

Eclampsia: Maternal and Fetal Outcome

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ABSTRACT

Eclampsia is the leading cause of maternal and perinatal mortality as well as morbidity. This prospective study was carried out at a tertiary institute from Jan 2008 to Dec 2010.

Aim and objectives: (1) To evaluate the rate of eclampsia in antenatal women attending our hospital, (2) to evaluate the epidemiological factors and clinical presentation in women with eclampsia, (3) to analyze the maternal and perinatal outcome in women with eclampsia, and (4) to formulate strategies to improve the maternal and perinatal outcome.

Materials and methods: Fifty-five women with eclampsia were evaluated over a period of 3 years.

Results: During the above period, total number of deliveries were 6,100 out of which 55 were eclampsia giving incidence of 0.9%. The women with eclampsia were treated with magnesium sulfate. Around 70.91% of women had antenatal eclampsia, 18.18% of women had intrapartum eclampsia and 10.91% of women had postpartum eclampsia. Out of 55 women, maternal mortality was 5.45% and perinatal mortality was 25.45%.

Conclusion: Incidence of eclampsia is higher in developing countries, like India. Magnesium sulfate is an effective anticonvulsant drug leading to cessation of convulsions in 100% cases. Magnesium sulfate toxicity was not observed in any case, indicating effectivity of clinical monitoring during magnesium sulfate therapy.

Keywords: Eclampsia, Maternal outcome, Perinatal outcome.

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INTRODUCTION

Eclampsia is an unpredictable multiorgan disease unique to pregnancy. Treatment of this disease still remains a challenge. Antepartum eclampsia is more dangerous than postpartum eclampsia. Incidence of eclampsia in India is 0.94 to 1.8% in all pregnancies.¹

Magnesium sulfate is most preferred anticonvulsive agent and has been very effective in reducing maternal and perinatal mortality and morbidity. Cerebral anoxia, brain damage and coma are the sequelae of eclampsia and magnesium sulfate has proved superior to diazepam with low fit recurrence and quick recovery from coma,² and the fetal salvage is improved substantially.

Suitable early intervention is required to prevent life-threatening complications. Keeping the above factors in mind, we started this study in our hospital.

AIMS AND OBJECTIVES

1. To evaluate the rate of eclampsia in antenatal women attending our hospital.
2. To evaluate the epidemiological factors and clinical presentation in women with eclampsia.
3. To analyze the maternal and perinatal outcome in women with eclampsia.
4. To formulate strategies to improve the maternal and perinatal outcome.

MATERIALS AND METHODS

This prospective study was carried out over a period from Jan 2008 to Dec 2010 at a tertiary care institute, women with eclampsia coming to our hospital or referred from outside were evaluated for demographic data, antenatal history, obstetric history, menstrual history, medical and surgical history, mode of delivery, onset of eclampsia, treatment received and maternal and fetal complications. Women with BP of >140/90, proteinuria, edema feet with convulsions were included in the study. Women with neurological disorders (epilepsy), chronic hypertension, thyrotoxicosis, systemic lupus erythematosus, hepatic and cardiac diseases were excluded from the study. All the women with severe pre-eclampsia with eminent eclampsia received prophylactic magnesium sulfate. Women with eclampsia were given Pritchard's regime of magnesium sulfate with termination of pregnancy. The outcome data was analyzed.

RESULTS

Out of 55 women recruited in this study, 72.73% (40 out of 55) were primigravidas as follows.

Demographic data
Average age—25 to 30 years
Low socioeconomic strata
Primis
39/55 (70.91%) had antepartum eclampsia
10/55 (18.81%) had intrapartum eclampsia
6/55 (10.91%) had postpartum eclampsia

Antepartum eclampsia was seen in 70.91% (39 out of 55). Four women were out of 286 women (1.40%) of pre-eclampsia who received prophylactic magnesium sulfate therapy. Effectivity of magnesium sulfate was analyzed in all cases depending on recurrence of convulsions after initiation of therapy. No women had any evidence of magnesium sulfate toxicity. Headache, vomiting were the most common presenting symptoms (Table 1).

Table 1: Clinical presentation of women with eclampsia

Clinical presentation	Number of women (n = 55)
Headache, vomiting	51 (92.73%)
Epigastric pain	18 (32.7%)
Anasarca	28 (50.91%)
Hypertension/proteinuria	55 (100%)
Sudden blindness	02 (3.64%)

Table 2: Mode of delivery of women with eclampsia

Mode of delivery	Number of women (n = 55)
Normal vaginal delivery	21 (38.18%)
Instrumental deliveries	3 (5.45%)
Cesarean section	31 (56.36%)

All women with eclampsia were treated with Pritchard's regime, and induction of labor was done.

Cesarean was done in 56.36% of women as shown in Table 2 for obstetric indications. Out of 55 women, 5.45% were maternal deaths (3/55) cause being disseminated intravascular coagulation (DIC), pulmonary edema and pulmonary embolism. Partial and total HELLP syndrome was seen in 21.81% (12/55) and 3.46% (2/55) respectively, as shown in Table 3.

Around 56.36% (31/55) women presented with eclampsia in monsoon season. (June to Aug): During this period, temperature is cooler with increased humidity and rainfall which triggers seizures.

A total of 81.82% of women (45/55) delivered live born infants and preterm deliveries were 41.82% (23/55). Perinatal mortality was 25.45% and neonatal mortality was 5.45%.

DISCUSSION

Table 4 compares the incidence of eclampsia, maternal mortality, perinatal mortality, and neonatal mortality due to eclampsia in our study with various studies.

Incidence of eclampsia in developing countries is 0.94 to 1.8%, in the present study it was 0.9%. Maximum number of women were primigravidas with age less than 25 years. Frequency of cases was seen to be increased during monsoon season (June-Aug). This probably reflects vasospasm induced by cold.³

Among 70.91% women had antepartum eclampsia, mostly with gestational age of 33 to 37 weeks. The onset of convulsion to delivery interval was very important to decide maternal and fetal outcome. Magnesium sulfate was found to be therapeutically effective and safe anticonvulsant with low fit recurrence and improved fetal salvage. Cesarean section was

Table 3: Maternal and perinatal complications in women with eclampsia

Maternal complications	Number of women
Antepartum hemorrhage	07 (30.91%)
Acute renal failure	03 (5.45%)
Sudden blindness	02 (3.64%)
HELLP syndrome	14 (25.66%)
Postpartum hemorrhage	04 (7.27%)
Pulmonary edema	01 (1.82%)
Disseminated intravascular coagulation	03 (5.45%)
Coma	01 (1.82%)
Death	03 (5.45%)
Fetal complications	Number of babies
Intrauterine growth restriction	15 (27.27%)
Prematurity	23 (41.82%)
Intrauterine death	10 (18.18%)
Neonatal mortality	3 (5.45%)
Perinatal mortality	14 (25.45%)

Multiple responses are allowed

done in 56.36% of women. There were three maternal deaths (5.45%) and the causes were DIC, pulmonary edema and pulmonary embolism. This maternal mortality coincides with Saha et al 2002 and Alam et al (Pune). Perinatal mortality in our study was 25.45% due to prematurity, meconium aspiration and septicemia which is comparable with other studies. Outcome measures were compared with other studies as shown in Table 5. Maternal outcome correlates with other studies. Perinatal outcome is poor as compared to studies from developed countries.

Lack of knowledge, illiteracy, poor transport facilities and late referral are the important causes of maternal and perinatal mortality. So, most important feature of management is education, proper antenatal checkups for early diagnosis and prevention of eclampsia. Availability of various health facilities and prompt referral to tertiary care hospital.

CONCLUSION

Young primigravidas is a major high-risk factor for eclampsia cooler climate with high humidity predisposes to eclampsia.

Time interval between eclamptic seizures and initiation of therapy is an important prognostic factor affecting maternal and perinatal outcome. Operative delivery is increased to improve fetal outcome and decrease complications. Magnesium sulfate is an effective anticonvulsant drug leading to cessation of convulsions in 100% cases. Magnesium sulfate toxicity was not observed in any case, indicating effectivity of clinical monitoring during magnesium sulfate therapy. In spite of

Table 4: Convulsion—delivery interval as an important prognostic factor

Convulsion—delivery interval in hours	Number of women (n = 55)	Adverse perinatal outcome (neonatal and perinatal mortality)	Adverse maternal outcome (death)
Less than 6 hours	22 (40.04%)	01 (1.82%)	—
6-12 hours	11 (20.02%)	01 (1.82%)	—
12-24 hours	10 (18.20%)	06 (10.92%)	01 (1.82%)
More than 24 hours	12 (21.84%)	09 (16.38%)	02 (3.64%)

Adverse maternal and perinatal outcome was associated with increase in the convulsion-delivery interval

Table 5: The maternal and perinatal outcomes with other studies

Study	Incidence of eclampsia (%)	Maternal mortality (%)	Perinatal mortality (%)	Neonatal mortality (%)
Loe Connell ⁴ et al 1981-2000	WO, 0.027	32	6.4	—
Ramteke S ⁶ et al 1992-1994	12.25	—	—	—
Alam ⁷ et al 1995	—	1.92	—	—
Ray S ⁸ et al 1998	—	26	—	—
Saha S ² et al 2002	2.9	5.5	—	22
Present study	0.9	5.45	25.45	5.45

effective magnesium sulfate therapy and tertiary care management, eclampsia still leads to maternal and perinatal mortality in developing countries.⁵ This fact stresses the importance of implementation of preventive measures for eclampsia in countries like India.

REFERENCES

1. Chesley LC. Hypertensive disorders in pregnancy. Newyork: Appleton Century Crofts 1978;p2.
2. Saha S, Saha A. Clinical audit of perinatal mortality: A reappraisal of major determinants and its prevention. J Obstet Gynecol Ind 2002;52:83-86.
3. Subramaniam V. BMC Womens Health 2007;7:18.
4. Lee W, O'Connell CM, Baskett TF, et al. Maternal and perinatal outcome of eclampsia: Nova Scotia 1981-2000 J Obstet Gynaecolcan 2004 Feb;26(2):119-23.
5. Goswami A, Kalita H. Matrnal mortality at Gauhati Medical College and Hospital. J Obstet Gynaecol India 1996 Dec:46(6); 785-90.
6. Ramteke S, Pazai S. Study of maternal mortality in rural medical college and hospital. J Obstet Gynaecol India 1996 Feb:77-84.
7. Alam M. Eclampsia: An experience of a civil hospital. Medical Journal Armed Forces India 1995 Oct:51(4):245-46.
8. Ray S, Singh A. Maternal mortality in apex hospital of Bihar. J Obstet Gynaecol India 2002 Jan-Feb:52(1):100-04.

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