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Original Research Article

Maternal and Perinatal Outcome among Eclampsia Patients at a Tertiary Care Centre

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Abstract: Eclampsia continues to be a major problem contributing significantly to high maternal and perinatal morbidity and mortality. The aim of this study is to determine causes of fetomaternal morbidity and mortality in eclamptic women. To assess outcome in relation to no. of convulsions, time between first convulsion and delivery and mode of delivery. A descriptive cross-sectional study of all women presenting with eclampsia to MKCG Medical College, Berhampur was performed from January 2014 to January 2015. Clinical data along with the results of the investigations were collected and analysed. A study of 100 eclamptic patients was done.72% of the cases had antepartum eclampsia. 63% of the cases were referred and 72% cases had inj. $MgSo_4$ before referral. Almost equal no. of patients had caesarean section(46%) and vaginal delivery(48%). Most common causes of maternal morbidity were pyrexia and PPH i.e. 15% each. Acute renal failure occurred in 13% cases followed by pulmonary edema and septicaemia in 9% each. Total 10 cases died, out of which 30% were due to pulmonary oedema, 20% due to PPH with shock and DIC. Case fatality rate was more for multigravida, having antepartum convulsions and more than four convulsions. 60% cases died within 12hrs of admission. Perinatal mortality rate was 29.34%. As time between first convulsion and delivery increased the perinatal mortality also increased.
Keywords: Eclampsia, fetomaternal morbidity, vaginal delivery.

INTRODUCTION

Eclampsia is a multisystem disorder with complex pathogenesis. The incidence varies from country to country and even between different zones of the same country. In developed countries like UK it approximates 1 in 2000[1] while in India, prevalence of eclampsia is 1-5%and it is the cause for about 8-14% of maternal mortality i.e. 200 mothers per day(*National Eclampsia Registry*). But in developed countries also the maternal mortality rate approximates 1 percent in women with eclampsia. In perspective, this is a thousand fold increase above the overall maternal death rates for these countries[2].

Major maternal morbidity in eclampsia includes placental abruption—10 percent, neurological deficits—7 percent, aspiration pneumonia—7 percent, pulmonary edema—5 percent, cardiopulmonary arrest—4 percent, and acute renal failure—4 percent[3].

Perinatal mortality from eclampsia is reported to be 5% - 11.8% in developed countries as compared to a developing nation where eclampsia-related perinatal mortality can be as high as 40%[4,5,6]. The causes of perinatal death are chronic placental insufficiency, preterm delivery, and placental abruption[6,7].

According to FOGSI-ICOG National Eclampsia Registry the no. of cases of eclampsia is more than cases of imminent eclampsia which points to the loss of opportunity of prevention in our country.

This study was undertaken to know the maternal & perinatal outcome and the causative factors for the morbidity and mortality in the perplexing and clinically challenging disorder i.e. Eclampsia.

MATERIAL AND METHODS

The study was carried out in the Department of Obstetrics and Gynaecology, MKCG Medical College, Berhampur from January 2014 to January 2015.In this study 100 cases of eclampsia were included.

All cases of antepartum, intrapartum and postpartum eclampsia were included in the study and convulsions from other causes like cerebral malaria,

epilepsy, meningitis, encephalitis, cerebrovascular accident etc. were excluded.

Patients with gestational age of 20 weeks or more and patients with post partum convulsions, raised blood pressure, protienuria with or without edema were recorded. Time of occurrence of first seizure, anticonvulsant used, time of start of anticonvulsants, convulsion to delivery interval and maternal and fetal outcomes were analyzed.

Data was compiled in Microsoft excel and analysed. Data was represented in tabular form and appropriate statistical tests were applied.

RESULT

It is observed in Table 1, that 72% cases were of antepartum eclampsia and 13% of cases were of postpartum eclampsia.63% cases were referred from specialists while only 7% were direct admission to hospital. In the referred cases Magnesium Sulphate was started in 72% of cases.

Table 2 shows distribution of cases according to mode of delivery. Maximum no. of cases 48% were delivered vaginally and 46% of cases were delivered by caesarean section. Only 6% of cases had instrumental delivery.

Table 3 shows the various causes of maternal morbidity in cases of eclampsia. Most common causes are pyrexia and PPH i.e. 15% each followed by acute renal failure in13% cases, pulmonary edema and septicaemia in 9% cases each. Other causes were cerebral haemorrhage, HELLP syndrome, jaundice, cardiac failure, DIC, abruptio placentae, and temporary loss of vision.

In Table 4 causes of maternal mortality in eclampsia are shown. 30% of cases died due to pulmonary oedema, 20% of cases died due to PPH with shock and DIC and 10% of cases died due to cerebral haemorrhage, acute renal failure and cardiac failure.

Table 5 depicts the relationship of maternal mortality to parity, type of eclampsia and no. of convulsions.

For primigravida the case fatality rate was 7.31% and for multigravida it was 22.22%.Case fatality rate for antepartum eclampsia was 11.11%, for intrapartum eclampsia it was 6.66% and for postpartum eclampsia it was 7.69%. Case fatality for patients having more than four convulsions was 44.44%.

Table 6 shows the admission to death interval, 60% cases died within 12hrs of admission and 20% cases died in between 25 to 48 hrs of admission.

According to Table 7, 76% cases were live births, 16% were still birth and in 8% of cases mother died before delivery. There were 11 neonatal deaths and perinatal mortality rate was 29.34%.

As stated in Table 8, patients who came to hospital after first convulsion and delivered within 6 hours had 14.28% perinatal death, who delivered between 6-11 hours had 21.42% perinatal death, who delivered between 12-17hrs had 28.12% perinatal death while highest perinatal death i.e. 35.89% was in patients who delivered after 18hrs.

Table 1: Distribution of cases according to type of eclampsia and referral status

Characteristic	No. of cases	percentage
Type of eclampsia		
Antepartum	72	72
Intrapartum	15	15
Postpartum	13	13
Referral status		
Referred from specialist	63	63
Referred from FRU	30	30
Not referred	7	7
$MgSo_4$ Medication		
Started	72	72
Not started	28	28

Table 2: Distribution of cases according to mode of delivery

Mode of delivery	No. of cases	percentage
Vaginal delivery	48	48
Instrumental delivery	6	6
Caesarean section	46	46

Table 3: Maternal morbidity due to eclampsia

Morbidity	No. of cases	Percentage
Cerebral haemorrhage	3	3
Pulmonary oedema	9	9
Acute renal failure	13	13
HELLP syndrome	5	5
Jaundice	7	7
Cardiac failure	1	1
Septicemia	9	9
Pyrexia	15	15
PPH	15	15
DIC	7	7
Abruptio placentae	6	6
Temporary loss of vision	3	3

Table 4: Causes of maternal mortality in cases of eclampsia

Causes of death	No. of cases	Percentage
Cerebral haemorrhage	1	10
Pulmonary oedema	3	30
Acute renal failure	1	10
PPH with shock	2	20
DIC	2	20
Cardiac failure	1	10
TOTAL	10	100

Table 5- Relationship of maternal mortality to parity, type of eclampsia and no. of convulsions

Characteristic	No. of cases	No.of deaths	Case fatality rate
Parity			
Primigravida	82	6	7.31
Multigravida	18	4	22.22
Type of eclampsia			
Antepartum	72	8	11.11
Intrapartum	15	1	6.66
Postpartum	13	1	7.69
No. of convulsions			
1-3	91	6	6.59
>4	9	4	44.44

Table 6: Admission to death interval

Duration(Hrs)	No. of deaths	Percentage
<12	6	60
13-24	1	10
25-48	2	20
>48	1	10

Table 7: Perinatal outcome in eclampsia

Characteristics	No. of cases	Percentage
Perinatal Outcome		
Live birth	76	76
Still birth	16	16
Not delivered	8	8
Early neonatal death	11	
Perinatal death	27	

Table 8 Time interval between first convulsion to delivery and perinatal outcome

Time interval between first convulsion and delivery (hrs)	No. of cases	Perinatal death	Percentage
<6	7	1	14.28
6-11	14	3	21.42
12-17	32	9	28.12
>18	39	14	35.89

DISCUSSION

There have been a lot of advances in the field of Obstetrics but still there has been a little progress in eliminating eclampsia from developing countries like India. Eclampsia still remains a leading cause of morbidity and mortality for both the mother as well as the fetus. Eclampsia is a disease of theories and the exact cause is still unknown.

Most of the authors have reported the incidence of antepartum eclampsia to be more than 50%[8-13]. In our study,72% cases were of antepartum eclampsia which is similar to that of CY Chen et al [8] and Shakya B and colleagues [11] who reported antepartum eclampsia to be 76.3% and 77.7% respectively.63% of the patients were referred from the peripheral centres as our hospital is the only tertiary care centre available in the area. In 72 % of the cases injection magnesium sulphate was started before the patient is being transferred. This is because our government has made available inj. Magnesium sulphate($MgSo_4$)at the primary health care level. But it should ideally be 100%. All eclamptic women as well as those having severe preeclampsia should be given prophylactic $MgSo_4$ therapy. This implies that prompt and proper management of the situation early in the pregnancy or expedited referral to a tertiary centre may have improved feto-maternal outcome in the study population.

Caesarean section rates are reported increased in cases of eclampsia[9,13]. In our study also the rate of caesarean section is high as it is a tertiary care centre with many referral cases. In this study, the main indication was unfavourable cervix remote from delivery and foetal distress. The presence of eclampsia alone was not an indication for caesarean delivery, but the decision to perform a caesarean delivery was based on multiple factors which included gestational age, fetal condition, the stage of labour, and Bishop score.

Pyrexia and PPH were the most common causes of maternal morbidity followed by acute renal failure, septicemia and pulmonary oedema. Other studies also report septicaemia, pulmonary oedema, UTI and ARF to be the leading causes of maternal morbidity in eclampsia[9,14].

Out of 100 cases studied,10 mothers died with a case fatality rate of 10% which is comparable to that of other studies in India[15]. Most common cause of maternal mortality was pulmonary oedema, although other studies report cerebrovascular haemorrhage to be the most common cause of mortality. Abalos et al in their analysis for WHO, stated that the risk of death was nearly four times higher for women with pre-eclampsia when compared with non pre-eclamptic women and, for those with eclampsia, this risk increased exponentially (adjusted OR = 42.38; 95% CI, 25.14–71.44)[16].

The high maternal mortality from complications of eclampsia is attributed to the limited capability to manage such complications in a low resource setting [17,18]. However, many of the maternal complications seen in the eclamptic patients appeared to arise from delays in the timely management of pre-eclamptic patients which include the delay in seeking medical care, delay in arriving at the facility, and delay in receiving standard care at the healthcare facility[19].

Out of the 10 women who died, 4 women had more than four convulsions before coming to the hospital. This shows that late entry into the hospital is a major problem and is associated with more complications. 60% of the deaths were within 12hours of admission which shows that majority of patients were received in emergency in serious conditions, where the patient condition had already deteriorated to such a point that they could not be revived.

Recurrent seizures and prolonged interval from onset of fits to institution of therapy is associated with a poorer fetomaternal outcome. The delay in deciding to seek and reach care are related to a number of factors, like lack of health awareness and education, poverty, lack of resources, sociocultural taboos etc.

Perinatal mortality and morbidity is another concern in eclampsia patients, as the definitive treatment demands termination of pregnancy irrespective of gestational age. In the present study perinatal mortality rate was 29.34% which is similar to that of other reports[11,15,16].Perinatal deaths were least in those patients who delivered within 6 hours of first convulsion. This emphasises the fact that early decision and prompt delivery leads to a better perinatal outcome. This fact is supported by other studies[20].

CONCLUSION

It can be concluded that better antenatal care, early diagnosis, timely referral, prompt initiation of treatment, timely decision on the mode of delivery, and the availability of specialist care during labour and post

partum period improves outcome of eclamptic patients. Awareness regarding eclampsia and availability of easily accessible and affordable health care services to rural population is important which shall be helpful in reducing eclampsia and related morbidity and mortality.

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