

**ECLAMPSIA AND PERINATAL OUTCOME: A RETROSPECTIVE STUDY IN A TERTIARY CENTRE**P. V. Raghava Rao<sup>1</sup>, C. Anuradha<sup>2</sup>**HOW TO CITE THIS ARTICLE:**

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**ABSTRACT: INTRODUCTION:** Eclampsia is associated with devastating fetal and maternal complications. **AIMS:** The aim of this study is to evaluate the perinatal outcome in antepartum eclampsia with different modes of delivery i. e. cesarean section with those obtained with vaginal delivery in primi gravida with more than 28 weeks of gestation. **MATERIAL AND METHODS:** women admitted to labour ward of Guntur Medical College Guntur, Andhra Pradesh, India from October 2010 to September 2012, a period of 2 years with antepartum eclampsia were delivered either by cesarean section or vaginal delivery and factors influencing perinatal outcome were assessed. **RESULTS:** The study comprised 100 pregnant women with antepartum eclampsia with gestational age more than 28 weeks, who satisfied exclusion and inclusion criteria. 60 patients had a vaginal delivery and 40 patients had a cesarean section. The perinatal morbidity was significantly less in the cesarean section group and in women who delivered within 6 hours of onset of convulsions by cesarean section. Perinatal morbidity increased with increasing induction delivery interval and when the number of convulsions were more than 5. **CONCLUSION:** Cesarean section within 6 hours of convulsions is associated with lesser perinatal morbidity and better perinatal outcome, if done in salvagable babies. **KEYWORDS:** Eclampsia, Perinatal mortality, Perinatal morbidity.

**INTRODUCTION:** Eclampsia is the occurrence of convulsions in association with the syndrome of preeclampsia. Early detection of signs and symptoms by good antenatal care and initiation of therapy in preeclampsia will prevent eclampsia. In India it's incidence is reported to be 220/10000 deliveries.<sup>(1)</sup> It is estimated that about 7% of maternal mortality is associated with hypertensive disorders of pregnancy, particularly eclampsia.<sup>(2)</sup>

**AIMS AND OBJECTIVES:** The aim of the present study is to evaluate perinatal outcomes with different modes of delivery and to compare the results of termination of pregnancy by cesarean section with those obtained with routine or induced vaginal delivery in primigravidae with more than 28 weeks of gestation in antepartum eclampsia.

**MATERIAL AND METHODS:** The study was conducted at Government General Hospital, Guntur, which serves as a tertiary center with 6000 deliveries per annum. The retrospective study included 100 patients of antepartum eclampsia admitted in the hospital from October 2010 to September 2012, a period of 24 months. The inclusion criteria were primi gravida with a duration of gestation more than 28 weeks with antepartum eclampsia or intrapartum eclampsia. The exclusion criteria were patients with pregnancy induced hypertension without eclampsia, Patients with epilepsy or other causes of convulsions with pregnancy and cases of postpartum eclampsia.

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The 100 patients were studied by dividing them into two (2) groups for comparative analysis. The "V. D. group" consisted of patients in whom conservative obstetric management and delivery per vaginam was carried out. The "C. D. group" consisted of patients in whom lower segment caesarean section was carried out due to eclampsia and varied associated indications.

**METHODS:** On admission, a detailed history was taken followed by an obstetric examination and a vaginal examination to note the favourability of the cervix for induction of labour and to rule out cephalopelvic disproportion. In the obstetric management, induction of labour was done with pervaginal misoprostal following conservative obstetric management or were taken up for cesarean section directly when there was an unfavourable cervix or other associated indications such as caphalopelvic disproportion or failed induction of labour and the perinatal outcome was studied.

**RESULTS:** The results of the present study are tabulated and analysed.

Route of delivery	No. of cases	Percentage
Vaginal	60	60.00
Caesarean section	40	40.00

**Table 1: Relative incidence of vaginal delivery & caesarean section**

Time when caesarean section is performed	No. of cases	Percentage
Early (0-6 hrs)	33	82.50
Late (>6 hrs)	7	17.50
<b>Total</b>	<b>40</b>	<b>100.00</b>

**Table 2: Incidence of caesarean section in early and late intrapartum periods after admission**

Convulsion Delivery Interval (hrs)	V.D. group		C.D. group	
	No. of cases	Percentage	No. of cases	Percentage
0 – 6 hrs	3	5.00	18	45.00
6 – 12 hrs	16	26.66	10	25.00
12 – 18 hrs	20	33.33	7	17.50
18 – 24 hrs	13	21.66	2	5.00
> 24 hrs	8	13.33	3	7.50
<b>Total</b>	<b>60</b>	<b>100.00</b>	<b>40</b>	<b>100.00</b>

**Table 3: Convulsion – Delivery Interval**

$X^2 = 16.64$   $p < 0.001$  Highly significant.

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Induction Delivery Interval (hrs)	V.D. group	
	No. of cases	Percentage
0 - 6 hrs	11	24.44
6 - 12 hrs	19	42.22
12 - 18 hrs	10	22.22
18 - 24 hrs	04	8.88
> 24 hrs	01	2.22
<b>Total</b>	<b>45</b>	<b>100.00</b>

**Table 4: Induction Delivery Interval**

### PERINATAL OUTCOME:

- V.D. group: No. of cases were 60 and number of babies were 62 including 2 cases of twin gestation.
- C.D. group: No. of cases were 40 and number of babies were 41 including 1 case of twin gestation.

Perinatal Outcome	V.D. group		C.D. group	
	No. of cases	Percentage	No. of cases	Percentage
Apgar<7 at 1 minute	28 out of 34	82.35	14 out of 40	35.00
Need for resuscitation	15 out of 34	44.11	4 out of 40	10.00
Need for NICU stay	26 out of 34	76.47	12 out of 40	30.00

**Table 5: Perinatal Morbidity**

Perinatal Outcome	V.D. group		C.D. group	
	No. of cases	Percentage	No. of cases	Percentage
Live births	28 out of 62	45.16	36 out of 41	87.88
Still births	28 out of 62	45.16	1 out of 41	2.43
Neonatal deaths	6 out of 62	9.67	4 out of 41	9.75
Uncorrected PNM	34/62 x 100	54.83	5/ 41 x 100	12.20
IUFDs on admission	7 out of 62	11.30	1 out of 41	2.43
Corrected PNM	27/62 x 100	43.55	4/41 x 100	9.75

**Table 6: Perinatal Mortality**

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Gestational age (weeks)	V.D. group			C.D. group		
	No. of cases	PNM	Percentage	No. of cases	PNM	Percentage
28-32	7	6	85.71	-	-	-
32-36	21	13	61.90	7	1	14.29
36-40	27	8	29.62	33	3	9.09
<b>Total</b>	<b>55</b>	<b>27</b>	<b>49.09</b>	<b>40</b>	<b>4</b>	<b>10.00</b>

**Table 7: Comparison of PNM with respect to Gestational Age (excluding IUFDs)**

Gestational age (weeks)	V.D. group			C.D. group		
	No. of cases	PNM	Percentage	No. of cases	PNM	Percentage
1 - 1.5	12	10	83.33	1	1	100.00
1.5 - 2	13	6	46.15	4	0	0.00
2.0 - 2.5	17	8	47.06	11	1	9.09
2.5 - 3	9	2	22.22	12	1	8.35
3 - 3.5	3	0	0.00	11	1	9.09
>3.5	1	1	100.00	1	0	0.00
<b>Total</b>	<b>55</b>	<b>27</b>	<b>49.09</b>	<b>40</b>	<b>4</b>	<b>10.00</b>

**Table 8: Comparison of PNM with respect to Birth Weight (excluding IUFDs)**

Total No. of convulsions	V.D. group			C.D. group		
	No. of cases	PNM	Percent age	No. of cases	PNM	Percent age
1 - 5	51	26	50.98	33	2	6.06
6 - 10	9	6	66.66	7	2	28.57
11 - 15	2	2	100.00	1	1	100.00
>15	-	-	-	-	-	-
<b>Total</b>	<b>62</b>	<b>34</b>		<b>41</b>	<b>5</b>	

**Table 9: Relation of PNM to Total No. of Convulsions**

P<0.05, t=4.6 for V.D. group, t=4.32 for C.D. group.

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Total Interval (hrs)	Total No. of cases	PNM	Percentage
0 - 6	11	3	27.27
6 - 12	19	12	63.15
12 - 18	11	7	63.63
18 - 24	04	4	100.00
>24	01	1	100.00
<b>Total</b>	<b>46</b>	<b>27</b>	<b>58.69</b>

**Table 10: Relation of PNM to Induction Delivery Interval**

Intrapartum period	PNM	Percentage
Early (0 - 6 hrs)	2	40.00
Late ( $\geq$ 6 hrs)	3	60.00
<b>Total</b>	<b>5</b>	<b>100.00</b>

**Table 11: Relation of PNM to caesarean section done in early and late intrapartum periods after admission**

Intrapartum period	Total No. of cases	NICU Admission	Percentage
Early (0 - 6 hrs)	33	8	24.24
Late ( $\geq$ 6 hrs)	7	4	57.14

**Table 12: Incidence of NICU admissions in relation to caesarean section done in early and late intrapartum periods after admission**

**RESULTS:** Total number of antepartum eclampsia were 100 of which 60(60%) patients had a vaginal delivery (V.D group) and 40(40%) patients had a caesarean section (C.D group) (Table 1).

82.5% of the cases were operated within 6 hours of admission, 35% of them being taken for caesarean section soon after admission, the surgery being accomplished within 2 hours. (Table 2).

The net convulsion - delivery interval was less than 6 hours in 45% of the cases in the C.D. group and only in 5% of the cases in the V.D. group. 70% of the cases in the C.D. group were delivered within 12 hours of throwing the first fit, while 68.33% of the cases in the V.D. group took more than 12 hours for delivery after the first fit. (Table 3)

Only 24.44% of the cases delivered within 6 hours of the start of induction in the V.D. group. 75.6% of the cases required more than 6 hours for delivery after induction, most of them (42.22%) taking 6-12 hours. (Table 4)

Mean duration of stay in NICU in C.D. group was 3.08 days. Mean duration of stay in NICU in V.D. group was 7.34 days. (Table 5)

Corrected perinatal mortality rate in the C.D. group and V.D. group were 9.75% and 43.55% respectively. Apgar score was less than 5 at 1 minutes in 35% of the cases in the C.D. group and

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82.35% of the cases in the V.D. group. Thereby, the NICU admission rate in the C.D. and V.D. group were 30% and 76.47% respectively. Perinatal outcome was found to be definitely better in cases where cesarean section was done in comparison to those who delivered vaginally. (Table 6)

For both gestational ages between 32 to 36 weeks and 36 to 40 weeks, PNM was lesser in the C.D. group. (Table 7). For all birth weights, PNM was lesser in the C.D. group but for two exceptions. (Table 8)

There was increase in the PNM with increase in the total number of convulsions in both the groups. For any number of convulsions thrown, the PNM was found to be lesser in the C.D. group in comparison to the V.D. group. (Table 9) There was a progressive increase in PNM with increase in the induction delivery interval. (Table 10)

PNM was found to be comparatively more when caesarean section was delayed for more than 6 hours after admission. (Table 11) NICU admission rate almost doubled in these cases where caesarean section was performed after 6 hours of admission in comparison to those in whom it was performed before 6 hours. (Table 12)

**DISCUSSION:** Eclampsia is a life threatening complication of pregnancy, associated with both perinatal and maternal morbidity and mortality. This study was done with a view to study the perinatal and maternal outcome with respect to the mode of delivery, cesarean section versus vaginal delivery.

The perinatal morbidity is significantly less in the cesarean delivery group when compared to the vaginal delivery group, the corrected perinatal mortality in the cesarean delivery group is 9.75% versus 43.55% in the vaginal delivery group. These findings correlate with another study where cesarean section had better perinatal outcome in salvagable babies.<sup>(3,4)</sup>

The total perinatal morbidity with respect to gestational age is 10% in cesarean delivery group and 49.09% in vaginal delivery group. For corresponding gestational age, cesarean section has better perinatal outcomes.<sup>(5)</sup>

For all birth weights perinatal morbidity was less in the cesarean delivery group. This correlates with another study where perinatal outcome was poor in those babies who weighed less than 2 kgs.<sup>(6)</sup>

In both vaginal delivery and cesarean delivery groups, higher the number of convulsions, greater was the perinatal mortality, but when the number of convulsions were less than 5, perinatal mortality was significantly less in the cesarean delivery group when compared to vaginal delivery group. This finding is similar to a study done by Dhananjaya et al where poor perinatal outcome was associated with more than 5 convulsions.<sup>(7)</sup>

Perinatal mortality increased with increasing induction delivery interval for both cesarean delivery group and vaginal delivery group. Perinatal mortality was less (40%) when cesarean section was done before 6 hours when compared to cesarean section done after 6 hours(60%) and NICU admission were less when cesarean section was done before 6 hours and 57.14% when done late in labour. These findings are comparable to another study where perinatal mortality was low when delivery when occurred within 6 hours of convulsion.<sup>(8)</sup>

**CONCLUSION:** Prompt termination of pregnancy by cesarean section reduces perinatal mortality and improves perinatal outcome with better one minute APGAR scores and reduced NICU stay when

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compared to conservative obstetric management with vaginal delivery in eclampsia in primi gravidae after 28 weeks of pregnancy. Hence cesarean section should be done at the optimum time and not as a last resort when conservative management has failed in eclampsia for better perinatal outcomes.

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