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ORIGINAL ARTICLE

COMPARATIVE STUDY OF NEONATAL OUTCOME IN CEASAREAN SECTION DONE IN REFERRED CASES VS ELECTIVE CEASAREAN DELIVERY IN A RURAL MEDICAL COLLEGE HOSPITAL

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ABSTRACT: **OBJECTIVES:** To study the fetal outcome of rural referrals undergoing emergency caesarean delivery versus elective caesarean delivery in a tertiary care hospital **METHODOLOGY**: This comparative study was done at a rural medical college hospital, Karnataka, from October 2010 to October 2011. 50 patients referred to the hospital and who underwent caesarean delivery are emergency group and 50 patients admitted in our hospital who were posted for elective cesarean delivery were the other group in the study with emphasis on indications and perinatal outcome. **RESULTS**: obstructed labour (34 %) was the commonest indication in emergency and previous caesarean delivery (36%) being the commonest in elective group. The live birth was 88% in Emergency group as against 100% live births in Elective group. Perinatal mortality from emergency Caesarean sections accounted for 12%, with severe birth asphyxia responsible for most perinatal deaths. There was statistically significant difference in stillbirths, neonatal deaths, and severe neonatal morbidity between emergency and elective caesarean sections-probably related to prolonged labor, asphyxia, and sepsis than in elective caesarean delivery. **CONCLUSION**: The perinatal mortality was 12%, and the main cause of death was severe birth asphyxia. Emergency caesarean section was more likely than elective to result in a perinatal loss. The indication with the poorest fetal outcome was prolonged obstructed labor. Early diagnosis and timely intervention may result in decrease in incidence of morbidity and mortality. Emergency caesareans, when performed, are often too late to reduce perinatal deaths.

KEYWORDS: Emergency caesarean sections, Neonatal morbidity, Elective caesarean section.

INTRODUCTION: Parturition or giving birth is physiological; however it carries significant risk to well-being of mother and baby. Of all cases few are considered high risk and may require caesarean section in 10%. Good maternal and perinatal outcomes can be ensured through essential obstetric and newborn care provided by skilled attendants during pregnancy and childbirth.[1,2] Complications during pregnancy and child birth are known to be closely associated with high stillbirth and perinatal mortality rate.[3] Obstetric practice has witnessed an increasing frequency in caesarean deliveries.[4]

Caesarean delivery is a marker for the availability and use of obstetric services in this situations.[5] Although usually lifesaving, caesarean delivery increases maternal and new born risks.[6]

Perinatal mortality and stillbirth rates are important indicators of the quality of antenatal and obstetric care in a community.[7] The present study was to compare the indications, neonatal outcomes in selected emergency and elective caesarean section, and the association of caesarean delivery with perinatal morbidity and mortality.

MATERIALS AND METHOD: This is a comparative study of 50 referred cases who underwent caesarean on emergency with 50 cases of elective caesarean section during October 2010 to October 2011 in Rural medical college hospital in Karnataka, India.

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INCLUSION CRITERIA: Gestational age > 37 weeks, either booked or unbooked cases, Cases handled outside and referred, who underwent caesarean delivery on emergency and Cases admitted in our hospital for elective caesarean delivery.

EXCLUSION CRITERIA: Gestational age < 37 weeks, Multiple gestation, Medical and surgical disorders associated with pregnancy.

Information was collected in structured format and included relevant obstetric data, indications for caesarean section and intrapartum complications. Neonatal outcome and morbidity variables including 5 minute APGAR score <7, sepsis, asphyxia, need for Neonatal Intensive Care Unit admission were noted.

Differences in the outcome, frequencies between the two groups were analyzed using mean, rate and P values of less than 0.05 were accepted as statistically significant.

RESULTS: Majority of the patients in the referred group undergoing emergency caesarean, 84 % were in the age group of 18-25yrs, on the other hand in elective group 46 % of them were of 26-30yr. 74 % of patients were primipara in rural referrals of emergency group and 70 % of multipara in elective group. Most of the women in emergency caesarean section group were primigravida [74%] as compared to 30% in elective caesarean group. Obstructed labour and fetal distress was the most common indications for the caesarean section in the emergency group [34% and 22% respectively].

Neonatal outcome among the two groups is shown in Table 2. Two still born and two dead babies were present in emergency caesarean group. Neonates of emergency caesarean group had low Apgar scores of 3 and 5 (18 %) and 5 and 7 (48 %) at 1 and 5 min. 63 % of them required Neonatal Intensive Care Unit admission. Perinatal mortality in our study was 12%.

Type of LSCS	Elective	Emergency
Previous LSCS	18 (36%)	2 (4%)
Breech	11 (22%)	4 (8%)
CPD	8 (16%)	2 (4%)
Malpresentation	6 (12%)	2 (4%)
APH	3 (6%)	6 (12%)
Obstructed labour	-	17 (34%)
Fetal distress	-	11 (22%)
Cord prolapse	-	3 (6%)
Failure to progress	-	3 (6%)
Others	4 (8%)	-
Total	**50 (100%)**	**50 (100%)**

TABLE 1: INDICATION FOR CAESAREAN SECTION AND TYPE OF OPERATION

P=0.000**

Neonatal outcome	Elective	Emergency
Live	50 (100%)	44 (88%)
Dead	-	4 (8%)
Still born	-	2 (6%)

TABLE 2: NEONATAL OUTCOME IN RELATION TO TYPE OF LSCS

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There were 44 (88%) live babies in Emergency group as against 50 (100%) live births in Elective group. There were 2 (6%) still births and 4 (8%) Intra Uterine Death's in Emergency caesarean group. There is statistically significant association between outcome and type of operation (P<0.05).

Apgar score at 1 and 5 min	Elective	Emergency
3 and 5	1 (2%)	9 (18%)
5 and 7	6 (12%)	24 (48%)
7 and 9	43 (86%)	11 (22%)
Total	50 (100%)	50 (100%)

Table 3: APGAR SCORES AT 1 AND 5 MIN IN BABIES DELIVERED BY ELECTIVE AND EMERGENCY SECTION

P=0. 000**

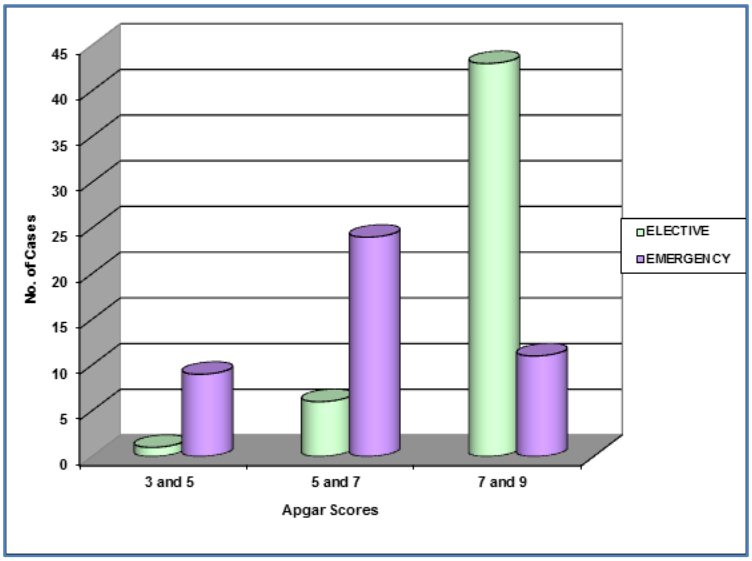
NICU Admission	Elective	Emergency
No	39 (78%)	17 (34%)
Yes	11 (22%)	29 (63%)
Total	**50 (100%)**	**50 (100%)**

TABLE 4: INCIDENCE OF NICU ADMISSION IN RELATION TO TYPE OF LSCS

NICU= Neonatal Intensive Care Unit, LSCS = Lower Segment Cesarean Section.

The Apgar score at 1 and 5 min was generally much lower in Emergency caesarean group. 18% of them had scores of 3 and 5, 48% of 5 and 7 and 22 % had 7 and 9 as compared to 2%, 12% and 86 % respectively in Elective caesarean group. The difference was statistically significant (P<0.05) and as also in terms of neonatal admission (P<0.05).

Graph 1: APGAR SCORES AT 1 AND 5 MIN IN BABIES DELIVERED BY ELECTIVE AND EMERGENCY SECTION



Graph 1

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NEONATAL MORBIDITY	ELECTIVE	EMERGENCY
Resuscitation with bag & mask	1 (2%)	9 (18%)
Birth asphyxia	0	6 (12%)
Meconium aspiration syndrome	1 (2%)	6 (12%)
Transient tachypnea of newborn	1 (2%)	2 (4%)
Hypoxic ischemic encephalopathy	0	3 (6%)

TABLE 5: NEONATAL MORBIDITY IN RELATION TO TYPE OF LSCS

There was statistically significant difference in need for resuscitation, asphyxia, hypoxic ischemic encephalopathy in emergency caesarean compared with elective caesarean sections**.**

Causes	No. of cases	Percentage
Birth asphyxia	04	66 %
Congenital malformation	01	17 %
Septicemia	01	17 %
Total	**06**	**100 %**

TABLE 6: CAUSES OF PERINATAL MORTALITY

Event	No. of cases	Percentage
Obstructed labour	04	66%
Abruption	01	17 %
Others	01	17%
Total	**06**	**100 %**

TABLE 7: OBSTETRIC EVENTS WITH PERINATAL MORTALITY

Early neonatal deaths and still birth rate were higher in emergency caesarean section group, obstructed labour being the most important cause.

DISCUSSION: During the study period, there were 4078 deliveries, with an overall caesarean delivery rate of 29.2%. Kambo et al reported an overall caesarean delivery rate of 24.2%. majority (42%) were primigravida, 31% were from rural areas, 20.8% of cases were referred, Dystocia (37.5%) and fetal distress (33.4%) %) were the major indications.[4]

Adikeri S et al reported a Caesarean rate of 63.27% and 55.48% among them were primigravida. Perinatal mortality rate was 12.5%. Among caesarean delivered babies 8.57 % of babies had poor Apgar score at 5 min[8].The incidence of caesarean delivery in obstructed labour cases was 75.6% of which 38% of cases were referred from rural areas. Perinatal deaths were 21.7% [9]. As reported by Al Nuiam et al statistically significant difference was found between emergency caesarean delivery and younger patients, low parity and low Apgar scores.[10]

When analyzed for Apgar scores in Emergency caesarean group, Apgar Score at 1 and 5 min was lesser (3 and 5, 5 and 7) as compared to elective caesarean group (7 and 9), as found in Gasparovic et al.[11]

Al Nuim et al showed Apgar score at 5min to be less favourable in emergency caesarean group, than elective caesarean group[10]. There were more neonatal admissions in the emergency group, Neonates in elective caesarean group had less frequent asphyxia and less frequent resuscitation than in emergency caesarean group as reported by Onkapa B.[12]

Onkappa B et al reported that caesarean section accounted for 11.1% of perinatal deaths. Emergency caesarean was more likely to result in perinatal loss than elective caesarean group. Prolonged obstructed labour was the indication, in cases of poorest fetal outcome.[12] Ten neonates in our study developed early onset sepsis and were started on parenteral antibiotics. There was one neonatal death in emergency cesarean group due to hypoxic encephalopathy, as also found in Cebeku L study.[13]

Emergency cesarean delivery was associated with increased fresh stillbirths, neonatal deaths, and severe neonatal morbidity. Significant proportion of the perinatal deaths and severe newborn morbidity was related to birth asphyxia secondary to prolonged labor.[14]

The perinatal mortality rate in our study was 12 %, as compared to 21.7% and 11 % in other studies. Obstructed labour accounted for 6% of deaths as against 9.6% found in Rabindranath sahoo study.[15] Presence of severe obstetric complication showed a close association with stillbirth, followed by low birth weight, caesarean section, and referral from a peripheral health facility. In addition, obstetric complications during the intrapartum period were independently associated with fresh stillbirths.[16]

Non-availability of Emergency Obstetrics Care, particularly caesarean section has been implicated as a risk factor for intrapartum stillbirth especially in cases of prolonged labour.[17] While caesarean section can be a lifesaving interposition for mother and child, evidence showed that its use, particularly in low-resource settings could be associated with increased risk of perinatal mortality, especially when it is performed late.[18]

CONCLUSION: Emergency caesarean section is associated with significant perinatal morbidity and mortality. The rural units lack skilled manpower, equipment and other facilities to handle obstetric emergencies. Poor referral system, low socioeconomic status, illiteracy, and inadequate antenatal care, inadequate transport facilities to apex hospital-all this leads to increased risk of maternal and perinatal complications. Labour monitoring with partogram and early recognition and referral of high risk women, will reduce the incidence of emergency caesarean sections and thus decrease the incidences of maternal and perinatal morbidity and mortality.

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