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A Study of Obstetric Emergencies and Its Foeto-Maternal Outcome in a Tertiary Care Centre

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Abstract: ***Objectives: To identify obstetric cases as emergencies needing critical care. To study the effect of these obstetric emergencies on the mother and foetus. Material and Methods: A retrospective study was conducted in the department of Obstetrics and Gynaecology at MGM Medical College and Hospital, Kalamboli. 473 obstetric emergencies were admitted and treated during the study period from June 2016 to June 2018. It is a clinical study of maternal and perinatal outcome irrespective of gestational period, parity and medical complications. The outcomes noted were the type of emergency, obstetric intervention done, maternal/foetal mortality and morbidity. Results: A total of 6550 deliveries were conducted during the study period. A total of 473(7.2%) obstetric emergencies occurred. The most common obstetric emergencies were, severe preeclampsia (26.85%), eclampsia (17.34%)and obstetric hemorrhage (16.28%). The obstetric interventions done were cesarean section (24.10%), exploratory laparotomy (6.13%). Obstetric emergencies were responsible for 4.86% of total maternal death and 13.96% of total perinatal death. Conclusion: Obstetric emergencies have a profound effect on mother and fetus resulting in high maternal/perinatal morbidity and mortality. The management of one affects the management of the other. Peripartum haemorrhage and hypertensive emergencies are two of the leading causes of maternal mortality worldwide.***

Keywords: Maternal, Obstetric Emergencies, Perinatal outcome

1. Introduction

An "OBSTETRIC EMERGENCY" is defined as an obstetric complication which is serious and often dangerous in nature, developing suddenly or unexpectedly and demanding immediate attention in order to save lives[1].

No specialty of medicine is more inundated with emergencies than obstetrics is[2]. While most child- birth related complications allow time for proper management, a few present as obstetric emergencies where successful outcome depends on prompt action, systematic rapid and management[1-4].

These emergencies are not only encountered in perinatal period as post–partum hemorrhage, ruptured uterus, retained placenta, etc. but also in early pregnancy as ruptured ectopic, complications of abortion, antepartum haemorrhage and ante-partum eclampsia all being potentially fatal[1-4]. As per World Health Organization "Obstetrical Emergencies" are the leading causes of maternal mortality, particularly in developing countries due to lack of awareness, poverty, illiteracy, poor transport facilities, inadequate equipment/staffing. These all combine to elaborate the problem[5]. Though measures to reduce maternal mortality have decreased the rate worldwide but still the rates are high in developing countries according to WHO[6].Maternal health status is assessed through measurement of mortality and morbidity.

Since the declaration of the Millennium Development Goals (MDGs) in 2000, the 5th MDG goal, Reproductive Health, has been recognized as fundamental for human development. 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 retrospective study was carried out to understand the incidence and nature of obstetrical emergencies and their maternal and perinatal outcomes at a tertiary care centre.

2. Material and Methods

The present study was conducted on a retrospective basis from June 2016 to June 2018 in the department of Obstetrics and Gynecology at MGM Hospital, Kalamboli.

The cases included were:

Pregnant women irrespective of gestational period, and/or within 42 days of delivery were included.

Cases with singleton or multiple pregnancies.

Cases with obstetric emergencies in labour such as malpresentations, malpositions, deep transverse arrest, obstructed labour, antepartum hemorrhage, cordprolapse, preeclampsia, eclampsia, rupture uterus, inversion of uterus.

Cases with obstetric emergencies in 3rd stage of laboursuch as retained placenta, postpartum hemorrhage, postpartum collapse, cases referred from peripheries.

3. Results

A retrospective study was carried out for a period of two years from June 2016 to June 2018 in the department of Obstetrics and Gynaecology at MGM Medical College and Hospital, Kalamboli. A total of 6550 deliveries were conducted during this period. Obstetric emergencies were managed in 473 cases Social and maternal factors in relation to etiology, clinical features, mode of management and maternal and fetal outcome and preventive aspects were studied.

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Table 1: Distribution of Obstetric Emergencies in different age groups

SR. NO.	AGE IN YEARS	NUMBER OF CASES	PERCENTAGE
1	16-20	67	14.16%
2	21-30	329	69.56%
3	>30	77	16.28%

Majority of the cases were in the age group of 20-30 years.

Table 2: distribution of obstetric emergencies on the basis of parity

SR. NO.	GRAVIDA	NUMBER OF CASES	PERCENTAGE
1	Primi	131	27.70%
2	Multi	246	52.01%
3	Grandmulti	96	20.30%

52.01% of cases were multigravidas, 27.70% were primi's, 20.30% weregrandmulti's

Table 3: distribution of obstetric emergencies according to gestational age

SR. NO.	GESTATIONAL AGE IN WEEKS	NUMBER OF CASES	PERCENTAGE
1	Before Period Of Viability	27	5.71%
2	Preterm	164	34.67%
3	Term	282	59.62%

Majority of the cases were term pregnancies 59.62%, 34.67% were preterm, whereas 5.71% were before the period of viability.

Table 4: distribution on basis of ANC registration

SR. NO.	ANC REGISTRATION	NUMBER OF CASES	PERCENTAGE
1	Registered	177	37.42%
2	Un-Registered	296	62.58%

Majority of the cases were unregistered 296(62.58%).

Table 5: distribution on basis of referrals

SR. NO.	STATUS	NUMBER OF CASES	PERCENTAGE
1	Referred	287	60.68%
2	Direct Admissions	186	39.32%

MGM Medical college and Hospital, Kalamboli is a tertiary care hospital and referral centre. Thus the number of referred cases were high.

Table 6: Distribution of obstetric emergencies on basis of diagnosis

SR. NO.	OBSTETRIC EMERGENCIES	NUMBER OF CASES	PERCENTAGE
1	Pre-Eclampsia	127	26.85%
2	Eclampsia	82	17.34%
3	Cord Prolapse	12	2.54%
4	Placenta Praevia	41	8.67%
5	Deep Transverse Arrest	16	3.38%
6	Compound Presentation	11	2.33%
7	Shoulder Dystocia	8	1.69%
8	Abruptio Placentae	44	9.30%
9	Retained Placenta	7	1.48%
10	Post Partum Haemorrhage	77	16.28%
11	Puerperal Sepsis	5	1.06%
12	DIC	6	1.27%
13	Uterine Rupture	4	0.85%
14	Inversion Of Uterus	2	0.42%
15	Heart Disease	2	0.42%
16	Viral Hepatitis	3	0.63%
17	H1N1Positive	3	0.63%
18	Ectopic Pregnancy	23	4.86%

Most common obstetric emergencies managed at MGM hospital were pre-eclampsia 26.85% and eclampsia 17.34% followed by obstetric haemorrhage 16.28%.

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Table 7: Management of the cases

SR. NO.	MANAGEMENT	NUMBER OF CASES	PERCENTAGE
1	Conservative(undelivered)	49	10.36%
2	Vaginal Deliveries	262	55.39%
3	Emergency LSCS	114	24.10%
4	Laparotomy With Salpingectomy And/ Or Oophorectomy	23	4.86%
5	Laparotomy With Subtotal Hysterectomy	4	0.85%
6	Laparotomy With Uterine Repair	2	0.42%
7	Cesarean Hysterectomy	6	1.27%
8	Exploration Under Anaesthesia	6	1.27%
9	Manual removal of placenta	7	1.48%

Table 8: Indication of the cases for ICU admissions

SR. NO.	INDICATION	NUMBER OF CASES	PERCENTAGE
1	Eclampsia	13	21.31%
2	Severe Pre-Eclampsia	11	18.03%
3	Pulmonary Edema	7	11.48%
4	Sepsis	3	4.92%
5	CCF	2	3.28%
6	DIC	3	4.92%
7	Haemmorhagic Shock	19	31.15%
8	ARDS	3	4.92%
9	Total	61	100.00%

Most common cause for ICU admission was hemorrhagic shock in 31.15% and second Eclampsia in 21.31%.

Table 9: Underlying causes of maternal mortality

SR. NO.	OBSTETRIC EMERGENCIES	NUMBER OF CASES	PERCENTAGE
1	Severe Pre-Eclampsia	2	8.70%
2	Eclampsia	3	13.04%
3	APH	1	4.35%
4	Abortion Related Complications	0	0.00%
5	Post Partum Haemorrhage	9	39.13%
6	Puerperal Sepsis	2	8.70%
7	DIC	3	13.04%
8	Uterine Rupture	0	0.00%
9	Inversion Of Uterus	0	0.00%
10	Heart Disease	1	4.35%
11	Viral Hepatitis	2	8.70%
12	Ectopic Pregnancy	0	0.00%
13	Total	23	100.00%

Most common cause of maternal mortality was obstetric haemorrhage 39.13% followed by eclampsia 13.04%.

Table 10: Foetal outcome for the obstetric emergencies

SR. NO.	FOETAL OUTCOME	NUMBER OF CASES	PERCENTAGE
1	Live births	276	68.83%
2	IUD	32	7.98%
3	Fresh Still Birth	13	3.24%
4	Early Neonatal Death	11	2.74%
5	IUGR	22	5.49%
6	Prematurity	47	11.72%

Out of 401 deliveries, the live births occurred in 68.83%, perinatal mortality occurred in 13.96% cases,. Prematurity was present in 11.72% cases, while IUGR was present in 5.49 %.

4. Discussion

There were a total of 6, 550 deliveries conducted during this study period. In that 473 of obstetric emergency cases admitted were observed. The obstetric and perinatal outcomes were studied in relation to 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.

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Table 11: Comparison of obstetric emergencies in various age groups

SR.NO.	ACCORDING TO AGE	BELOW 20(%)	21-30 YRS (%)	31-40 YRS (%)
1	N.Catherine et al[7]	16.5	80.4	3.1
2	Sharada et al[8]	5	79	16
3	Karuna et al[9]	10	76	14
4	Present Study	14.16	69.56	16.28

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

Table 12: Comparison of cases according to parity

SR.NO.	ACCORDING TO PARITY	PRIMI GRAVIDA (%)	MULTI GRAVIDA (%)	GRAND MULTI GRAVIDA (%)
1	Sharada et al[8]	44	47	9
2	Upadhyaya et al[10]	39.62	49.06	8.8
3	Karuna et al[9]	40	50	10
4	Present Study	27.70%	52.01%	20.30%

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

Table 13: Comparison on the basis ofANC registration

SR.NO.	STUDIES	BOOKED	UN BOOKED (%)
1	Lamina Mustafa et al[11]	39.7	60.3
2	Upadhyaya et al[10]	37.11	62.89
3	Karuna et al[9]	41.5	58.5
4	Present Study	37.42%	62.58%

In this study 37.42% were booked cases, 62.58% were un booked cases. In another studies, Lamina Mustafa et al, Upadyaya et al and Karuna et al also showed majority of cases were un booked.

Table 14: Indications for ICU admissions & comparison with other studies

SR.NO.	REASON FOR ADMISSION	BEKELE AFESEE ET AL	SAHA R ET AL[12]	KARUNA ET AL[9]	PRESENT STUDY
1	Pulmonary edema	18(24%)	3(6%)	9(14.5%)	7(11.48%)
2	Hemorrhagic Shock	7(9%)	7(14%)	20(32.3%)	19(39.15%)
3	Sepsis	8(11%)	2(4%)	1(1.6%)	3(4.92%)
4	Hypertension	4(5%)	13(26%)	11(17.7%)	24(39.34%)
5	Cardiac Condition	4(5%)	8(16%)	6(9.7%)	2(3.28%)
6	Respiratory Insufficiency	16	4(8%)	6(9.7%)	3(4.92%)

Majority of cases admitted to ICU in view of hypertension 39.34% followed by hemmorhage 39.15%. 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. In the study by Karuna et al hemmorhage(32.3%) was the most common cause for ICU admission.

Table 15: Comparison of obstetric emergencies encountered with other studies

SR.NO.	OBSTETRIC EMERGENCIES	SANGEETHA GUPTHA et al[13]	LAMINA MUSTAFA et al[11]	UPADHYAYA et al[10]	KARUNA et al[9]	PRESENT STUDY
1	Obstetric Haemorrhage	28%	21.70%	27%	43%	16.28%
2	Severe Pre Eclamsia	20.50%	8.80%	27.04%	8.50%	26.85%
3	Eclampsia	-	8%	10%	16%	17.34%
4	Ruptured Uterus	-	4.60%	1.89%	9%	0.85%
5	Sepsis	3.50%	6.10%	10.69%	3%	1.06%
6	Uterine Inversion	-	0.40%	-	0.50%	0.42%
7	Malpresentation	-	-	-	7%	2.33%
8	Severe anaemia	11.80%	0.80%	-	3.50%	
9	Cardio Myopathy	-	-	-	1.26%	
10	Other Medical Causes	10.40%	-	6.30%	9%	

Most common obstetrical obstetrical emergency in our study was hypertension (eclampsia+ severe pre-eclampsia) 44.19% followed by obstetric hemmorhage 16.28% In Sangeetha Guptha et al, Lamina Mustafa et al, Karuna et al and Upadhyaya et al, obstetric hemorrhage and severe pre eclampsia were most common.

5. Conclusion

- In spite of the best efforts and national policies for

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improving maternal and neonatal health obstetric emergencies do occur.

- This study concludes that the most common emergencies encountered at MGM Medical College and Hospital, Kalamboli were hypertensive disorders of pregnancy followed by obstetric haemorrhage. The most common cause of maternal death in our study was obstetric haemorrhage followed by hypertension.
- Peripartum hemorrhage and hypertensive emergencies are the leading causes of maternal mortality and morbidity worldwide.
- From the present study it has been concluded that, Obstetric emergencies are common in cases who were referred and had poor access to antenatal care.
- Lack of specialist and transportation facilities at periphery further results in delayed referral to tertiary centres. Thus increasing maternal and perinatal morbidity and mortality reflection in unbooked cases and delayed referrals.
- The maternal mortality rates in low income countries remain unacceptably high, and many of these deaths are likely to be preventable.
- Safe motherhood is one of the most cherished dreams of every woman and making this dream come true is the prime duty of all obstetric care providers.

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