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Research Article

A study on maternal and perinatal out comes in cases of eclampsia admitting to government medical college and general hospital, Anantapuramu, Andhra Pradesh, India

Shamshad Begum Shaikh*, Sandhya Jampala, Shyamala Devi S., Mallika

Department of Obstetrics and Gynecology, Government Medical College, Anantapuramu, Andhra Pradesh, India

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***Correspondence:**
Dr. S. Shamshad Begum,
E-mail: dr.maheshgajula@gmail.com

ABSTRACT

Background: Eclampsia is a life threatening emergency that continues to be a major risk factor dictating the outcome of pregnancy and is still the leading etiological factor of maternal mortality worldwide. The aim was to study the incidence of eclampsia at Government General Hospital, Anantapuramu, Andhra Pradesh, India, to evaluate the clinical course and complications and to study the maternal and perinatal outcome in eclamptic patients.
Methods: Current study is a retrospective study carried out based on the data acquired from the case records of all eclampsia patients who admitted in the department of obstetrics and gynecology, government general hospital, Anantapuramu, Andhra Pradesh, India from February 2015 to February 2016. Data was recorded in a pretested proforma and was analyzed using appropriate statistical methods.
Results: Out of a total of 8595 deliveries conducted during the study period, 50 cases of eclampsia were recorded making the incidence of eclampsia to be 0.58% in the hospital. There were no maternal deaths occurred during the study period. Total numbers of perinatal deaths due to eclampsia were 14, hence the perinatal mortality rate for eclampsia was 280/1000. Majority of the patients were unbooked (90%). 78% of patients were primigravidas and 80% of patients were less than 25 years of age. Antepartum eclampsia was seen in 72% of the cases, intrapartum eclampsia in 4% patients and postpartum eclampsia was found in 24% of the patients. Vaginal delivery was a common mode of delivery conducted in 56% of patients while 44% of the patients required caesarean section.
Conclusions: Eclampsia continues to be an important etiological factor for maternal/perinatal morbidity and mortality. The contributory factors for this being lack of proper antenatal care, low socio economic status and lack of education. There is an urgent need for proper antenatal care, proper medication (magnesium sulfate), intensive monitoring of women with eclampsia and timely hospitalization to improve both the maternal and perinatal outcome. Early presentation and timely decision to terminate pregnancy will improve the maternal and perinatal outcome.

Keywords: Antenatal care, Eclampsia, Maternal, Perinatal mortality, Morbidity

INTRODUCTION

Eclampsia is an established obstetric enigma posing huge burden over the obstetricians since times of its discovery. Eclampsia continues to be a major problem worldwide, particularly in developing countries. The word eclampsia is from the Greek term for lightning. The first known description of the condition was by Hippocrates in the 5th century BCE. Eclampsia is a condition associated with pregnancy where in there will be onset of convulsions in a woman who is having preeclampsia. Pre-eclampsia is disorder characterized by presence of high blood pressure, proteinuria, pedal edema and or other organ dysfunction. Onset may be antepartum, postpartum or

intrapartum. Most often it is during the second half of pregnancy. In India eclampsia constitutes for one of the leading causes of maternal mortality and morbidity. The incidence of eclampsia in developed countries range from 1:2000 to 1:3448 pregnancies which is much lower than in developing countries like India.[1] The incidence of eclampsia in India has been quoted to as high as 1.56%.[2]

In most cases the onset of pre-eclampsia is insidious and pathological changes occur weeks before clinically detectable hypertension and proteinuria. In addition, symptoms occur only at the end stage of disease, just before the eclamptic episode. It has been established that good antenatal care can prevent the occurrence of eclampsia, though not in all cases.[3-5]

Magnesium sulphate is most preferred anticonvulsive agent known to be very effective in reducing maternal and perinatal morbidity/mortality. Cerebral anoxia, brain damage and coma are the established sequalae of eclampsia. Magnesium sulphate is proved superior drug over diazepam (benzodiazepines) with low seizure recurrence, quick recovery from coma and improved fetal salvage.[6]

Morbidity from eclampsia is associated with acute renal failure, pulmonary edema, cardiopulmonary arrest, and aspiration.[7] The causes of perinatal death are chronic placental insufficiency, preterm delivery and placental abruption.[8,9]

METHODS

The current retrospective study was conducted from February 2015 to February 2016 and a total of 50 cases of eclampsia were managed at government general hospital, Anantapuramu, Andhra Pradesh, India. 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, CBP, LFT, RFT, coagulation profile, platelet count and fundoscopy were performed. All patients were treated with standard intramuscular regimen as recommended by Pritchard's which consists of 4 gm magnesium sulphate given intravenously and 5 gm given intramuscularly on each buttock. Subsequently, 5 gm of magnesium sulphate given intramuscularly every 4 hours upto 24 hours following delivery or convulsion whichever is last. Severe hypertension was treated with labetalol (initial dose 20 mg IV, followed by 40-80 mg every 10 minutes), until therapeutic response is achieved. As soon as women were stabilized, labour was induced, accelerated or caesarean section done if obstetric indication demanded. In all patients with eclampsia maternal outcome was measured in terms of complications like pulmonary edema, hematological disorder, renal failure, abruption, cerebral hemorrhage and maternal death. Perinatal outcome was noted in terms of pre-term births, low birth weight, need of admission in nursery, IUGR, still births and neonatal deaths. All the data was tabulated in a pretested proforma and was analyzed using appropriate statistical methods.

RESULTS

Age and parity distribution (Table 1) of the total 50 cases, eclampsia was detected in pregnant women in younger age group viz., <25 years of age and is more common in primigravida when compared to multigravida. A decreasing trend was observed in incidence of eclampsia with the advancement of age.

Table 1: Age distribution and parity.

Age (years)	Primigravida (%)	Multigravida (%)
15-20	14 (28)	-
21-25	20 (40)	06 (12)
26-30	04 (08)	04 (08)
31-35	01 (02)	01 (02)
>35	-	-

Eclampsia and maternal mortality

As per mortality of cases is concerned. All the cases were effectively managed with appropriate intervention. Most of the patients developed eclampsia well before the onset of labour (Table 2).

Table 2: Eclampsia and maternal mortality.

Type	No of cases	Alive	Dead
Antepartum	36	36	--
Intrapartum	02	01	--
Postpartum	12	12	--

Incidence of eclampsia in relation to antenatal care

The incidence of eclampsia and its sequalae were found in pregnant women who didn't received antenatal care as seen in 90% of cases and only 5 cases amounting to 10% of cases who are booked cases went in to eclampsia (Table 3).

Table 3: Eclampsia and antenatal care.

Antenatal care	Number of patients	%
Unbooked	45	90
Booked	05	10

Gestational age and onset of convulsions

In the current study, convulsions are seen commonly after 37 weeks of gestation as evident in 52.6% of case and no convulsions history was present in pregnant women less than 25 weeks of gestation (Table 4).

Table 4: Gestational age in weeks of patients at the onset of convulsions.

GA in weeks	Number of patients	%
20-25	-	-
26-31	08	21.1
32-37	10	26.3
>37	20	52.6

Hypertension at presentation

The blood pressure recording in most of the cases at presentation was less than or equal to 160/110 mmHg as evident in 60% of cases but blood pressure was not normal in those cases. 15% of cases presented with severe hypertension of more than 160 mmHg of systolic hypertension. However, 10% of subjects had normal blood pressures at presentation (Table 5).

Table 5: Blood pressure at presentation.

BP in mmHg	Number of cases	%
Severe ≥160/110	15	30
≤160/110	30	60
Normal	05	10

Fit to delivery interval and maternal outcome

Most (60%) of the eclamptic patients delivered their babies in less than 12-24 hours after the onset of seizures (fit to delivery interval) (Table 6).

Table 6: Fit to delivery interval and maternal outcome.

In hours	Number of patients	Live	Dead
<6	-	-	-
6-12	04	04	-
12-24	30	30	-
>24	04	04	-

Eclampsia and mode of delivery

In the current study 52% of cases delivered through normal vaginal means, while 44% people underwent lower segment caesarean section and in two cases forceps delivery were conducted. (Table 7)

Table 7: Mode of delivery.

Mode of delivery	Number of patients	%
Normal vaginal	26	52
Caesarean	22	44
Forceps/ventouse	02	04

History of seizure episodes before initiation of treatment

35 patients presented with history of less than two episodes of seizures before onset of treatment. Only one case presented with more than 5 episodes of convulsions (Table 8).

Table 8: History of convulsions before the start of treatment.

No of convulsions	No. of cases
1-2	35
2-5	14
>5	01
Coma	00

Eclampsia and its complications

A total of 13 cases amounting to 26% presented the established complications and were managed successfully. The commonest complication encountered was pulmonary edema, followed by HELLP syndrome, abruption and postpartum haemorrhage (Table 9).

Table 9: Maternal complications

Complications	Number of patients
Abruption	02
Cerebro vascular accident	01
Pulmonary edema	04
HELLP syndrome	03
DIC	01
PPH	02
Total	13

Eclampsia and perinatal outcome

There were 14 perinatal deaths in eclampsia patients, giving a perinatal mortality rate of 280/1000. The perinatal outcome is depicted in the Table 10.

Table 10: Perinatal outcome.

	No. of cases
GA at delivery	
< 37 weeks	30
> 37 weeks	20
APGAR score at 5 min	
< 6	16
≥ 6	34
Out come	
Stillbirth	04
Early neonatal death	10
Alive	36
Cause of early neonatal death	
Birth asphyxia	04
Prematurity	06
Birth weight	
Low birth weight	26
Normal birth weight	24

DISCUSSION

The incidence of eclampsia in the current study was 0.58%, which is almost similar to a study conducted by Sunitha T.H et al (0.7 %) in a tertiary hospital in Karnataka state, India.[10] However, it is observed that these figures are quite higher when compared to incidence in developed countries like the United Kingdom (UK), where eclampsia complicates only 0.05 % of total deliveries.[11]

One of the observations of the current study is that eclampsia was comparatively common in young pregnant women (80%) and that too in primigravidas (78%) tallies with the observations made a study done by Acharya G et al (71.42%).[12] The finding demands regular and compulsory screening of young pregnant ladies for preeclampsia/eclampsia.

It is a noteworthy finding that 90% of patients of eclampsia managed in our hospital were not registered with us for antenatal care. About 45% of patients did not receive any antenatal care at all and around 55% of the patients had some sort of antenatal care. Lack of antenatal care is a serious concern and appropriate steps are to be taken by the government to tackle with the menace of eclampsia. The same factor was recognized in a study conducted by Jain S et al, where in 93.99% of the study group didn't receive any sort of antenatal care.[13] Only 10% of our booked cases had presented with eclampsia.

It can be stated based on the studies conducted in developed countries that incidence of eclampsia is quite unpredictable and ranges from 31% to 87% may be attributed to atypical presentation of eclampsia like abrupt onset, development of convulsions while receiving prophylactic Magnesium sulfate or onset of convulsions after 48 hours of delivery or in patients without hypertension or proteinuria. But in developing countries, the preventable causes of eclampsia contribute to most cases of eclampsia because of poor antenatal care services.

It is observed that 72% of eclampsia was antepartum, 4% were intrapartum and 24% were postpartum. As the high prevalence of antepartum eclampsia again reiterates the need for antenatal care significance.

The finding of this study that eclampsia was present in 52.6% of patients at term gestation is similar to a study done by Marinakhanum et al where the incidence was 53%.[14]

30% of patients had severe hypertension at presentation, 10% had normal BP recording at presentation. A study conducted by Matter F et al quoted that 16 % of the patients of their study had no hypertension, 20%-54% of them had severe hypertension and 30%-60% had mild hypertension.[15] Hypertension is considered to be the hallmark for the diagnosis of eclampsia and hence all the pregnancy cases should be closely monitored for hypertension.

Cesarean section was one of the common modes of intervention in our series (44%) which is similar to a study conducted by Sunitha TH et al.[10] This study opine that eclampsia per se is not an indication for cesarean section and mode of delivery had no significant effect on the outcome of the eclamptic as cited by Ibrahim A et al.[16]

The decision to perform cesarean section should be based on fetal gestational age, fetal condition and presence of associated obstetric indications (mal presentations or the other high risk factors), cervical bishop score and maternal condition but not merely by the presence of eclampsia.

In this study on eclampsia, labour is induced with one of the methods such as usage of prostaglandins, early rupture of membranes wherein the obstetrician can monitor and await vaginal delivery once the patient is stable and convulsions are under control. Judicious and timely selection of cases for either vaginal delivery or for cesarean section is the key to improve the maternal and perinatal outcome.

There are increased rates of maternal morbidities due to eclampsia as depicted in Table 9. There were 14 perinatal deaths resulting in pregnancies associated eclampsia. The most common causes of perinatal death are prematurity, fetal growth restriction, fetal asphyxia and acidosis.

According to the Royal college of obstetricians and gynecologists (RCOG) good antenatal services will detect and treat preeclampsia and thus reduce the incidence of eclampsia. Prompt and timely treatment of eclampsia will reduce the maternal and perinatal morbidity and mortality.[17]

CONCLUSION

The study concluded that eclampsia continues to be one of the prime etiological factors for maternal/perinatal morbidity and mortality. The commonest contributory factors for this are lack of proper antenatal care, low socio economic status and lack of education. Most of these factors can be easily controlled and there is an urgent need for proper antenatal care, proper medication (magnesium sulfate), intensive monitoring of women with eclampsia and timely hospitalization to improve both the maternal and perinatal outcome. The same fact is established in the current study and also in other studies conducted in the country as well as other countries. In complicated cases early presentation to the hospital and timely decision of management as to early termination of pregnancy will certainly improve the maternal and perinatal outcome.

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