

# A Study of Maternal and Fetal Outcome in Eclampsia in a Tertiary Referral Centre

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**Abstract:** This study aims to find out the relationship between sociodemographic parameters and eclampsia, to assess complications and outcome in mother and child due to eclampsia and how to prevent maternal and fetal complications by prompt interventions. This was a case control study conducted over a period of 2 years. Cases were patients with eclampsia who were compared with controls who were patients without eclampsia. In this study it was found that early referral, intensive management of severe hypertension and introduction of newer and better treatment protocols are essential prerequisites to improve the maternal and fetal outcome. Incidence of eclampsia is still high in our population. Maternal deaths and morbidity have reduced. In spite of advanced neonatal care, 1 offspring out of 4 is still lost. Early intervention and prompt management should be our goal to improving maternal and fetal outcome in eclampsia.

**Keywords:** Eclampsia, Severe Hypertension

## 1. Introduction

The term eclampsia is derived from the Greek word meaning "Like a flash of lightning". It is a life threatening emergency that tends to be a major cause of maternal and perinatal mortality and morbidity. Worldwide, maternal mortality values vary in various nations suggesting that there might be a gross difference in socioeconomic conditions and quality of obstetric care. In India maternal mortality is very high and ranges between 8-14% and the perinatal mortality is between 14.6-47.4%. The clinical management of eclampsia has undergone many changes and achieved good results with various regimens for convulsions and newer antihypertensives. So it is worthwhile to review this major problem and with better antenatal care and hospital management of severe preeclampsia we can reduce incidence of eclampsia. The present study was undertaken to find out factors influencing maternal and perinatal outcome.

### Aim of study

To find out

- 1) Association between sociodemographic parameters like age, parity, socioeconomic status and eclampsia
- 2) To note the incidence of eclampsia
- 3) To assess complications in mother and baby.
- 4) To prevent maternal and perinatal mortality and morbidity by prompt interventions.

## 2. Materials and Methods

It is a case control study where cases are patients with eclampsia and controls are patients without eclampsia. For each case 2 controls were selected. Incidence for eclampsia in our hospital was between 2-2.5% in last 4 years.

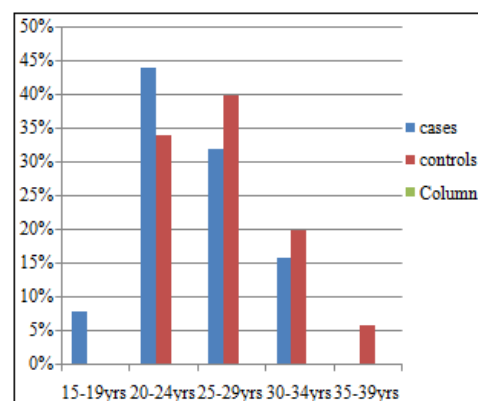
All patients who gave consent were included in study. Patients presenting with convulsions due to other causes like epilepsy, CVA, trauma, tumour, electrolyte imbalance were excluded from study. Factors like maternal age, parity, socioeconomic status, clinical presentation, mode of delivery and complications before and after delivery were assessed. Fetal outcome was also studied.

On admission a detailed history was obtained. All investigations related to severe preeclampsia and eclampsia was sent. Intensive nursing care, treatment with antihypertensives and anticonvulsant MagSo<sub>4</sub> was given. Pelvic assessment and labour induction was done. If no progress of labour or deteriorating condition of mother or fetus, LSCS was done. Antihypertensives and anticonvulsant was continued in postpartum period as indicated. Follow up was done after six weeks in post natal clinic after discharge.

## 3. Observation and Results

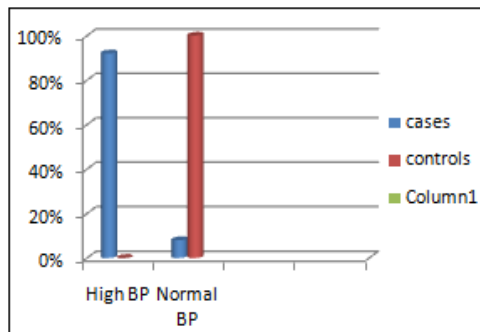
During the study period, there were 25 cases of eclampsia (cases) and 50 patients were taken as controls. Incidence of eclampsia in the current study was 1.35%. Around 72% of cases were in age group of 20-29 years, 8% in age group of 15-19 years, 16% in age group of 30-34 years and above 35 years constituted only 4% of cases. This suggests that eclampsia occurs more in younger age group. In this study, 76% cases belonged to Class 2 socioeconomic status according to modified Kuppuswamy classification. 60% lacked basic primary education and so did not have any idea about antenatal care. All were referred from peripheral hospital with less than 5 antenatal checkups.

### a) Age Distribution



60% were primigravidas suggesting that eclampsia is more common in primigravidas. (Chi square value: 5.389. p value: 0.020 significantly associated).

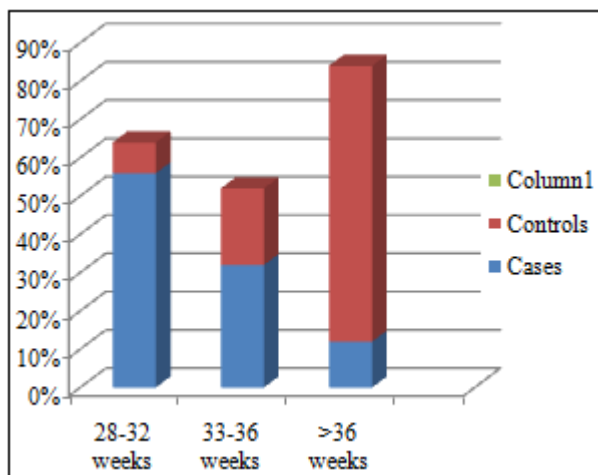
92% of patients had Blood pressure more than 160/110mm of Hg on admission, suggesting that high or uncontrolled blood pressure might be a triggering factor for eclampsia. (p value of 0.001 )



In our study 68% cases were in the post ictal phase. Most of them recovered within next 1-2 hours with good control of their blood pressure.

**b) Gestational Age Distribution**

56% cases were between 28-32 weeks gestational age suggesting that eclampsia is more common in lower gestational age than at term.



All the cases and controls were subjected to funduscopy. 76% cases had significant arteriovenous narrowing and exudates. All controls had normal findings. This suggests that changes in fundus are seen more in eclampsia due to high blood pressure.

Incidence of HELLP in this study was 52% suggesting that HELLP is common in eclampsia. 24% of cases had DIC. None of controls had it. So DIC is common to eclampsia patients.

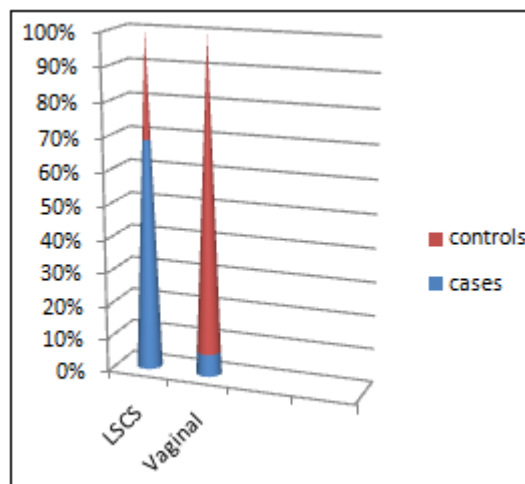
**c) Complications**

Complication	No of Cases	Percentage	P Value	Chi Square
HELLP	13	52%	0.001	31.452
DIC	6	24%	0.001	13.043
Cerebral Infarct	1	4%	0.155	2.027
Renal failure	4	16%	0.004	8.451

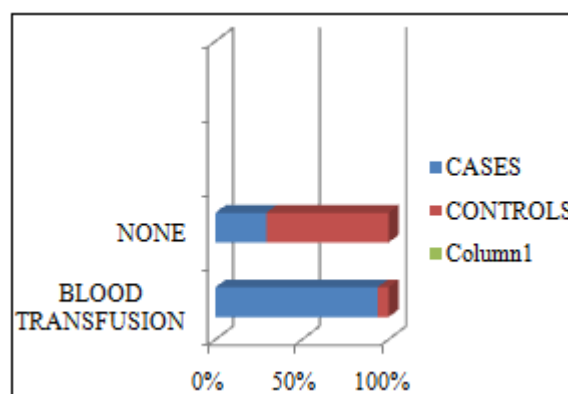
Postpartum convulsions were seen in 8% of cases in spite of controlling hypertension with IV Labetolol, Nifedipine. 4% of patients showed infarcts in brain and neurological deficit and none of controls had these features suggesting CVA is common to eclampsia.

96% of cases had LSCS as mode of delivery and only 1 patient had a normal delivery. There is increased incidence of LSCS as period of gestation was 28-36 weeks which is associated with low bishops score and poor response to induction. LSCS rate is high due to need for early termination to avoid complications and also due to abnormal hematological investigations.

**d) Mode of Delivery**



**Blood and Blood Component Therapy**-Blood and blood component therapy was required in 60% of cases due to HELLP and DIC. Only 8% of controls required blood transfusion which was for abruption.



Almost 84% of babies required admission to NICU as period of gestation varies between 28-36 weeks. In contrast only 24% of babies in control patients required admission to

NICU. Out of 25 cases there were 6 perinatal deaths due to prematurity and respiratory distress syndromes, remaining 19 babies were discharged with average duration of stay in NICU 10-20 days.

In our study 96% of patients were discharged on one or two antihypertensives. Average duration of intake of drugs was for two weeks post discharge, following which drugs were stopped. On postnatal visit at 6 weeks, none of the cases were on antihypertensives. BP was normal and all the 19 babies were alive and doing well.

#### 4. Discussion

During study period there were 25 cases of eclampsia for which 50 controls were selected one case before and one case after the cases. The controls were either normal case or with any other disease other than eclampsia. All patients with eclampsia were given intensive nursing care, antihypertensives and MagSo<sub>4</sub> as anticonvulsant. The following findings were noted as compared to previous studies. Incidence in the current study was 1.35%. Various studies around the world had incidence between 0.18%-4.6% Incidence might appear to be high as ours is a tertiary referral centre. It was found that most of the cases were in the age group of 20-24 years. 8% was in the age group of 15-19 years and 32% in age group of 20-29 years suggesting that eclampsia is common in younger age group. In present study 60% were primigravidas and 40% were multigravidas. Varavalla Harmeen et al (1989) in a study of 84 cases found a 67.9% occurrence in primigravidas. Arup Kumar Majhi et al(2001) studied 877 cases of eclampsia and found 88.37% patients were primigravidas.

It was found that most of patients belonged to Class 2 socioeconomic status according to Kuppaswamy's classification as in our study. In present study about 40% had hypertension, convulsions, blurring of vision, edema and proteinuria as presenting symptoms. Sibai Ratnam (1990) also found 40% had symptoms of hypertension, oedema and proteinuria.

In present study there were 52% cases of HELLP and 25% of cases of DIC. Weinstein in his study found 10% cases had HELLP and 5% had DIC. Matter Farid et al(2000) also found increased incidence of HELLP in eclampsia patients. Around 60% of eclampsia patients had required some form of blood or blood component therapy due to increased incidence of HELLP and DIC.

Perinatal mortality was 24% in spite of giving surfactant and ventilator support. This was due to prematurity and respiratory distress syndrome. In all previous studies it ranged between 14.6%-47.04%, Nanda Smith et al found perinatal mortality rate of 40.64% in their study. LSCS rate was 96% in this study and 4% had normal vaginal delivery. This was due to low gestational age and poor Bishop's score. Kumar Majhi et al(2001) found better outcome for babies delivered by LSCS. Incidence of maternal mortality according to Menon was 2.2%. In this study there was no maternal mortality. This is because of early resort to LSCS, less anaesthetic complications and ready availability of blood and blood products.

#### 5. Conclusion

Eclampsia still remains a problem in developed countries. Incidence is still high and there is still high referral to tertiary centre. Perinatal mortality is still high in spite of advances in neonatal care. Maternal mortality and morbidity has reduced. Magnesium sulphate has revolutionized the management of eclampsia. Newer antihypertensives are a boon in controlling hypertension. Early attention and intensive management should be our goal. We have to strive to bring obstetric care within reach of all pregnant women without which no miracle can be expected.

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