



A CROSS-SECTIONAL STUDY OF MATERNAL AND FETAL OUTCOME IN OBSTETRIC EMERGENCIES AT TERTIARY CARE CENTRE

Obstetrics & Gynaecology

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ABSTRACT

Background: Prevention and effective treatment of obstetric emergencies will help to significantly lower the magnitude of maternal mortality. The purpose of this study is to examine the outcomes of obstetric emergencies for both the mother and the fetus, to identify socio-demographic factors, obstetric factors, as well as to assess the causes of various obstetric emergencies. **Methods:** A cross sectional study conducted at tertiary hospital in Solapur where total 250 obstetric emergencies managed during study period and data obtained and analysed for demographic condition, obstetric condition, maternal and perinatal outcome. **Result:** Out of 250 obstetric emergencies evaluated, most of the cases in the study were 18 to 22 years. More than 53.6% of cases were found to be from upper middle socioeconomic status. As study was conducted in rural area most of the cases were observed having primary or secondary level education. Parity wise primigravida 40%, Multi were 56% and grand multi 4%. Majority of cases were referred with obstetric haemorrhage followed convulsions and prolonged labour. In present study 85.5% were live birth and 19.2% were perinatal death. Out of those, 4.4% cases Neonatal death while 14.8% were stillborn babies owing to varied aetiology. Present study shows 3.2% maternal mortality and 26.4% maternal morbidity due to various reasons. **Conclusion:** Obstetric emergencies have significant impact on maternal and perinatal mortality and morbidity. Obstetric emergency is significantly responsible for operative intervention, Blood transfusion, ICU management, maternal and perinatal mortality and morbidity. The present study shows significant rise in operative intervention like forceps delivery, LSCS, Manual removal of Placenta, laparotomy and caesarean hysterectomy during obstetric emergencies.

KEYWORDS

Obstetric emergency, Maternal mortality and morbidity, Perinatal mortality, High risk pregnancy

INTRODUCTION

A significant, hazardous and urgent situation that arise suddenly and unexpectedly and necessitates rapid action in order to preserve lives is referred as an emergency¹. These emergencies are often life threatening and requires immediate specialized medical care^{2,3}. They are prevalent in nations like India with contributory factors being insufficient antenatal care, insufficient and inappropriate emergency obstetric care and delivery services, inefficient transport facilities, poverty and the absence of medical resources. Prevention where possible and prompt and effective treatment of obstetric emergencies will go a long way to reduce the magnitude of ever increasing maternal mortality which appears to have defied all proposed measures set to reduce it by WHO⁴. Though measures to reduce maternal mortality have decreased the rate worldwide but still the rate is high in developing countries according to WHO⁵.

These emergencies not only develop in perinatal period as PPH, Ruptured Uterus, retained placenta etc. but also in early pregnancy like ectopic pregnancy, complications of abortions, antepartum hemorrhage, eclampsia all being potentially fatal.^{6,7}

The purpose of this study, which is being carried out at a tertiary health care facility, is to examine the outcomes for both the mother and the fetus, to identify socio-demographic factors, obstetric factors, and the availability of transport facilities, as well as to assess the causes of various obstetric emergencies.

Methodology

This cross sectional study conducted with aim to study maternal and fetal outcome in obstetric emergencies with objectives 1. To identify the sociodemographic factors, and obstetric factors affecting the maternal and fetal outcome. 2. To evaluate causes of different obstetric emergencies and its outcome. This study conducted during January 2021 to June 2022 at Ashwini rural medical college hospital and research centre, Kumbhari, Solapur (tertiary health care centre) with total number of 250 patients.

Inclusion Criteria:

All Obstetric emergency cases admitted directly to the labour room, ICU or obstetric ward during time period

Exclusion criteria:

1. Surgical complications associated with pregnancy, like acute appendicitis, acute cholecystitis, intestinal perforation, obstruction, renal and ureteric colic, penetrating injury, blunt trauma.

2. Medical Complications associated with pregnancy like hepatitis, heart failure, SLE and epilepsy.

After admission while managing patient for emergency, detail medical history, including name, age, parity, socioeconomic status, address, and whether they were booked or not, was recorded. A thorough obstetric history was collected and detailed examination conducted. Each case is followed up till the outcome in manner of management whether Normal delivery or LSCS, Laparotomy, Blood transfusion, ICU management and data analyzed for maternal and perinatal mortality and morbidity. MS Excel was used for data entry, and the Statistical Package for Social Sciences (SPSS version 21) for Microsoft Windows was used for statistical analysis. While quantitative data were summarized by mean SD, categorical variables were expressed as number of cases (%). All data were tabulated and, where appropriate, graphically represented using bar or pie diagrams.

RESULT AND DISCUSSION

Despite the fact that there are many programs being run for learning and orientation about dealing with emergency obstetrical care, these programs have not been very successful in enlisting a substantial portion of the medical staff. During critical sickness scenarios, gaining a thorough understanding of the physiological requirements of both the mother and the fetus poses a significant problem. The improved outcomes of rich countries have not had a significant impact on how obstetrical services operate, which has resulted in subpar statistical data in underdeveloped countries.

Table 1. Sociodemographic And Obstetric Condition Distribution

Sociodemographic and Obstetric criteria	Numbers	Percentage
Age Group	18-22	108
	23-27	92
	28-32	42
	33-37	8
Socio-economic status	Upper Middle	134
	Lower Middle	81
	Lower	35
Education	More than SSC	57
	Less than SSC	193
Booked / Un booked	Booked	34
	Un-booked	216
Parity Status	Primigravida	100
	2th to 4th Para	140
	5 or more	10
Referral status	Direct Admission	56
	Referred	194

In the present study, 43.2% cases were observed having age from 18 to 22 years of age followed by 36.8% cases were observed with age from 23 to 27 years of age, 16.8% cases were observed having age 28 to 32 years of age and 3.2% cases were observed having age 33 to 37 years.

In study conducted by Singh N (2021)⁸ they observed, 53.1% cases were observed having age from 21 to 25 years of age followed by 22.5% cases were observed having age from 26 to 30 years of age, 19.4% cases had age less than 20 years where 5% cases were observed having age from 31 to 35 years of age. In a study conducted by Akaba GO and colleague (2018)⁹ they observed, 38.2% cases were observed having age from 25 to 29 years of age, 22% cases were observed having age from 30 to 34, 17.9% cases were observed having age from 20.

In the present study, 77.2% cases were observed having education less than SSC and 22.8% cases were having education more than SSC.

In a study conducted by Najam R et al (2015)¹⁰ they observed, 79.9% cases were observed with primary school education, 11.9% cases were observed with graduation or more than graduation education where 8.1% cases were observed with senior secondary class.

In the present study 13.6% cases were observed having booked ANC where 86.4% cases were observed unbooked ANC.

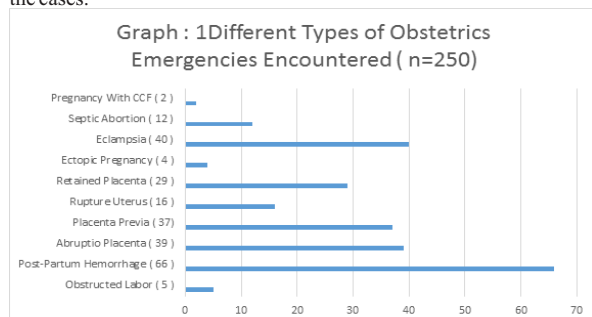
Contrary to our study, Singh N (2021)⁸ they observed, 78.7% cases were observed with Booked ANC and 21.3% cases were observed with unbooked ANC in their study.

In the present study 53.6% cases were observed with Upper middle socioeconomic status, 32.4% cases were observed with Lower middle socioeconomic status and 14% cases were observed with lower socioeconomic status.

In a study conducted by Najam R et al (2015)¹⁰ they observed, 39.78% cases were from lower socioeconomic class, 35.03% cases were from Middle socioeconomic class and 25.19% cases were from upper socioeconomic class.

In present study, primigravida were 40% of the cases, multiparous women were 56% and grand multiparous (5 and more) were 4%. thus, higher maternal mortality was seen among the multiparous women.

Limaye et al (1982)¹¹ in his study, similar to our study found 44.8% primigravida and 13.2 % grand multiparous and 42% multiparous of the cases.



In present study as shown in Graph 1, 26.4% cases of obstetric hemorrhage, 16% cases with eclampsia, 4.8% due to septic abortion, 6.4% due to rupture uterus, 1.6% due to ruptured ectopic and 2% with obstructed labour were the obstetrical events associated with perinatal mortality. We found Antepartum Hemorrhage Placenta Previa and Abruptio total 30.4% in our study.

In a study by Singh N⁸, 58.75 cases with obstetric hemorrhage, 0.6% with septic abortion, 18.7% with eclampsia and 18.1% with obstructed labour.

Table 2 Obstetric Management of the cases

Obstetric Management of the cases	Number	Percentage
Vaginal Delivery	49	19.6
Manual Removal Of Placenta	28	11.2
Emergency LSCS	94	37.6
Laparotomy	34	13.6
Cesarean Hysterectomy	5	2

LSCS With Rent Repair	10	4
Uterus conserving management in PPH (Medical, B-lynch sutures, uterine Packing, De vascularization)	18	7.6
Emergency Dilatation and Evacuation	12	4.8
	250	100

In the present study, 19.6 % cases were managed with vaginal delivery, 11.2% cases were managed with manual removal of placenta, 37.6 % cases with Emergency LSCS, 5.2% cases with laparotomy, 2% cases with caesarean hysterectomy, 11.2% cases were managed with blood transfusion and conservative management of PPH.

In study conducted by Singh N (2021)⁸ they observed, 10.6% cases were managed with vaginal delivery, 19.4% cases with Emergency LSCS, 3.1% cases were managed with laparotomy, 0.6% cases with cesarean hysterectomy, 14.3% cases were managed with blood transfusion and conservative management of PPH.

Table 3 Foetal outcome and perinatal mortality

Foetal outcome	Out of 250	Percentage
Live Birth Without NICU Admission	152	60.8
Live With NICU admission	43	17.2
IUD	33	13.2
Still birth	11	4.4
Neonatal Death After NICU Admission	11	4.4
Causes of Neonatal death		
Birth Asphyxia	5	45.4
Prematurity	4	36.3
Septicemia	2	18.3

In present study, 78 % were with live birth and 22% were with perinatal death out of which 4.4% cases were still born, 16% infants required NICU admission and 15.3% infants were observed with jaundice, 61.5% infants had no morbidity.

In present study, perinatal mortality that is early neonatal death (with in first 7 days of life) was observed in 11 newborn cases that is 4.4% the causes contributed were, 45.4% cases of birth asphyxia and 36.3% cases with prematurity were cause of perinatal mortality.

In a study conducted by Najam R et al (2015)¹⁰ they observed, in neonatal outcome 65.3% infants were observed with live birth, 34.7% infants were observed as still born, 74% infants required NICU admission where 25.7% infants required ventilator care.

Table 4. Maternal Morbidity

Maternal Morbidity	Number (Out of 250)	Percentage
Wound Infection	4	1.6
Wound Gaping	8	3.2
Burst Abdomen	2	0.8
Septicemia	8	3.2
PPH	18	7.2
Puerperal Pyrexia	16	6.4
Vaginal/Cervical / Valval Injury	10	4
	66	26.4

Table 5 Maternal Mortality

Causes of Maternal Mortality	Number (Out of 250)	Percentage
Hemorrhage	3	1.2
Eclampsia	3	1.2
Sepsis	1	0.4
ARDS	1	0.4
Total	8	3.2

Maternal morbidity was observed 6.1% with wound infection, 12.1% with wound gaping, 3% with burst abdomen, 12.1% with septicemia, 27.3% with PPH, 24.2% with puerperal pyrexia and 15.2% with Vaginal/cervical/vulval injury. This morbidity leads to increase in the number of days to stay in hospital.

In our study, we observed maternal mortality rate of 3.2% which included 3 cases of hemorrhage, 3 cases of eclampsia 1 case of sepsis and 1 case with ARDS. In study by Dipali Prasad (2018)¹³ maternal death occurred in 2.38% with underneath reasons mainly PPH and PIH.

CONCLUSION

Obstetric emergencies have significant impact on maternal and perinatal mortality and morbidity which is mainly depends on good

ANC care, education, socioeconomic class, timely decision for referral, proper transport facility and prompt management with adequate resources.

Obstetric emergency is significantly responsible for operative intervention, Blood transfusion, ICU management, maternal and perinatal mortality and morbidity. The present study shows significant rise in operative intervention like forceps delivery, LSCS, Manual removal of Placenta, laparotomy and cesarean hysterectomy.

Though pregnancy is physiological process, obstetric emergencies can occur even in most healthy social environment. The current situation calls for coordination between primary care offices and tertiary care facilities. With improvement of services at PHC and referral units with availability of transport facility and trained doctors and staff with frequent mock drill of handling emergency at periphery and tertiary care centre.

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