

## Original article

# Retrospective Analysis of Caesarean Deliveries with Eclampsia: A Hospital Based Study

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## Abstract

**Background:** Eclampsia is a major cause of maternal and perinatal mortality worldwide. While the symptoms and complications of pre-eclampsia are well known and far-reaching, the exact etiology remains unknown. Hence; we planned the present study to retrospectively analyse all the cesarean deliveries with eclampsia.

**Materials & Methods:** The present study included retrospective evaluation of data records of eclampsia patients who underwent caesarean sections. A total of 80 cases were included in the present study. Complete demographic and clinical details of all the subjects were retrieved. Details regarding the maternal outcome and neonatal outcome were also collected. Subjects with gestational age of more than 32 weeks were divided into two categories; subjects with immediate cesarean section and subjects with cesarean section after labor induction. All the results were collected, summarized and analyzed by SPSS software.

**Results:** In the present study, we analyzed the data records of a total of 80 subjects. Mean age of the subjects was 28.5 years. Hypertension was the most common maternal morbidity found to be present in 32 subjects. However; we didn't observe any significant difference while comparing the immediate cesarean deliveries and cesarean deliveries after labor induction.

**Conclusion:** Cesarean deliveries are associated with considerable maternal and neonatal morbidities.

**Key words:** Caesarean, Delivery, Eclampsia.

## INTRODUCTION

Eclampsia is a major cause of maternal and perinatal mortality worldwide. While the symptoms and complications of pre-eclampsia are well known and far-reaching, the exact etiology remains unknown. Preeclampsia, a multisystem disorder unique to human pregnancy is defined as the association of pregnancy-induced hypertension with proteinuria of greater than or equal to 300 mg/24 h after 20 weeks of gestation.<sup>1-3</sup> It is a severe complication of pregnancy leading to maternal and fetal morbidity and mortality and has been reported to complicate 4-7% of all pregnancies. Major maternal complications of preeclampsia include placental abruption; HELLP syndrome (hemolysis, elevated liver enzymes, low platelets) and eclampsia which can seriously endanger maternal wellbeing.<sup>4</sup>

The pathogenesis of preeclampsia is poorly understood. The role of seasonal variation in its etiology is one of the factors being considered. Women with pre-eclampsia have an increased rate of cesarean section consequent upon the high incidence of intrauterine growth restriction, fetal distress and prematurity. Cesarean section on the other hand increases the risk of cardiopulmonary morbidity associated with pre-eclampsia. This is due to the altered hemodynamics in women with pre-eclampsia.<sup>5-7</sup>

Hence; we planned the present study to retrospectively analyse all the cesarean deliveries with eclampsia.

## **MATERIALS & METHODS**

The present study was planned in the department of Obstetrics & Gynecology, Zanana Hospital, Bharatpur, Rajasthan. It included retrospective evaluation of data records of eclampsia patients who underwent cesarean sections. Ethical approval was obtained for carrying out the present retrospective study. A total of 80 cases were included in the present study. Based on criteria given by American College of Obstetricians and Gynecologists, diagnosis of all the cases was confirmed.<sup>9</sup> Complete demographic and clinical details of all the subjects was retrieved. We also collected detailed report of haematological and biochemical analysis of the patients included in the present study. Details regarding the maternal outcome and neonatal outcome were also collected. Subjects with gestational age of more than 32 weeks were divided into two categories; subjects with immediate cesarean section and subjects with cesarean section after labor induction. All the results were collected, summarized and analyzed by SPSS software. Student test was used for assessment of level of significance. P- value of less than 0.05 was taken as significant.

## **RESULTS**

In the present study, we analyzed the data records of a total of 80 subjects. Mean age of the subjects was 28.5 years. Mean gestational age of the subjects was 32.5 weeks. Estimated blood loss was found to be 820.2 ml. mean fetal birth weight was 1751.5 gm. Hypertension was the most common maternal morbidity found to be present in 32 subjects, followed by neurological, pulmonary and hepatic morbidities. However; we didn't observe any significant difference while comparing the immediate cesarean deliveries and cesarean deliveries after labor induction.

## **DISCUSSION**

In the present study, we didn't observe any significant difference while comparing the immediate cesarean deliveries and cesarean deliveries after labor induction. Nassar AH et al determined the rate of vaginal delivery after labor induction in severe preeclampsia remote from term. Patients were divided into 3 groups: elective cesarean delivery without labor, cesarean delivery after labor induction, and vaginal delivery after labor induction. A total of 306 charts were reviewed. Among these, 161 patients (52.6%) underwent elective cesarean delivery without labor; the 2 most common indications were unfavorable cervix (33.5%) and malpresentation (22.4%). The remaining 145 patients (47.4%) underwent labor induction with a 48.3% rate of vaginal delivery after induction, ranging from 31.6% at  $\leq 28$  weeks' gestation to 62.5% at  $> 32$  weeks' gestation. The most common indication for cesarean delivery after induction, in 50.7% of the cases, was nonreassuring fetal heart rate. The median Bishop score was significantly higher and the total hospital stay was significantly shorter in the vaginal delivery after induction group than in the cesarean delivery after induction group. However, there were no significant differences between the 2 groups in use of cervical ripening agents, gestational age at delivery, birth weight, 5-minute Apgar score, or postpartum endometritis. After exclusion of cesarean deliveries performed for malpresentation, there was no statistically significant difference in classic incision rates between the elective cesarean delivery without labor and cesarean delivery after induction groups. According to logistic regression analysis, only the Bishop score was significantly associated with a successful induction. Gestational age reached marginal significance. Labor induction should be considered a reasonable option for patients with severe preeclampsia at  $\leq 34$  weeks' gestation because 48% of patients given the chance were successfully delivered vaginally.<sup>10</sup>

Hypertension was the most common maternal morbidity found to be present in 32 subjects, followed by neurological, pulmonary and hepatic morbidities (Table 2). Sotunsa JO et al determined the prevalence of eclampsia and the associated foeto-maternal outcome. The hospital records were retrieved and the data extracted included the age, parity, gestational age at presentation, booking status, mode of delivery, outcome of baby and mother, and the total delivery in the hospital over the period. The prevalence of eclampsia over the period was 1.1%. Eclampsia was common among women aged 25 years and below (64.3%), nulliparous women (78.6%) and unbooked (100.0%). Cesarean section was carried out on 63.0% of the patients on account of unfavourable cervix, while 22.2% of patients had spontaneous vaginal delivery. Most (96.4%) received magnesium sulphate (MgSO<sub>4</sub>) therapy but 22.2% convulsed while receiving it. Maternal mortality was 7.1% while perinatal mortality rate was 250/1000 live birth. Eclampsia remains a cause of maternal morbidity and preventable death in the understudied community. Early antenatal booking and the use of MgSO<sub>4</sub> are effective in reducing the burden.<sup>11</sup> Mashiloane CD et al assessed prospectively the mode of delivery in severe pre-eclampsia remote from term. The clinical data of 108 women who presented consecutively with severe pre-eclampsia over a 1-year period was used for the study material. Sixty-eight (63%) patients were delivered by elective cesarean section and 40 (37%) underwent induction of labour. Twenty-six had a vaginal delivery following induction, the others (n = 14) had emergency cesarean section. No baby with a gestational age of < or = 27 weeks survived after delivery. Perinatal mortality was highest for the babies delivered following induction of labour (vaginal delivery vs. cesarean section after induction of labour, P = 0.0004; vaginal delivery vs. elective cesarean section, P = 0.002). Severe pre-eclampsia remote from term is associated with a high cesarean section rate. In this study, carried out in a developing country, elective cesarean section contributed to a better perinatal outcome than vaginal delivery or emergency cesarean section following induction of labour.<sup>12</sup>

## CONCLUSION

Under the light of above results, the authors conclude that cesarean deliveries are associated with considerable maternal and neonatal morbidities. However; further larger epidemiological studies are recommended for better exploration of the results.

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**Table 1: Demographic details of the subjects**

Parameter	Number
Maternal age (years)	28.5
Gestational age (week)	32.5
Parity	0.28
Estimated blood loss (ml)	820.2
Fetal birth weight (gm)	1751.5
Apgar score at 1 min	27
Apgar score at 5 min	8

**Table 2: Maternal morbidities**

Maternal outcome	Number
Cardiac	1
Endometritis	1
Hypertension	32
Haemorrhage	2
Liver	12
Neurologic	13
Pulmonary	14
Renal	1
DIC	1

DIC: Disseminated intravascular coagulation

**Table 3: Comparison of cesarean deliveries ( $\leq 32$  weeks)**

<b>Parameter</b>	<b>Immediate (n = 27)</b>	<b>After labor induction (n= 8)</b>	<b>P- value</b>
<b>Gestational age (week)</b>	32.3	32.7	0.52
<b>Parity</b>	0.27	0.29	0.14
<b>Birth weight</b>	1760	1743	0.81
<b>Mean ventilator days</b>	7.8	5.8	0.71
<b>Respiratory distress syndrome (Percentage of neonates)</b>	74.07	75	0.33