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Maternal and fetal outcomes in obstetrical emergencies admitted to labour Room: A hospital-based study

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Abstract
Introduction: Obstetric emergencies are developed unexpectedly and demand immediate attention in order to save life. Obstetric emergencies are the leading cause of maternal mortality worldwide and particularly in developing countries due to lack of awareness and adequate health facilities.
Objective: Present study aims to analyse the maternal and fetal outcomes in obstetrical emergencies admitted to labour room in a north region hospital center.
Methods: Total 115 obstetric patients presenting to the obstetric emergency ward were evaluated for mode of delivery, maternal outcome, ICU admission, maternal mortality and NICU admission and fetal outcomes.
Results: Preterm vaginal delivery was higher in booked pregnancies compare to unbooked. Fetal mortality rate was also low in booked pregnancy compared to unbooked. In booked pregnancies, no newborn requires the NICU admission whereas in unbooked pregnancies 30.12% newborns requires the NICU admission.
Conclusion: To handle an obstetric emergency, it is essential that the patients should be already in the follow up with the hospital. Early reference to health care center can help in better management of obstetric emergencies which in turn can enhance the maternal and fetal outcomes.

Keywords: Pregnancy, obstetric, emergency, NICU, fetal, maternal

Introduction
Obstetric emergencies are defined as situations of serious and often dangerous nature, developing suddenly and unexpectedly and demanding immediate attention in order to save life [1]. Obstetric emergencies are the leading cause of maternal mortality worldwide and particularly in developing countries where illiteracy, poverty, lack of antenatal care, poor transport facilities and inadequate equipment/ staffing combine to magnify the problem. Individual risk factors such as lack of education, low position of women in society, poor families, financial dependency of women, and delay in obtaining medical help in obstetric emergencies are all major contributors to poor maternal and perinatal outcomes. The rising incidence of hypertensive syndromes, premature rapture of membranes, diabetes, and a higher likelihood of a five-minute Apgar score of less than seven have all been linked to women's advanced maternal age during pregnancy [2].
The major complications that account for nearly 75% of all maternal deaths are: hemorrhage (mostly bleeding after childbirth), infections (usually after childbirth), high blood pressure during pregnancy (pre-eclampsia and eclampsia), complications from delivery and unsafe abortion [3]. Due to lack of awareness and absence of regular antenatal care, the critically ill patients are referred late and sometimes in moribund conditions with multiple organ damage. Timeliness and appropriateness of referral is an important factor in the ultimate outcome of the patients. Linking the primary, secondary and tertiary levels of care are an essential element of primary health care. Most of these complications develop during pregnancy and most are preventable or treatable. Timely identification of high-risk cases prone to such complications as well as identification of patients with such complications and their prompt referral to a centre well equipped to tackle such cases may improve the feto-maternal outcome. The availability of emergency obstetric care is an important indicator of health care system's readiness towards managing acute maternal morbidity and mortality [4].
Maternal and neonatal morbidity, as well as early perinatal and maternal death, are used to evaluate obstetric performance.

When life-threatening difficulties arise, a combination of variables may contribute to limiting or delaying access to maternal health care services, particularly emergency obstetric care, resulting in unfavourable mother and foetal outcomes. Better maternal and perinatal outcomes will result from the prevention and good management of obstetric crises. Assessing gaps in current referral linkages for emergency obstetric referrals is one approach to accomplish this.

Material and Methods

Patients Recruitment: 115 obstetric patients presenting to the obstetric emergency ward in the reproductive age (15-45 years) were analyzed regarding, age, parity, period of gestation, puerperal complication or post abortion sepsis, antenatal care received at the periphery, and clinical presentation.

Outcome Analysis: Patients were further evaluated for obstetrical and medical complication, mode of delivery where normal, caesarean section, instrument aided vaginal delivery, maternal outcome in terms of complications, ICU admission, blood transfusion, maternal mortality and fetal outcome in terms of mortality, NICU admission and need for ventilator support.

Statistical Analysis: Baseline and outcome data was recorded in pre-designed proforma and master chart was prepared in Microsoft Excel sheet. Data is presented in term of number and percentage. Graph and tables were used to represent data. Chi square test was used to compare the significance difference between two groups. The data was analyzed with the help of p-value. If the p-value is less than 0.05, the study was considered as statistically significant.

Results

The mean age of the patients was 24.72 ± 3.450 years. In booked pregnancies, the mode of delivery was emergency LSCS in 27 (84.37%) patients, preterm vaginal delivery in 1 (3.12%) patient, medical management in 2 (6.25%) patients, NVD with RMLE in 1 (3.12%) patient, and reposition of uterus under GA in 1 (3.12%) patient. In unbooked pregnancies, the mode of delivery was Emergency LSCS in 22 (26.50%) patients, Preterm Vaginal Delivery in 22 (26.50%) patients, Laparotomy with left Salpingectomy in 18 (21.68%) patients, Medical Management in 11 (13.25%) patients, NVD with RMLE in 8 (9.63%) patients, Manual removal of placenta in 1 (1.20%) patient, and LSCS Mg SO4 regimen in 1 (1.20%) patient. The difference between the two groups was statistically significant (Table 1).

In booked pregnancies, all 32 (100%) fetuses were alive whereas in case of unbooked pregnancies, 58 (69.88%) fetuses were alive and mortality occurred in 7 (8.43%) cases. 18 (21.68%) cases were not assessed. The difference between the two groups was statistically significant (Figure 1).

In booked pregnancies, ICU stay was required in 2 (6.25%) cases whereas in case of unbooked pregnancies, ICU stay was required in 2 (2.35%) cases. The difference between the two groups was not statistically significant (Figure 2).

In booked pregnancies, no newborn requires the NICU admission whereas in unbooked pregnancies 25 (30.12%) newborns require the NICU admission. The difference between the two groups was statistically significant (Figure 3).

Table 1: Mode of delivery. (LSCS- Lower segment caesarean section, NVD- Normal Vaginal Delivery, RMLE-, MgSO4-)

Variable	Booked	Unbooked	P Value
Emergency LSCS	27 (84.37%)	22 (26.50%)	0.0001
Preterm Vaginal Delivery	1 (3.12%)	22 (26.50%)	
Laparotomy with left Salpingectomy	0	18 (21.68%)	
Medical Management	2 (6.25%)	11 (13.25%)	
NVD with RMLE	1 (3.12%)	8 (9.63%)	
Reposition of uterus under GA	1 (3.12%)	0	
Manual removal of placenta	0	1 (1.20%)	
LSCS Mg SO4 regimen	0	1 (1.20%)	

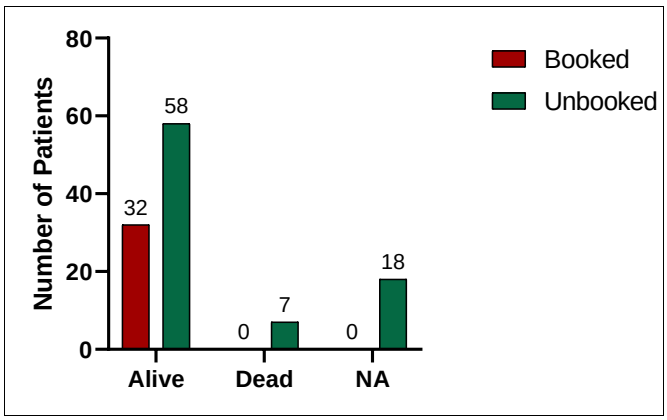

Fig 1: Fetal outcome

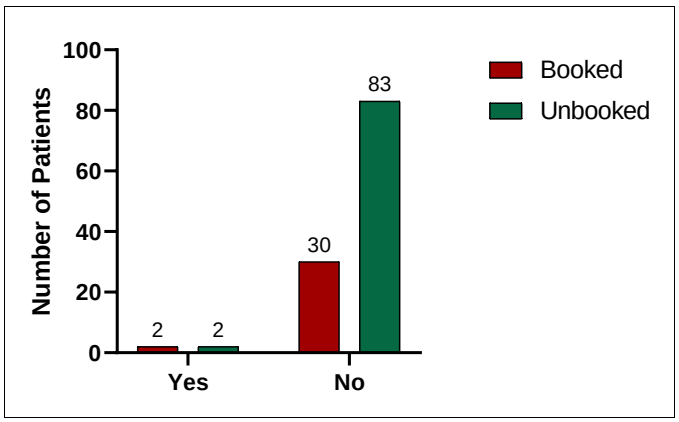

Fig 2: ICU stay

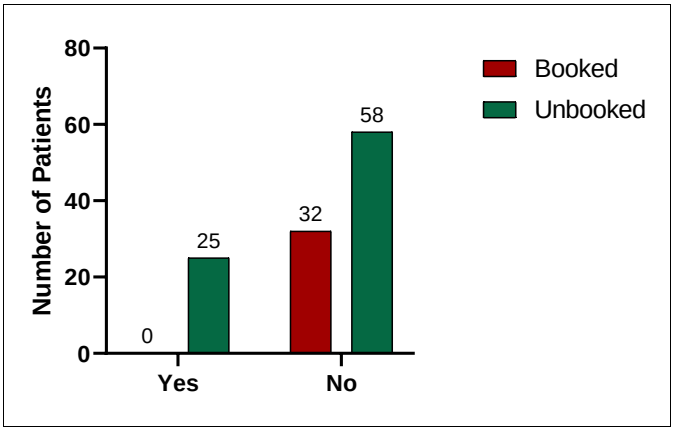

Fig 3: NICU admission

Discussion

When compared to the findings of Sabale and Patankar study, the proportion of vaginal births (44%) was lower in Arpana and Latha's study, but equal to the findings of Bindal's study [5, 6]. Because a greater number of cases were referred from outside where both the mother and the foetus were in an unsuitable condition for normal or operative vaginal deliveries, the safest route to deliver was the abdominal route by caesarean section, which was chosen for the management of obstetric emergencies. In 4% of cases, LSCS was used to treat impending eclampsia, and in one case, it was used to treat Eclampsia. In this case, the baby had matured, and LSCS was used as a rapid way to end the pregnancy [7].

Prasad *et al*. found that 28.57 percent of 770 patients were delivered by caesarean section and 22.62 percent were born vaginally in their research. In 20.83 percent of patients, an exploratory laparotomy was performed due to an ectopic rupture. In 13.69 percent of septic abortion and incomplete abortion cases, dilatation and evacuation were performed. In 11.90 percent of patients, conservative therapy was offered for postpartum haemorrhage or post-LSCS septicaemia. 2.38 percent of patients had a Caesarean hysterectomy for atonic uterus, ruptured uterus, or wide ligament hematoma [8].

In booked pregnancies, no mortality occurred among foetuses in present study whereas in case of unbooked pregnancies mortality occurred in 8.43% cases. ICU stay in present study was required in 6.25% cases in booked pregnancies whereas required in 2.35% cases in unbooked pregnancies. No newborn requires the NICU admission in present study in booked pregnancies whereas in unbooked pregnancies 30.12% newborns require the NICU admission. Morbidity was also found to be high in Arpana and Latha's study due to pre-existing anaemia, malnutrition, and infection at the time of admission, as well as cross infections in the hospital [7]. In the Adelaja *et al* research, there were 17 maternal fatalities throughout the time period, with 12 deaths due to obstetric crises (70.6 percent). Only one of the 104 booked patients (0.9%) died, but eleven of the maternal fatalities occurred among 158 unbooked patients (6.9%). Obstructed labour was the major cause of maternal mortality. The maternal fatality rate in unbooked patients was statistically considerably greater than in booked women [9].

Conclusion

The mother is greatly affected by the obstetric emergency, which can result in substantial maternal morbidity and death. One of contemporary obstetrics' primary and most important aims is to prevent obstetric emergencies and to guarantee that every pregnancy result in a healthy mother and baby. To handle an obstetric emergency, it is essential that the patients should be already in the follow up with the hospital. Early reference to health care center can help in better management of obstetric emergencies which in turn can enhance the maternal and fetal outcomes.

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