grand multi gravida

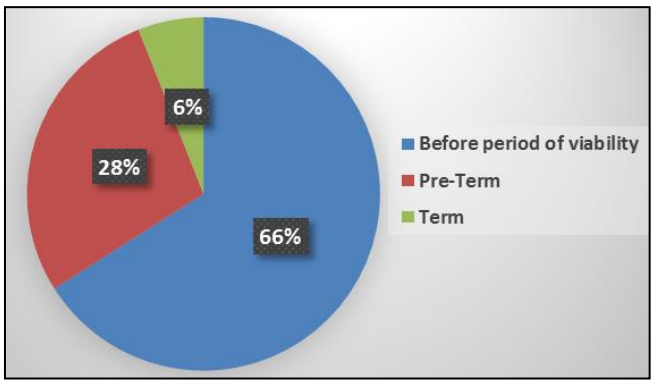


Graph 2: Parity

Table 3: Gestational Age Group

S. No	Gestational Age	Number of Cases	Percentage
1	Before period of viability	132	66
2	Pre-Term	56	28
3	Term	12	6
	Total	200	100

The majority were term pregnancies in 132 cases (66%), preterm in 56 cases (28%). There were 12 cases before period of viability



Graph 3: Gestational Age Group

Table 4: ANC Registrations

S. No	ANC Registration	No. of Cases	Percentage
1	Booked	83	41.5
2	Un-Booked	117	58.5
	Total	200	100

Majority of cases 117(58.5%) were un-booked

Table:5 Urban and rural distribution

S. No	Distribution	No. of Cases	Percentage
1	Urban	31	15.5
2	Rural	169	84.5
	Total	200	100

The majority were from Rural area, 165 cases (84.5%) and in urban area 31 cases (15.5%).

Table 6: Educational status

S. No	Education	No. of cases	Percentage
1	High school	49	24.5
2	Primary school	92	48
3	Illiterate	69	34.5
	Total	200	100

The majorities were in low educational status-educated upto v to primary school level in 92 cases (48%), High school level in 49 cases (24.5%) and Illiterate in 69 cases (34.5%).

Table 7: Number of referred cases

Status	No. of cases	Percentage
Referred	136	68
Direct admission	64	32
Total	200	100

The majority was referred cases 68% and 32% were admitted directly.

Table 8: Fetal conditions at admission

S. No	Fetal condition	No. of Cases	Percentage
1	Fetal distress	61	31.44
2	Fetal demise	22	11.34
3	Good	111	57.21
	Total	194	100.00

Fetal distress was present in 31.4% cases and fetal demise in 11.3% cases at admission

Table 9: Mode of deliveries

S. No	Mode of delivery	Number of cases	Percentage
	Abdominal		
1	Emergency LSCS	83	41
2	Laparotomy-in Rupture uterus	9	4.5
Vaginal deliveries			
1	Outlet forceps	13	6.5
2	FTNVD	47	23.5
3	PTNVD	39	19.5
4	Undelivered	3	1.5
5	Abortion	6	3
	Total	200	100

The majority of cases were delivered by normal vaginal delivery in 49.5%cases and by laparotomy in 6.5% cases. Vaginal delivery was in 43%, instrumental delivery in 6.5%, remained undelivered in 1.5% cases.

Table 10: Indications for ICU Admission

S. No	Indication	No. of cases	Percentage
1	Eclampsia/severe PE	11	19.3
2	Pulmonary edema	9	15.79
3	Sepsis	1	1.75
\4	CCF	6	10.53
5	DIC	4	7.02
6	Hemorrhagic shock	20	35.09
7	ARDS	6	10.53
	Total	57	100

Most common cause for ICU admission was hemorrhagic shock in 35% and second most common cause was Eclampsia in 19.3%.

Table 11: Duration of stay in hospital

S. No	Duration of hospitalization	No. of cases	Percentage
1	0-10	63	31.5
2	10-20	103	51.5
3	20-30	31	15.5
4	More than 30 days	3	1.5
	Total	200	100

The majority of the cases discharged within 10-20 days in 51.5%, 0-10 days in 31.5%, more than 30 days in 1.5% cases.

Table 12: Fetal outcome

S. No	Duration of hospitalization	Number of cases	Percentage
1	Live birth	136	68
2	Perinatal mortality	58	29
3	IUD	22	
	Fresh still born	13	
	Early neonatal death	23	
4	Prematurity	56	28
5	IUGR	14	7
6	Congenital anomalies	3	1.5

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.

Table 13: Causes of maternal mortality

S. No	Causes	No. of cases	Percentage
1	Eclampsia/preeclampsia	10	47.6
2	PPH	6	28.6
3	APH	2	9.5
4	Heart disease	1	4.8
5	Unsafe abortion	1	4.8
6	Uterine inversion	1	4.8
7	Sepsis	2	9.5
	Total	21	100

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.

Discussion

200 obstetric emergency cases admitted were analyzed as per inclusion criteria. The obstetric and perinatal outcomes were studied in relation to social and maternal factors affecting the outcome. It was noticed that, once an obstetric emergency occurs, it is likely to lead to another obstetric emergency in the same patient.

Table 14: Obstetric emergencies in various age groups

According to age	Below 20 (%)	21-30 yrs (%)	31-40 yrs (%)
N.Catherine *et al.* [7]	16.5	80.4	3.1
Sharada *et al.* [8]	5	79	16
Present study	10	76	14

In this study majority of obstetric emergencies were in the age group between 21-30yrs, according to Catherine *et al*, & Sharada *et al* also showed majority of cases belong to 21-30 yrs of age group.

Table 15: Distribution of cases according to parity

According to parity	Primi gravida (%)	Multi gravida (%)	Grand multi gravida (%)
Sharada *et al*. [8]	44	47	9
Upadhyaya *et al*. [9]	39.62	49.06	8.8
Present study	40	50	10

In this study the obstetric emergencies were more in multi gravida according to Sharada *et al* and Upadhyaya *et al* also showed majority of obstetrical emergencies in multi gravida.

Table 16: ANC registration

Studies	Booked (%)	Un booked (%)
Lamina Mustafa *et al.* [10]	39.7	60.3
Upadhyaya *et al.* [9]	37.11	62.89
Present study	41.5	58.5

In this study 41% were booked cases, 58.5% were un booked cases. In another studies, Lamina Mustafa *et al* and Upadyaya *et al*so showed majority of cases were un booked.

Table 17: Indications for ICU admissions & comparison with other studies

Reason for admission	Bekele Afesee *et al*.	Saha R *et al*. [11]	Present study
Pulmonary edema	18(24%)	3(6%)	9(14.5%)
Hemorrhagic shock	7(9%)	7(14%)	20(32.3%)
Sepsis	8(11%)	2(4%)	1(1.6%)
Hypertension	4(5%)	13(26%)	11(17.7%)
Cardiac condition	4(5%)	8(16%)	6(9.7%)
Respiratory insufficiency	16	4(8%)	6(9.7%)

Majority of cases admitted to ICU in view of hemorrhage 32% followed by hypertensive disorders 17.7%
In Bekele Afesse *et al*. pulmonary edema 24% was the indirect cause and in Saha R *et al* hypertensive 26% was the common cause for the ICU admission

Table 18: Comparison of obstetric emergencies encountered with other studies

Obstetric emergencies	Sangeetha Guptha *et al*. [12]	Lamina Mustafa *et al*. [10]	Upadhyaya *et al*. [9]	Present study
Obstetric Haemorrhage	28%	21.7%	27%	43%
Severe pre-eclamsia	20.5%	8.8%	27.04%	8.5%
Eclampsia	-	8%	10%	16%
Ruptured uterus	-	4.6%	1.89%	9%
Sepsis	3.5%	6.1%	10.69%	3%
Uterine inversion	-	0.4%	-	0.5%
Malpresentation	-	-	-	7%
Severe anaemia	11.8%	0.8%	-	3.5%
Cardio-myopathy	-	-	-	1.26%
Other medical causes	10.4%	-	6.3%	9%

Most common obstetrical obstetrical emergency in our study was obstetric hemorrhage 43% In Sangeetha Guptha *et al*, Lamina Mustafa *et al*, and Upadhyaya *et al*, obstetric hemorrhage and severe pre eclampsia were most common

Table 19: Admission to death interval

Time	Namratha Shrivastava *et al*. [13]	Present study
Within 12 hrs	26(49.06%)	11(64.7%)
12-24hrs	13(24.53%)	2(11.8%)
24-72 hrs	8(15.09%)	4(23.5%)
->72 hrs	6(11.32%)	4(23.5%)
Total	21	100

If timely Interventions taken in the first 12 hrs of admission prove to be set point for further management and progression of the condition. Death occurred within 12 hrs of admission in 64.7% cases in according to Namratha Shrivastava *et al* 49.06% deaths occurred within 12 hrs, less deaths in>72 hrs. Subsequent morbidity and mortality Rates subside with progression

Conclusion

The obstetric emergency has a profound effect on the mother and fetus resulting in high maternal and perinatal morbidity and mortality. Peripartum hemorrhage and hypertensive emergencies are the leading causes of maternal mortality and morbidity worldwide. Health education is to pregnant women about maternal health services and its proper implication. Early ANC booking and regular Antenatal checkups. Minimum 4 checkups for normal pregnancy and 10 checkups for high risk Pregnancy at regular intervals. Availability of communication and transport facilities provision for blood transfusion facilities around the clock. The maternal mortality rates in low- income countries remain unacceptably high, and many of these deaths are likely to be preventable. Providing adequate and accessible health-care services and education of community birthing assistants 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 at national and international level.

Compliance with Ethical Requirements

Ethical committee approval was obtained.

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