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Incidence of Maternal and fetal outcome of severe pre-eclampsia and eclampsia in cesarean section and normal delivery

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ABSTRACT

Aims: To evaluate the maternal and fetal outcomes in severe preeclampsia and eclampsia in Cesarean Section and normal delivery .

Methods: An observational descriptive study of severe pre-eclampsia-eclampsia conducted in the Department of Obstetrics and Gynaecology, Basaveshwara Medical College Hospital. Gestational age 32-42 weeks were included and imminent deliveries were excluded from the study. Primary outcome variables were mode of delivery, maternal morbidity-mortality, and perinatal morbidity-mortality.

Results: 63.2% in severe pre-eclampsia, 50% in eclampsia group delivered vaginally; 15.1% in severe preeclampsia and 25% in eclampsia group underwent elective LSCS; 21.7% in severe preeclampsia and 25% in eclampsia group underwent emergency LSCS. Incidence of cesarean deliveries in severe pre-eclampsia was 36.8% and in eclampsia it was 50%. No maternal death was observed in elective LSCS. Maternal death in vaginal delivery cases was 0.94% in severe preeclampsia and 4.76% in eclampsia. In emergency LSCS cases maternal mortality was 1.4% in severe preeclampsia and 4.76% in eclampsia group. No perinatal mortality was observed in elective LSCS group; 4.7% perinatal mortality occurred in normal delivery, 20.5% in emergency LSCS in severe preeclampsia and 7.1% in eclampsia who were delivered vaginally.

Conclusion: In eclampsia, feto-maternal outcome is better in the cesarean deliveries than in the vaginal deliveries

Keywords: Cesarean section, Maternal morbidity, Neonatal morbidity, Severe preeclampsia

INTRODUCTION

Preeclampsia and eclampsia are multi system pregnancy specific disorder with high maternal and perinatal morbidity and mortality. The World Health Organization (WHO) systematically reviews maternal mortality worldwide, and in developed countries, 16% of maternal deaths were reported to be due to hypertensive disorders. This proportion is greater than three other leading causes that include hemorrhage 13%, abortion 8% and sepsis 2%.[1]

Treatment of hypertension and control of convulsions are the two importat initial stratergies in the management of eclampsia. Once the patient condition is stabilized obstetrician has to plan the delivery appropriately.[2,3] Delivery is the ultimate cure for severe preeclampsia and eclampsia, because of worsening of fetal and maternal status. Proper obstetric care is one of the cornerstones of the management, undue delay in the delivery of the fetus and placenta may adversely affect fetal and maternal outcome. Hence, abdominal route of delivery when vaginal route is not imminent will help in improving the maternal/fetal outcome.[4]

Incidence of Cesarean section in eclampsia ranges from 26.7 to 71%.[5,6] Indication of Cesarean section for severe pre-eclampsia and eclampsia is increasing. Controversies still persist regarding early cesarean section and conservative line of management. With early cesarean section there is improved perinatal salvage and maternal outcomes.[1] The present study is done to evaluate the feto-maternal outcomes by mode of delivery in severe preeclampsia-eclampsia.

METHODS

This is an observational descriptive study conducted in the Department of Obstetrics and Gynaecology, Basaveshwara Medical College Hospital, Chitradurga, from November 2018 to September 2021. Data taken from labor room after appropriate written informed consent.

Mode of delivery, maternal morbidity-mortality and perinatal morbidity-mortality were the study variables. Cases with severe preeclampsia between 32 and 42 weeks of gestation, ante partum and intra partum eclampsia were included in the study. Patients with imminent delivery were excluded from the study. In cases of imminent eclampsia decision to induce labour was done after balancing risks and benefits for mother and fetus.

Primary outcome was measured in terms of maternal mortality, maternal morbidity characteristics like acute renal failure, pulmonary edema, disseminated intravascular coagulation (DIC), HELLP syndrome, abruption. Parameters for fetal and neonatal outcomes were birth weight, APGAR score, live or still births, and any complications. Data were analyzed by using SPSS v 20. Results are presented in frequency and percent.

RESULTS

A total of 421 patients were recruited in the study. Out of which 337 cases were severe preeclampsia and 84 cases were eclampsia. The incidence of severe preeclampsia and

eclampsia was 2.6% and 0.6% respectively. Age group of 21-29 years had severe pre-eclampsia in 66.8% and eclampsia in 71.4%; and 27.6% of severe pre-eclampsia and 27.4% of eclampsia were below 20 years of age.

Primigravida were predominantly seen such as 61.4% of severe pre-eclampsia and 63.1% of eclampsia followed by second gravida by 32.9% and 31%, and then third gravida by 5.3% and 6% respectively. Only 18.1% of severe pre-eclampsia and 6% of eclampsia were booked cases; and 28.2% of severe pre-eclampsia and 52.4 % of eclampsia were at 32-36 weeks of gestation. Majority had normal delivery; and 77.4% patients with severe pre-eclampsia and 25% patients with eclampsia delivered 24 hours after admission. [Table-1]

Table-1: Mode of delivery (N=421)

Parameters	Normal delivery	Elective LSCS	Emergency LSCS	Total
Severe pre-eclampsia	213 (63.2%)	51 (15.1%)	73 (21.7%)	337
Eclampsia	42 (50%)	21(25%)	21 (25%)	84
Total	255	72	94	

Maternal mortality was similar in both severity and mode of delivery whereas the perinatal death was more in severe pre-eclampsia. [Table-2]

Table-2: Maternal and perinatal mortality

Parameters		Normal delivery	Emergency LSCS
Maternal (6)	Severe pre-eclampsia	2	1
	Eclampsia	2	1
Perinatal (28)	Severe pre-eclampsia	10	15
	Eclampsia	3	0

Majority (11) had HELLP syndrome as a maternal complication followed by placental abruption (6). In elective CS two had HELLP and one abruption; in emergency CS two had pulmonary edema and one ARF. In vaginal deliveries all had severe pre-eclampsia except two who had eclampsia and HELLP syndrome. [Table-3]

Table-3: Maternal complications by severity of condition (N=27)

Complications	Severe PE (24)	Eclampsia (3)	Total (27)
HELLP	9	2	11
Abruption	5	1	6
Pulmonary edema	4	0	4
ARF	3	0	3
DIC	3	0	3

Majority of perinatal events were preterm birth followed by IUGR, birth asphyxia, intraparum death and IUFD. IUGR and birth asphyxia were more common causes of morbidity in term babies. Birth asphyxia seems to be a common complication in vaginal delivery. [Table-4a and 4b]

Table-4a: Perinatal complications by mode of delivery [N=213]

Parameters	Vaginal delivery	Cesarean Section	Total
Preterm	74	49	123
IUGR	11	18	29
Asphyxia	23	5	28
Stillbirth (intrapartum)	8	12	20
Stillbirth (IUFD)	11	2	13
Total	127	86	213

Table-4b: Perinatal complications detailed by mode of delivery [N=213]

	Severe pre-eclampsia (159)				Eclampsia (54)			
	Vaginal delivery	Elective CS	Emergency CS	Total	Vaginal delivery	Elective CS	Emergency CS	Total
Preterm (123)	57	14	18	89	17	13	4	34
IUGR (29)	10	8	8	26	1	-	2	3
Asphyxia (28)	18		3	21	5	-	2	7
Stillbirth (intrapartum) (20)	5	1	9	15	3	-	2	5
Stillbirth (IUFD) (13)	8	-	0	8	3	-	2	5
Total (213)	98	23	38	159	29	13	12	54

DISCUSSION

Severe pre-eclampsia-eclampsia is increasingly applied indication for Cesarean section in order to promote maternal and fetal wellbeing as per recommendation from ACOG.[7] This is applicable if fetus seems to be mature enough to survive ex-utero, cervix is unfavorable and admission to delivery interval is anticipated to be prolonged. On the other hand, if surgery may put further risk to the mother and fetus then it could be deferred and allowed to deliver vaginally.[8]

Elective cesarean delivery is no longer a marginal idea. Elective cesarean delivery is controversial issue, and this controversy is fueled by the lack of data regarding short term and long term consequence of vaginal delivery compared with elective cesarean delivery.[9] Mode of delivery and admission to delivery interval are similar to other studies as well.[10,11]

In this study total maternal deaths were 6 and there were no deaths in patients who were delivered by elective LSCS. Similar results was found in other studies.[12,13] Likewise the maternal complications were similar to other studies.[14,15]

In the present study out of all the deliveries fetal morbidities are less in elective LSCS in comparison to emergency LSCS and vaginal delivery. The same findings are consistent with other similar studies.[16,17] Total number of Perinatal mortality in the present study was 28. This finding was similar to other studies[18,19,20], from Benin, Eastern India &Tanzania.

CONCLUSIONS

Present study shows that in eclampsia group, feto-maternal outcome is better in the cesarean deliveries than in the vaginal deliveries.

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