

## Study of maternal and perinatal outcome in eclampsia in a tertiary care centre

<sup>1</sup>Dr. Arti Kumari, Senior Resident, Dept. of Obs. and Gynae., JLN medical College, Bhagalpur

<sup>2</sup>Dr. Anupama Sinha, Associate Professor and Head of Department, Dept. of Obs. and Gynae., JLN medical College, Bhagalpur

**Corresponding Author:** Dr. Arti Kumari, Senior Resident, Dept. of Obs. and Gynae., JLN medical College, Bhagalpur

**How to citation this article:** Dr. Arti Kumari, Dr. Anupama Sinha, “Study of maternal and perinatal outcome in eclampsia in a tertiary care centre”, IJMACR- November – December - 2021, Vol – 4, Issue - 6, P. No. 18 – 23.

**Copyright:** © 2021, Dr. Arti Kumari, et al. This is an open access journal and article distributed under the terms of the creative commons attribution noncommercial License 4.0. Which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

**Type of Publication:** Original Research Article

**Conflicts of Interest:** Nil

### Abstract

**Background:** Eclampsia is a life threatening emergency that continues to be a major cause of serious maternal morbidity and is still the leading cause of maternal mortality worldwide.

**Objective:** Analysis of all cases of Eclampsia patients to determine the incidence of eclampsia, to evaluate the clinical course, medical & obstetric management, and complications and to study the maternal & perinatal outcome.

**Methods:** This study was a hospital based prospective observational study. We obtained the data for this study from the two hundred case records of Eclampsia patients who admitted in the Department of Obstetrics & Gynaecology, J.L.N.M.C.H Bhagalpur and data were recorded on a predesigned proforma. All the obstetrical women with convulsions after 20 weeks pregnancy or in postpartum period were evaluated. Each case was documented with respect to age, socioeconomic status, education, occupation, gestational age, time of onset of Eclampsia, duration and frequency of seizures, mode of delivery, use of drugs (anticonvulsant and

antihypertensive), maternal and perinatal outcome.

**Results:** Out of total 200 Eclampsia patients, Antepartum Eclampsia were 141(70.5%), Intrapartum Eclampsia were 24 (12%), Postpartum Eclampsia were 35(17.50%). Out of them, 70% were in age group of 18-25 years, 20.6% were in 26-30 years and 9.4% were above 30 years. Out of these, only 1.86% was booked and rest of them were unbooked 98.14%. Out of them 58.6% were primi, 36.8% were multipara and 4.6% were grand multipara. 69% had severe hypertension, 10% had BP < 140/90 mm of Hg. Significant proteinuria was present in 92% cases. Generalized oedema was present in 27% cases at the time of admission. There were 20 maternal deaths and morbidity consisted of pulmonary oedema in 34 (40%), Abruption placenta in 18(21.18%), CVA in 11 (12.94%), PPH in 10 (11.76%), renal failure in 6 (7.06%), HELLP Syndrome in 5 (5.88%), and Aspiration Pneumonia in 1 (1.18%) cases. Perinatal mortality was 44.6% with majority being related to extreme prematurity.

**Conclusions:** There is a need of proper antenatal care to prevent Eclampsia and the need for intensive monitoring

of women with Eclampsia throughout the hospitalization to improve both the maternal & perinatal outcome.

**Keywords:** Eclampsia, Maternal Mortality, Magnesium Sulphate, Perinatal outcome

### Introduction

In this study we analysed consecutive cases of eclampsia to determine the maternal and fetal outcomes and discuss ways to improve them. Outcomes were compared against the anticonvulsant used to control the eclamptic seizures.

Eclampsia is a serious complication of pregnancy responsible for high maternal and foetal mortality & morbidity. It is an unpredictable, multi-organ disorder unique to human pregnancy. Worldwide eclampsia and preeclampsia account for about 63 000 maternal deaths annually <sup>[1]</sup>. In developing countries case fatality rate of up to 14% is reported in relation to eclampsia <sup>[2]</sup>. In developed countries, much lower incidences have been achieved through aggressive screening and management of preeclampsia. Similar findings were reported by Zuspan <sup>[3]</sup> and Gilstrap et al <sup>[4]</sup>.

Preeclampsia and eclampsia are major causes of maternal and perinatal morbidity and mortality. Transient neurological deficit is common but persistent deficits are rare <sup>[5]</sup>. Renal failure complicating eclampsia may result in prolonged renal insufficiency. Eclampsia accounted for 67.2% of obstetrics causes of acute renal failure requiring dialysis <sup>[6]</sup>. Hepatic dysfunction is a result of associated liver parenchymal damage, periportal necrosis and rarely, hepatic rupture. Preeclampsia has been shown to be associated with diastolic dysfunction, increase cardiac work, and left ventricular indices with evidence of myocardial damage. Cerebrovascular accidents are common; in the long term cardiac and metabolic disease risks are increased <sup>[7]</sup>.

In the fetus preterm delivery, asphyxia and intrauterine growth restrictions commonly associated with the disease increase the perinatal mortality <sup>[8]</sup>. Pregnancy related complications like abruptio placentae, HELLP syndrome are frequent associations and pose a risk to both mother and fetus. Pre-eclampsia and eclampsia are independent risk factors for cerebral palsy <sup>[9]</sup>. Perinatal mortality is increased and neonatal intensive care admission is common.

During the study period, 200 cases of Eclampsia were managed at our centre. During same period obstetric attendance was 11,373; giving an incidence of 1.78%. The purpose of this study is to evaluate the clinical course, medical & obstetric management, complications and to study maternal and perinatal outcome.

### Material & Methods

Two hundred case records of Eclampsia patients who admitted in the Department of Obstetrics & Gynaecology, J.L.N.M.C.H Bhagalpur and data were recorded on a predesigned proforma. All the obstetrical women admitted in emergency receiving room with convulsions after 20 weeks of gestation or in postpartum period included in this study. Women with other causes of convulsion were excluded. Diagnosis of Eclampsia was confirmed by history taking, general and obstetrical examinations. Specific investigations for Eclampsia- urine albumin by heat coagulation method, CBC, LFT, RFT, Coagulation profile, platelet count and Fundoscopy were performed. All patients were treated with standard intramuscular regimen as recommended by Pritchards <sup>[10]</sup> which consisted of 4gm Magnesium Sulphate given intravenously and 5 gm given intramuscularly on each buttock. Subsequently 5 gm of magnesium sulphate given intramuscularly every 4 hours up to 24 hours following delivery or convulsion whichever is last. Severe

hypertension was treated with Inj. Labetalol, initial dose 20 mg IV, followed by 40-80 mg every 10 minutes, until therapeutic response is achieved [11]. As soon as women were stabilized, labour was induced, accelerated or caesarean section done if obstetric indication demanded it. Data were prospectively collected and information recorded includes obstetrics characteristics, gestational age, mode of delivery, intensive care unit admission, time of eclampsia in relation to labour and maternal and fetal complications. All patients were followed up from admission with eclamptic convulsions through to discharge, for the duration of their hospital stay. Data were analysed using descriptive statistics. The corresponding p values at 5% level of significance were computed.

**Results**

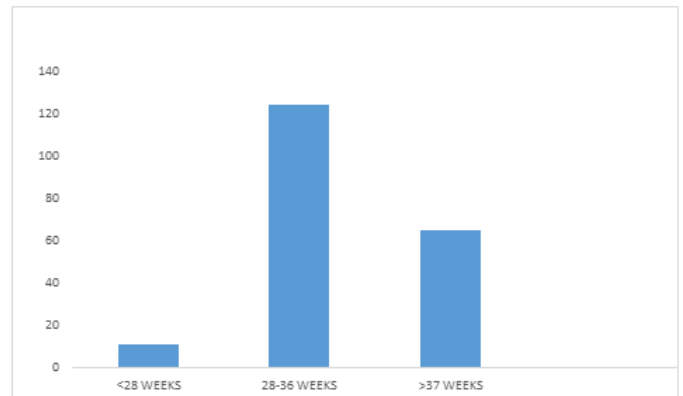
During study period, total 200 Patients with Eclampsia. Out of these, Antepartum Eclampsia were 141(70.5%), Intrapartum Eclampsia were 24 (12%), Postpartum Eclampsia were 35(17.50%) . Out of them, 70% were in age group of 18-25 years, 20.6% were in 26-30 years and 9.4% were above 30 years. Out of these, only 1.86% was booked and rest of them were unbooked 98.14%. Out of them 58.6% were primi, 36.8% were multipara and 4.6% were grand multipara. It is important to note that the classical triad used to diagnose pre-Eclampsia was not present in all women with Eclampsia.

**Table 1: clinical findings (n= 200)**

Clinical Finding		Number	Percentage (%)
Hypertension:			
Severe	> 160/110	138	69
Mild	< 160/110	42	21
Relative	< 140/90	20	10
Proteinuria:			
Absent		16	8

Significant	(≥ 2 +)	184	92
Edema:			
Absent		10	5
Pedal		136	68
Generalized		54	27

Table 1 shows that 69% had severe hypertension, 10% had BP < 140/90 mm of Hg. Significant proteinuria was present in 92% cases. Generalized oedema was present in 27% cases at the time of admission. Our clinical findings were comparable to that reported by Sibai [12]. This graph 1 shows that maximum patients of Eclampsia 124 (62%) belonged to GA 28 -36 weeks, 65 (32.5%) patients belonged to GA > 37weeks and only 11 (5.5%) belonged to GA < 28 weeks. This shows the incidence of Eclampsia is very low before 28 weeks of gestation.



Graph 1: Distribution of cases according to Gestational Age (n = 200)

Table 2: Outcome of Pregnancy

Sn.	Type of Delivery	No. of Cases	Percentage (%)
1.	Vaginal	165	82.5
	(a) Non-instrumental	146	73
	(b) Instrumental	09	4.5
2.	Cesarean Section	33	16.5
3.	Subtotal Hysterectomy	00	00
4.	Died Undelivered	02	1.0

This table shows that out of 200 women, 2 died undelivered, 165(82.5%)had vaginal delivery. The incidence of caesarean section was 33(16.5%). Maternal Outcome:

Table 3: Maternal Complications (n =203)

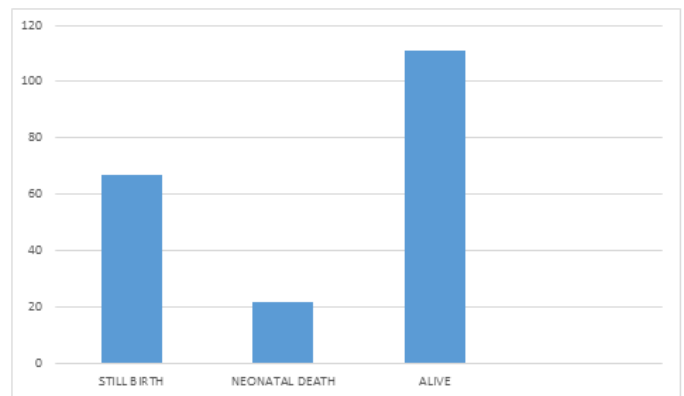
Sn.	Maternal Complications	No. of Cases	%
1	Pulmonary edema	34	40
2	Abruptio Placentae	18	21.18
3	CVA	11	12.94
4	PPH	10	11.76
5	Renal failure	06	7.06
6	HELLP Syndrome	05	5.88
7	Aspiration Pneumonia	01	1.18
Total		85	100

Table 3 summarizes significant maternal complications in Eclampsia. The common complications were pulmonary oedema in 34 (40%), Abruptio placenta in 18(21.18%), CVA in 11 (12.94%), PPH in 10 (11.76%), renal failure in 6 (7.06%), HELLP Syndrome in 5 (5.88%), and Aspiration Pneumonia in 1 (1.18%) cases. None of the surviving women had evidence of neurological deficit or seizures at the time of discharge.

Table 4: Maternal Mortality (n = 20)

Sn.	Maternal Death	No. cases	Percentage (%)
1.	CVA	6	30
2.	Pulmonary Embolism	5	25
3.	Pulmonary Edema	5	25
4.	CCF	3	15
5.	Multi Organ Failure	2	10
Total		20	100

There were 20 maternal deaths out of 200 . The various causes for death were CVA in 6 (30%), Pulmonary Embolism in 5 (25%), pulmonary oedema in 5 (25%), CCF in 3 (15%) and multi organ failure in 2 (10%). However they were all admitted in a moribund state. The 200 pregnancies resulted in 197 births (3 patients died undelivered).There was 67 still births and 22 neonatal deaths for a total perinatal mortality of 44.5% which is largely due to prematurity. 55.5% patients had live and healthy babies. Most of the patients had low birth weight, 65.5% had birth weight <2.5 kg and 14% had birth weight< 1.5 kg.



Graph 2: Perinatal outcome

**Discussion**

The high incidence of Eclampsia can be reduced by proper antenatal care and admitting and treating mild cases of hypertensive disorder of pregnancy cases and training the Medical Officers at the Peripheral Health Centers regarding immediate management of Eclampsia. Pregnancies complicated by Eclampsia are associated with poor maternal and perinatal outcomes. The reported maternal mortality ranges from 0.4% to 14% depending on the experience and facilities of the reporting centre, as well as the condition of the women on admission to the centre<sup>[13]</sup>. Magnesium sulphate was commonly used drug as anticonvulsant. In our study 68.9%had no convulsion after loading dose,30.2% had subsequent seizures after

receiving loading dose and needed additional anticonvulsant drug. These findings emphasize the need for close monitoring of all women with Eclampsia during and labour and postpartum. Many referring doctors have little or no experience regarding management of Eclampsia. It is recommended that the women should be stabilized regarding blood pressure and control of convulsions before transport and they should be sent in an ambulance with medical personnel in attendance. Tertiary care centre should have a backup with facilities to manage critical maternal complications and provide intensive care to the immature infant.

### Conclusion

This study highlights that we are still facing the challenges of this life-threatening complication. Depicting the severe disease spectrum, it reflects upon the unmet need of prenatal care in our community. The community should be educated regarding importance of antenatal care specially during last trimester. Immediate referral to a tertiary care centre is necessary in all patients with morbid symptoms of pregnancy-induced hypertension. Early delivery by caesarean section & upgrading neonatal facilities can improve the maternal as well as perinatal outcome. Vigilant Antenatal, Intranatal & Postnatal management of all such patients will improve maternal and foetal outcome related to Eclampsia.

### References

1. Vigil-De Garcia P. Maternal death due to eclampsia and HELLP syndrome. *Int J Gynaecol Obstet.* 2009;97(4):90–94. [[Google Scholar](#)]
2. Ross MG, Meyer BA, Telavera F, Ramus RM. Eclampsia Overview. *Medscape* 253960. 2011;1–13. [[Google Scholar](#)]

3. Zuspan FP. Problems encountered in the treatment of pregnancy-induced hypertension. *Am J Obstet Gynaecol.* 1978; 131: 591-7
4. Gilstrap LC 3rd, Cunningham FG, Whalley PJ. Management of pregnancy-induced hypertension in the nulliparous patients remote from term. *Semin Perinatol* 1978;2:73-81
5. Ross MG, Meyer BA, Telavera F, Ramus RM. Eclampsia Overview. *Medscape* 253960. 2011;1–13. [[Google Scholar](#)]
6. Miquil M, Salmi S, Moussaid I, Benyounes R. Acute renal failure requiring dialysis in Obstetrics. *Nephrol Theor.* 2011;7(3):178–181. [[PubMed](#)] [[Google Scholar](#)]
7. Melchiorre K, Sutherland GR, Beltabaeva A, Liberati M, Thilaganathan B. Maternal cardiac dysfunction in women with preeclampsia at term. *Hypertension.* 2011 Epub. [[PubMed](#)] [[Google Scholar](#)]
8. Agida ET, Adika BI, Jibril KA. Pregnancy outcome in eclampsia: a 3 year review. *Nig J Clin Pract.* 2010;13(4):394–398. [[PubMed](#)] [[Google Scholar](#)]
9. Kulak W, Okurowaska-Zawada B, Sienkiewicz D, Pasko-Patej G, Krajewski-Kulak E. Risk factors for cerebral palsy in term infants. *Adv Med Sci.* 2010;55(2):216–221. [[PubMed](#)] [[Google Scholar](#)]
10. Pritchard JA, Cunningham FG, Pritchard SA. The Parkland Memorial Hospital Protocol for treatment of Eclampsia: Evaluation of 245 cases. *Am J ObstetGynaecol* 1984;148:951-63
11. Pickles CJ, Broughton, Pipkin E; A randomized controlled trial of Labetalol in the treatment of mild

to moderate pregnancy induced hypertension Br J.  
Obstet. Gynaecol. 99, 964:1992

12. Sibai BM Eclampsia VI. Maternal- Perinatal outcome in 254 consecutive cases. Am J Obstet Gynaecol 1990;163:1049-55
13. Desai P, Badheka H , Barbhaiya M. Changes in perinatal outcome due to Magnesium Sulphate in Eclampsia. J Obstet Gynaecol India. 1995; 45:732-5