

# Comparative study of maternal and foetal outcome in eclampsia and in normotensive patients

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## Abstract

**Background:** Incidence of eclampsia in pregnancy in India ranges from 0.94% to 1.8%. In all pregnancies eclampsia accounts for about 50000 maternal deaths a year worldwide.<sup>2</sup> The World Health Organization (WHO) estimates the risk of dying due to pre-eclampsia/eclampsia as approximately 300 times higher for a woman in a developing country than for one in a developed country. Unfortunately, pre-eclampsia is not preventable, nor is its onset accurately predictable.<sup>3</sup> **Aim and Objective:** 1) To compare the maternal outcome in the form of morbidity and mortality in the pregnancies associated with eclampsia with that of normotensive patients. 2) To compare the neonatal outcome in the form of morbidity and mortality in pregnancies associated with eclampsia with that of normotensive patients. **Material and Methods:** **Study design:** Type of study- The prospective study **Study period:** was one year from January 2013 to January 2014 **Study place:** A tertiary care referral centre. **Sample size:** 100 cases of eclampsia patients admitted to tertiary care centre, during study period were studied in comparison with 100 cases of normotensive pregnancies. **Conclusion:** Maternal complication and foetal complication in eclampsia cases are much higher as compare to normotensive patients in our study. Early detection of high risk individual by well trained personnel and timely referral to advanced tertiary centres, early and timely treatment of eclampsia may lead to improved maternal and foetal outcome.

**Key Words:** PPH-postpartum haemorrhage, DIC, HELLP syndrome.

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Received Date: 10/03/2018 Revised Date: 14/04/2018 Accepted Date: 28/05/2018

DOI: <https://doi.org/10.26611/1012633>

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Quick Response Code:	
	Website: <a href="http://www.medpulse.in">www.medpulse.in</a>
	Accessed Date: 06 June 2018

## INTRODUCTION

Eclampsia is defined as the occurrence of generalized convulsion associated with preeclampsia during pregnancy, labour or within 7days of delivery and not caused by epilepsy or other convulsive disorders<sup>1</sup>. Incidence of eclampsia in pregnancy in India ranges from 0.94% to 1.8%. In all pregnancies eclampsia accounts for

about 50000 maternal deaths a year worldwide.<sup>2</sup> maternal mortality in eclampsia ranges from less than 1% to nearly 20 % while perinatal mortality ranges from 2% to 8.6% in developed world and upto 33.98% in developing countries. The World Health Organization (WHO) estimates the risk of dying due to pre-eclampsia/eclampsia as approximately 300 times higher for a woman in a developing country than for one in a developed country. Unfortunately, pre-eclampsia is not preventable, nor is its onset accurately predictable.<sup>3</sup> Incidence of eclampsia has been relatively stable at 1.6 to 10 cases per 10,000 deliveries in developed countries, in developing countries however the incidence varies widely from 6 to 157 cases per 10,000 deliveries. High incidence of eclampsia is largely explained by referral of complicated cases to major centers.<sup>4</sup> Patients with eclampsia, develop complications because they reach the hospital late and the complications are so severe that in most cases they are irreversible. The present study is

**How to cite this article:** Priti Bagde, Anagha Jinturkar. Comparative study of maternal and foetal outcome in eclampsia and in normotensive patients. *MedPulse – International Journal of Gynaecology*. June 2018; 6(3): 58-61.

<http://medpulse.in/Gynaecology/index.php>

undertaken to find out maternal and perinatal mortality and morbidity rate in eclampsia in semiurban population as compare to normotensive patients and to find out effectiveness of early intervention in reducing maternal and foetal complications.

## MATERIAL AND METHODS

**Study design:** Type of study- The prospective study Study of maternal and foetal outcome eclampsia and its comparison to normotensive patients.

**Study period:** Was one year from January 2013 to January 2014

**Study place:** A tertiary care referral centre.

**Sample size:** 100 cases of eclampsia patients admitted to tertiary care centre, during study period were studied in comparison with 100 cases of normotensive pregnancies.

### Inclusion Criteria

1. All cases of antepartum and intrapartum eclampsia
2. All patients with normotensive pregnancies

### Exclusive Criteria

All patients with chronic hypertension. All patients with preeclampsia not complicated with convulsion

## OBSERVATION AND RESULTS

Table 1: Maternal Outcome

	Eclampsia	Normotensive	Relative risk
	Percent	Percent	
PPH	5.0	4.0	1.25
Abruption Placenta	7.0	1.0	7
Renal Failure	3.0	0.0	
Pulmonary Edema	2.0	0.0	
HELLP	11.0	0.0	
DIC	4.0	0.0	
Cerebrovascular	15.0	0.0	
Maternal Mortality	5.0	1.0	5.7
None	48.0	94.0	
<b>Total</b>	<b>100</b>	<b>100.0</b>	

Table 2: Neonatal Outcome

	Eclampsia	Normotensive	Relative risk
	Percent	Percent	
SGA	12.0	3.0	4
Preterm Labour	26.0	5.0	5.2
Birth Asphyxia	13.0	14.0	1.8
IUGR	7.0	3.0	2.3
IUD	19.0	3.0	6.33
Perinatal Mortality	21.0	6.0	3.5
None	2.0	66.0	
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	

## DISCUSSION

Eclampsia is a devastating complication of pregnancy. Maternal complications seen in the eclamptic patients appeared to arise from delay in the timely management of pre-eclamptic patients. Incidence of eclampsia in developing countries is 0.94 % to 1.8%. Our study suggestive of relative risk of maternal complications was 8.6 times higher than normotensive cases. Our findings were comparable to Jun Zhang 2003<sup>5</sup> who reported 3 to 25 fold increased risk of complication in eclampsia. relative risk of postpartum haemorrhage among eclampsia cases was 1.25 times higher than normotensive cases. Our incidence rate correlates with 8.5% for Meshram D P *et al* (2014)<sup>6</sup> and 2% for Suman *et al* (2007). Relative risk of abruptio placenta among eclampsia cases was 7 times higher than normotensive cases. Our findings are consistent with 11% incidence in study by Savita *et al* 2009. Ananth CV<sup>8</sup> reported increased risk of abruptio 1.73 times in preeclampsia and eclampsia, which is less as compared to our study, as that study was conducted in US, a developed country reflecting better health awareness. risk of renal failure among eclampsia was much higher than normotensive patients. Our incidence was comparable to 2.1% incidence in study by Meshram D P *et al*(2014)<sup>6</sup>. 2.3% as reported by Suman *et al*2007<sup>9</sup> our findings are supported by Mjahed K 2004<sup>10</sup> who Reported 1.81 times increased risk of renal failure in eclampsia. Risk of pulmonary edema among eclampsia was much higher than normotensive cases. Our findings were consistent with Sibai BM 1987<sup>11</sup> who reported 2.9% incidence of pulmonary edema in eclampsia. Risk of HELLP Syndrome among eclampsia was much higher than normotensive cases. Our findings are consistent with Maureen o'Hara<sup>12</sup> (1999) reported incidence of HELLP Syndrome is 0.2 to 0.6 % of all pregnancies in comparison to Superimposed HELLP syndrome, which develops in 4 to 12 percent of women with preeclampsia or eclampsia. Incidence of DIC among eclampsia cases was 4% where as no case was found among normotensive cases. Our incidence rate was comparable to 3.19% as reported by Meshram DP (2014)<sup>6</sup> and 3.8% as reported by kaur k (2014)<sup>2</sup> We found that risk of cerebrovascular accident among eclampsia was much higher than normotensive cases. Our findings are consistent with Cheril Bushnell (2011)<sup>13</sup> who reported four times increased risk of stroke. Relative risk of maternal mortality among eclampsia cases was 5 times higher than normotensive cases. Our findings are comparable to. Gaddi Suman *et al*<sup>7</sup> reported maternal mortality 5.4% among eclampsia cases. Bhalerao A (2013)<sup>14</sup> reported 5.45% Duley L *et al*<sup>15</sup> (2014) who found that eclampsia contributes to 10% of mortality.

**Neonatal Complication:** Relative risk of neonatal complications among eclampsia cases was 2.8 times higher than normotensive cases. Our findings are consistent with most of the studies. Relative risk of short for gestational age babies was four time higher in eclampsia than normotensive cases. Our results were comparable to Habli M 2007<sup>16</sup> who reported SGA 17.9% on eclampsia as compared to 1.7% in normotensive. Our study suggestive of relative risk of preterm babies among eclampsia was 5.2 times higher as compared to normotensive cases. Our incidence rate was comparable to Savita *et al*<sup>17</sup> who found 38%, Bhalerao A<sup>14</sup> who reported 41%.we found prematurity was the most common neonatal complication in our study. Similar findings were reported by Gaddi SS (2007)<sup>7</sup>. relative risk of birth asphyxia among eclampsia cases was 1.85 times higher than normotensive cases Incidence rate is similar to Savita *et al*<sup>17</sup> who reported 13% birth asphyxia in eclampsia. Relative risk of IUGR among eclampsia cases was 2.3 times higher as compared to normotensive cases. Incidence rate among eclampsia are comparable to Meshram P D *et al*<sup>6</sup> who reported 19% IUGR among eclampsia. Relative risk of IUD among eclampsia cases was 6.33 times than normotensive cases. Our findings were similar to Savita *et al*<sup>17</sup> reported incidence of IUD among eclampsia was 15%. This result shows that relative risk of perinatal mortality was 3.5 times higher in eclampsia as compared to normotensive cases. Our results are consistent with Anand S (2011)<sup>18</sup> who reported 26.5% perinatal mortality in eclampsia patients as compared to 9.09% in normotensive patients. Perinatal mortality rate in eclampsia in our study was also similar to 25.45% as reported by Bhalerao A<sup>14</sup> 2013. In our study perinatal mortality is less than Gaddi SS *et al* (2007)<sup>7</sup> who reported higher (39.3%) Perinatal mortality rate this difference was due to difference in the management and mode of delivery preferred.

## CONCLUSION

There is a need for proper antenatal care to prevent eclampsia and for intensive monitoring of women with eclampsia throughout hospitalization to improve both the maternal and perinatal outcome. To conclude maternal complication and foetal complication in eclampsia cases are much higher as compare to normotensive patients in our study. Early detection of high risk individual by well trained personnel and timely referral to advanced tertiary centres, early and timely treatment of eclampsia may lead to improved maternal and foetal outcome.

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Source of Support: None Declared  
Conflict of Interest: None Declared

