

# A study on maternal complication and foetal outcome in eclampsia at tertiary care hospital in Gujarat

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## Abstract

**Background:** Globally hypertensive disorder of pregnancy contributes 14% of maternal death, it is approximately 42,000 mother per year.[1,,2] Nearly all of these deaths occur in low-resource settings (99%).[3] Hypertensive disorders of pregnancy (HDPs) affect about 10% of all pregnant women around the world and are an important cause of maternal and perinatal mortality and morbidity. The maternal and foetal outcomes with major complications of the women with eclampsia were studied in this study. **Methods:** This prospective study was carried out in the Department of Obstetrics and Gynaecology, at tertiary care centre in the state of Gujarat, for a period of two years from July 2012 to June 2014. In this prospective study, all patients admitted with complain of eclampsia is included in study. Details related to maternal and new born outcome are taken in predesigned, prevalidated and prescribed proforma. **Results:** Incidence of eclampsia in our study is 1.11%. The incidence of maternal complications was 56% with premature labour being the common and in case of foetal complications prematurity was the commonest (39%). The maternal mortality was very less with only 5% in the study. **Conclusions:** Good antenatal care with increased awareness and increased antenatal visits may help in reducing the incidence and maternal and foetal complications. Identification of cases early and proper institutional management reduces the maternal and foetal deaths due to eclampsia.

**Key Words:** Eclampsia, Preeclampsia, Perinatal mortality, Neonatal mortality

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## INTRODUCTION

Eclampsia is defined as new onset of grand mal seizure activity and or coma during pregnancy, labour or postpartum in a woman with signs or symptoms of preeclampsia.<sup>4,5</sup> More than 50% occur in the third trimester. In more recent years, there has been an increasing shift in the incidence of eclampsia toward the postpartum period. This is presumably related to improved access to prenatal care, earlier detection of pre-

eclampsia, and prophylactic use of magnesium sulphate. Globally hypertensive disorder of pregnancy contributes 14% of maternal death, it is approximately 42,000 mother per year.<sup>[1,2]</sup> Nearly all of these deaths occur in low-resource settings (99%).<sup>3</sup> Hypertensive disorders of pregnancy (HDPs) affect about 10% of all pregnant women around the world and are an important cause of maternal and perinatal mortality and morbidity. Hypertensive disorders of pregnancy include chronic hypertension, gestational hypertension, pre-eclampsia and eclampsia. The majority of morbidity and mortality is associated with pre-eclampsia and eclampsia. It is one of the leading cause of maternal and perinatal mortality as well as morbidity throughout the world.<sup>6,7</sup> Every year many maternal deaths occurred due to eclampsia, most of which occurs in developing countries.<sup>8</sup> Approximately 1 in 2000 deliveries are complicated by eclampsia in developed countries; whereas the incidence in developing countries is estimated around 1 in 100 to 1 in 1700 cases.<sup>9</sup> Incidence of eclampsia is said to be declined, still is a major problem for maternal mortality associated with

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increased risk of Abruption placenta, DIC, ARF, Cerebral hemorrhage. It also reduces uteroplacental perfusion, places the fetus at high risk for IUGR, preterm birth and perinatal mortality. Mainstay of management in case of eclampsia is early delivery to improve the prognosis in terms of reducing maternal and perinatal morbidity and mortality. The current study was done to determine management, maternal complication and foetal outcome in patients of eclampsia who presented in tertiary care institute in Gujarat during the year July 2012 – July 2014.

## MATERIALS AND METHODS

This prospective study was carried out in the Department of Obstetrics and Gynaecology, at tertiary care centre in the state of Gujarat, for a period of two years from July 2012 to June 2014. The study setting is one of the largest tertiary care centre in the state of Gujarat with average more than thirty five admissions per day to the Labour room. Administrative permissions were taken from hospital authority for the study. All the women admitted during pregnancy or within 42 days of termination of pregnancy or delivery who had complain of eclampsia and their complications were included in the study. Patients were informed about the purpose of the study and informed consents were taken from the patients who were ready to participate in the study. All patients were treated as per the protocol. Out of these 118 patients 100 had given informed consent to take part in study. A detailed history with clinical symptoms and signs, laboratory investigations, management and neonatal outcome were recorded in the predesigned, prevalidated and prescribed proforma.

## RESULTS

In this cohort of 10582 deliveries there were 118 cases of eclampsia over two years. This gives an incidence of eclampsia of 1.11%, (11 per 1,000 deliveries). Majority of patients in this study were unbooked, out of 100 cases only 15 cases were registered. Majority of the patients (78%) were from socioeconomically lower class. The majority of eclampsia cases occurred in women aged 21–25 years (44%); 30% eclampsia occurred in women aged 20 years or below. More than half women (58%) had convulsion after 32 weeks, suggesting more incidence near term pregnancy. (Table 1) Table 2 demonstrates the maternal outcome of cases in the study. 52% of cases had normal vaginal delivery, 48% had LSCS, most common reason being failure of induction and foetal distress. 56% of eclampsia patients developed complications out of which 39 cases developed preterm labour, 3 cases with PPH, 3 with septicaemia, 2 with DIC, Renal failure (2) and HELLP syndrome in 1 case. The mortality was very less with 5 cases (5%). Foetal outcome in the study is explained in table-3. Thirty-nine babies born preterm and making them high risk for morbidity and mortality. In our study we observed 17% intrauterine death and 4% still birth. Out of seventy-nine normal birth 28 neonates required NICU admission. Among those 28 admissions, 9 babies were expired mostly due to low birth weight, prematurity and birth asphyxia. Incidence of IUGR babies in this study was 18% in full term babies. Out of 100 cases of eclampsia 92% had well responded to MgSO<sub>4</sub> therapy (Prichard's regimen). Only 8 cases required other anti-convulsant therapy. Among those 8 one patient had a status eclampticus. 7 patients had episodes of convulsion after MgSO<sub>4</sub> therapy.

**Table 1:** Demographic characteristics of eclampsia patients

	No. of cases	Percentage
Age of patients		
18-20	30	30%
21-25	44	44%
26-30	19	19%
> 30	7	7%
Socioeconomical class		
Middle	22	22%
Lower	78	78%
Parity of patients		
Nulliparous	68	68%
1	19	19%
2	6	6%
3	2	2%
4	3	3%
5	2	2%
Previous history of Hypertensive disorder		
P/H of PIH	9	9%
P/H of Eclampsia	2	2%

**Table 2: Maternal outcome among cases in the study**

	No. of cases	Percentage
Mode of delivery		
Normal delivery	52	52%
Caesarean Section	48	48%
Maternal complication other than preterm labour (n=17)		
PPH	3	16.6%
Septicaemia	3	16.6%
DIC	2	11.8%
Acute renal Failure	2	11.8%
HELLP Syndrome	1	5.9%
Aspiration pneumonitis	1	5.9%
Pulmonary embolism	1	5.9%
Other complication	4	23.5%
Cause of maternal death (n=5)		
DIC	1	20%
Pulmonary embolism	1	20%
Acute renal failure	1	20%
Septicaemia	1	20%
Status eclampticus	1	20%

**Table 3: Foetal outcome among cases in the study**

Particular	Number of new born		Percentage
	Preterm (n=39)	Full term (n=61)	
Foetal outcome			
Intrauterine Death	12	5	17%
Still birth	3	1	4%
Live birth	24	55	79%
New born required extra care			
NICU admission	20	8	8%

## DISCUSSION

In this hospital based study, incidence of eclampsia is 1.11%. This finding is comparable with study by Olakunle *et al*<sup>10</sup> (1.66%). One multicentric community-based study at south east region show the lower (0.5%) incidence rate compare to this study.<sup>11</sup> It is hospital based study it caters high percentage of referred cases giving higher incidence of eclampsia. Incidence of eclampsia was more common in unbooked cases in this study. These results are agreement with other studies.<sup>10,12,13</sup> Regular, frequent and efficient antenatal visits are important for prevention of eclampsia. By efficient antenatal care preeclampsia can be detected earlier and eclampsia can be minimized. This study shows the higher incidence in socioeconomically lower class. This can be explained by lack of antenatal visits by these women. Eclampsia is a disease of young primigravida, specifically teenage primigravida.<sup>14</sup> In this study, nearly a third of eclampsia cases occurred in women aged under 20 years. Other studies have reported rates of 26%<sup>15</sup> to 55%<sup>16</sup>. The incidence below the age group 20 years is 4.9 times higher than the age group more than 20 years. Here the slight shift from teenage to 21 -25 years can be explained by late marriages in last few years. Existing literature

suggests that teenage pregnant women are at greater risk of eclampsia and their care should be prioritised in clinical practice.<sup>17</sup> Interventions aiming to overcome the complex socio-cultural needs of this group to improve access to healthcare and prevent eclampsia warrant further research. In this study around ten percentage of patients had past history of PIH or eclampsia.

In the present study the incidence of LSCS was 48% which was almost similar to other studies who reported normal LSCS in around half of the patients.<sup>10,12,13</sup> Vaginal delivery is a safe option resulting in low maternal mortality rates as long as fetal presentation and status are appropriate and labour progresses in an orderly fashion.<sup>18</sup> The incidence of complications in our study was 56%, the commonest being preterm labour affecting 39 out of 100 cases (39%) and followed by post-partum haemorrhage, septicaemia, DIC and renal failure. Similar findings were reported by Naseer D *et al*<sup>19</sup> but contrary to Al-Mulhim AA *et al*<sup>20</sup> who reported abruption of placenta as the most common and HELLP syndrome in 18% of cases in his study. Rate of complications depends upon number of convulsions, duration of convulsion, duration of admission between hospitalization and last fit, proper nursing care treatment, least time for delivery. The

incidence of maternal mortality in our study was 5% which is in line with study conducted by Shailja B *et al*<sup>21</sup> (4.64%). Other studies had reported higher mortality rate of around ten percent.<sup>[12,14]</sup> Analyzing the causes of death, it was found that delayed hospitalization was one of the major deterrent factor for successful treatment. Early onset eclampsia is another factor influencing the high mortality. Thirty-nine babies born preterm and making them high risk for morbidity and mortality. Out of 39 preterm deliveries 12 were Intrauterine death, 3 was still birth and 24 were live birth, among those 6 babies were expired due to prematurity and birth asphyxia. Out of 61 full term babies. 5 were IUD, 2 were stillborn. 55 were live birth, among those 55 babies 3 babies were expired. Incidence of IUGR babies in this study was 18% in full term babies. This gave us perinatal mortality (Intrauterine death, still birth and neonatal death) of 30 % which is in line with study conducted by Chaudhari N *et al*.<sup>22</sup> Preterm contributes more (70%) in this perinatal mortality. Out of 100 cases of eclampsia 92% had well responded to MgSO<sub>4</sub> therapy (Prichard's regimen). Use of magnesium sulphate to prevent eclampsia and timely delivery after diagnosis remain important strategies to reduce maternal and perinatal mortality from eclampsia.

## CONCLUSION

Eclampsia is not a totally preventable disease but its incidence can be decreased by proper antenatal care. Early diagnosis of cases of PIH and preeclampsia, their proper management and selective termination will improve maternal and perinatal outcome. Termination of pregnancy is the primary treatment for eclampsia, Induction of labour with oxytocics and prostaglandins decreases the duration of labour. If vaginal delivery fails following induction of labour cesarean section is preferable. This study suggests that MgSO<sub>4</sub> therapy is considered as the best therapy and is very effective in preventing and controlling convulsions in cases of eclampsia.

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