

Eclampsia: A Retrospective Study in a Tertiary Care Centre

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ABSTRACT

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Eclampsia is a common obstetric emergency associated with significant maternal and fetal morbidity and mortality rate. The aim is to evaluate incidence, management, perinatal & maternal morbidity/ mortality associated with Eclampsia in our hospital setting. The retrospective study was conducted over a period of one year in Obstetrics and gynaecology department of Bharati Hospital. The incidence of eclampsia in our study was 1.63%. Majority of patients were in age group of 20-25 years (69.56%) and with a gestational age of 31-35 weeks (34.78%). Among 23 patients the 13 patients (56.52%) were primigravida. 20 patients (86.95%) presented with antepartum, 1 patient (4.34 %) with intrapartum and 2 (8.69 %) patients with postpartum eclampsia. Caesarean delivery was the commonest mode of delivery in 13 (56.52%). The perinatal mortality was recorded in 6 patients (26.08%) and no maternal death occurred. Magnesium sulfate in 23 patients (99.99 %) was used for treating convulsions in eclamptic patient. Eclampsia is a life threatening complication of pregnancy, in our study there was no maternal mortality but perinatal outcome still needs to be improved. However an improvement in antenatal care, upgrading the neonatal facilities and early delivery by caesarean section can improve the perinatal outcome.

Keywords: Eclampsia, Primigravida, Antepartum, Postpartum.

INTRODUCTION

Eclampsia is defined as pre-eclampsia complicated by generalized tonic-clonic convulsions.¹ It is one of the common obstetric emergency. Although eclampsia is uncommon in developed countries, it is still a major cause of maternal morbidity and mortality world wide.² In UK, the incidence of eclampsia is 4.9/10,000 and in USA it is 4.3/10,000 deliveries.³ In India the incidence of eclampsia has been quoted as 220/10,000.⁴ Majority of the cases of eclampsia are the patients who have not received proper medical attention during their antenatal period. Eclampsia is often insidious in onset and is usually, characterized by hypertension, proteinuria, with or without edema, associated with seizures either during pregnancy, in labour or within ten days of delivery.⁵ Eclampsia occurs more commonly in last trimester of pregnancy and becomes increasingly more frequent near term. It can occur during antepartum (35% to 45 %), intrapartum (15% to 20%) or in postpartum (35% to 45%) period.⁶

The clinical features of eclampsia include seizures or postictal state, headache usually frontal, generalized oedema, vision disturbance such as blurred vision and photophobia, right upper quadrant (RUQ) abdominal pain with nausea, amnesia and other mental status changes.⁷

Pregnancies complicated by eclampsia are also associated with increased rates of maternal morbidities, such as abruptio placentae (7–10%), disseminated intravascular coagulopathy (7–11%),^{3,6,14} pulmonary oedema (3–5%), acute renal failure (5–9%), aspiration pneumonia (2–3%), and cardiopulmonary arrest (2–5%). It is important to note that maternal complications are significantly higher among women who develop antepartum eclampsia, particularly among those who develop eclampsia remote from term. Perinatal outcome in eclampsia is dependent on many predisposing risk factors like the pregnancy induced hypertension, proteinuria, number of convulsions, gestational age and also the type of eclampsia.⁸

The only cure for eclampsia is delivery of the baby and with it the placenta, which is the seat of the problem. It is likely that eclampsia will prevail until the etiology and treatment directed to this etiology, is found. Management of seizures is usually done by giving drugs like magnesium sulphate and anticonvulsants like benzodiazepines, phenytoin, phenothiazines etc are used among which magnesium sulphate is the more commonly used drug. The antihypertensives are also used to control the blood pressure and to maintain the fluid volume in the body.⁸

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The purpose of the study is to evaluate incidence of eclampsia, management and perinatal & maternal morbidity/mortality associated with it in our hospital setting.

MATERIAL AND METHOD

The retrospective study was conducted over a period of one year from October 2011 to September 2012 at Obstetrics and gynaecology department of Bharati Hospital and research centre Pune. During the review period 23 patients satisfying the inclusion criteria were taken into the study.

Inclusion Criteria:

- All pregnant women presenting with antepartum, intrapartum and postpartum eclampsia.
- Patients of all gestational ages.

Exclusion Criteria:

- Diabetes mellitus.
- Chronic medical diseases.

RESULTS

During the review period, a total of 1407 deliveries were recorded and 23 cases of eclampsia were reported, thus accounting for an incidence 1.63%.

The eclampsia condition is mainly seen in patients with age group of 21-25 years (69.56%) as shown in Fig-1 and with a gestational age of 31-35 weeks (34.78%) (Fig-2)

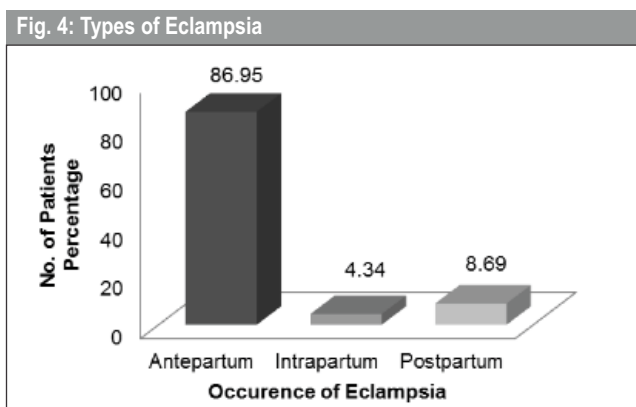
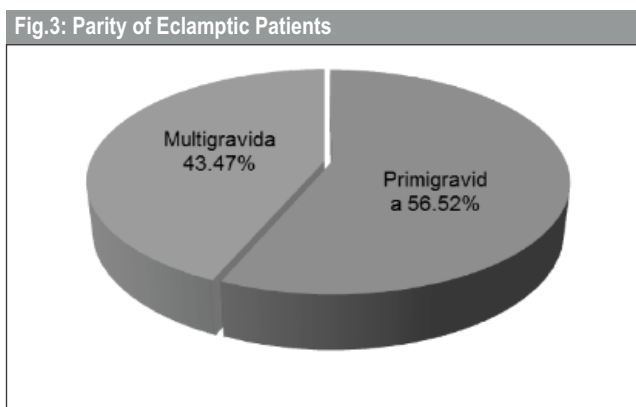
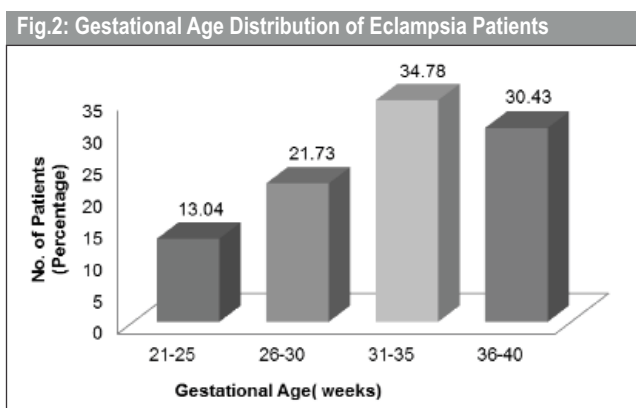
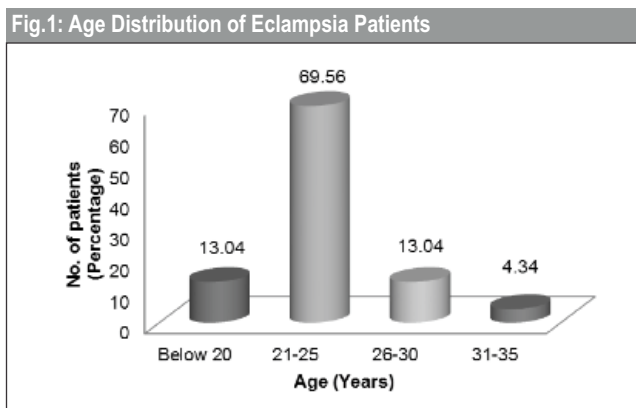
Figure.3 shows that 13 patients (56.52%) were primigravidae & 10 patients (43.37%) were multigravidae.

Figure.4 shows during study 20 (86.95%) patients had antepartum, 1 (4.34 %) patients had intrapartum and 2 (8.69 %) patients had postpartum eclampsia. Postpartum cases convulsions occurred 4-5 hours after delivery.

Majority of patients presented to hospital with the clinical presentation of convulsions (47.82%) followed by superimposed complications like headache, vomiting, epigastric pain & convulsions (17.39%) (Table No.1)

Table No.2 shows the number of convulsions in eclampsia patients, 11 patients were presented with 1 episode, 5 patients with 2 episodes, 3 patients with 4 episodes and 3 patients with more than 3 episodes of convulsions.

Table No.3 presents the overall effects of eclampsia on pregnancy outcomes. Low birth weight and preterm delivery were higher in eclampsia patients. Preterm delivery occurred in 16 patients (69.56%) and 12 newborns (52.17%) had a low birth weight of less than 2500 gm. There were Two (8.69%) intra uterine death and four (17.39) still birth. There were no maternal deaths.



Caesarean delivery was the commonest mode of delivery in 13 (56.52%) among the patients with eclampsia as shown in the Table No.3

Table No. 4 and 5 shows the ranges of systolic and diastolic blood pressures observed during study.

Table No. 6 shows degree of proteinuria at presentation. 11 patients (47.82%) had proteinuria of +4.

A combination of Labetalol and Nifedipine in 7 patients (30.43%), followed by a combination of Nifedipine+ Atenolol in 5 patients (21.73%) was used for controlling Blood Pressure. (Table No.7)

Magnesium sulfate in 23 patients (99.99 %) was used for treatment of convulsion in eclamptic patient (Table No. 8).

DISCUSSION

Eclampsia is a very serious complication of severe pre-eclampsia. Eclampsia remains one of the leading causes of maternal and perinatal mortality and morbidity in the developing world.¹² The incidence of eclampsia in this study was 1.63%. This is comparable to other Indian studies. It is also comparable to the incidence in other countries of the region.⁹ Majority of patients in our study were in age group 20-25 years. This finding is comparable with other studies in which majority of women were young between 21-29 years of age i.e 68.9%.¹⁰ Gravity also influences the incidence of eclampsia. Primigravida are more likely to develop eclampsia compared with the multigravida. Majority of the patients 13 (56.52%) in present study were primigravida. Previous studies also showed higher prevalence of primigravida i.e 58%.¹¹ In our study, most of the patients 18 (78.26 %) were presented at gestational age less than 37 weeks and 5 (21.73%) patients were presented with more than 37 weeks of gestational age. Relatively more cases occurred before 37 completed weeks in the study from UK (44%).¹²

In the present study, 60% of eclampsia cases had antepartum, 28% cases had intrapartum and 12% cases had postpartum eclampsia. In a study by Chowdhury et al¹³ revealed that 65% of cases had antepartum eclampsia.

Mode of delivery is very important because delivery is the only cure for eclampsia and it must take as early as possible after treatment begins. Delivery is always the ultimate goal of treatment and will be attempted regardless of how far along the pregnancy has progressed. In our study caesarean delivery is the common mode of delivery. Caesarean section was the predominant mode of delivery among eclamptic patients as reported by several studies. If convulsions are effectively controlled and patient is stabilized, clinician can await spontaneous vaginal delivery after inducing labour.¹⁴

Table 1: Clinical presentation of Eclampsia

Clinical Presentation	No. of patients	%
Headache + vomiting+ giddiness	31	3.04
Epigastric Pain +headache	1	4.34
Generalized body swelling +convulsions+ dizziness	1	4.34
Convulsions	11	47.82
Headache+ vomiting +convulsion + Epigastric pain	4	17.39
Headache +convulsion +vomiting +blurring vision	3	13.04

Table 2: Number of convulsions in Eclampsia Patients

No. of Convulsions	No. of Patients	Percentage
1 episode	11	27.27
2 episodes	5	20.00
3 episodes	4	25.00
More than 3 episodes	3	33.33

Table 3: Obstetric outcome in Eclampsia patient (n=23)

Obstetric outcome	No. of patients	Percentage
Gestational age at delivery (wk)		
< 37 (Pre term)	16	69.56
Term	7	30.43
Mode of delivery		
Normal	10	43.47
C-sectio	n13	56.52
Perinatal outcome		
Alive Babies	17	73.91
Intra uterine death	2	8.69
Still Birth	4	17.39
Birth Weight		
< 2.5 Kg	12	52.17
≥ 2.5 kg	5	21.73

Table 4: Systolic Blood Pressure at the time of admission

Systolic BP in mm	HgNo. of patients	Percentage
≤ 130	1	4.35
140-14	96	26.09
150-159	7	30.43
≥ 160	9	39.13

Table 5: Diastolic Blood Pressure at the time of admission

Diastolic BP in mmHg	No. of patients	Percentage
Less than 9	01	4.35
90-99	4	17.39
100-109	5	21.74
≥ 110	13	56.52

Table 6: Urine albumin Levels in Eclampsia Patients

Albumin	No. of Patients	Percentage
0/Trace	2	8.69
+1	5	21.73
+2	0	0
+3	5	21.73
+4	11	47.82

Table 7: Drugs for Controlling Blood Pressure

Drugs	No. of patients (%)	Percentage
Nifedipine	4	17.39
Amlodipine	4	17.39
Labetalol+ Nifedipine	7	30.43
Labetalol + Nifedipine + Methyldopa	3	13.04
Nifedipine + Atenolol	5	21.73

Table 8: Management of Eclampsia Condition

MgSO4	No. of Patients	Percentage
Loading Dose	12	52.17
Loading dose+ Maintenance dose	11	47.82

There were 6 neonatal deaths among eclamptic patients (26.08%), which is comparatively lower than that reported in a retrospective study of G.Acharya (31.25%)¹⁵ and the study of Swain S (38.6%).⁴

Maximum blood pressure that we observed in our study was 230/130 mm of Hg. Thirteen (56.52%) patients had diastolic blood pressure ≥ 110 mmHg and 9 (39.13 %) patients had systolic blood pressure ≥ 160 mmHg. Majority of them had proteinuria at the time of admission. G. Acharya and S. Schultz, 1991 reported severe hypertension in 57.14% of cases and proteinuria in all cases at the time of admission.¹⁵ These findings suggest that hypertension and/or proteinuria are risk factors for development of fits, but fits can also occur without preceding hypertension and or proteinuria.

Management of eclampsia consists of prevention or treatment of seizures, control of blood pressure and ultimately, delivery of the infant. High blood pressure can damage the placenta and cause the death of the unborn child. This high blood pressure can affect the brain, kidney, liver, and lungs. So, Antihypertensive medications are used to maintain diastolic blood pressure < 110 mm Hg.⁷ A combination of labetalol and nifedipine in 7 patients (30.43%) were mostly prescribed to control blood pressure.

Magnesium sulfate is the most commonly used drug for treatment in eclamptic patient. Twenty three patients (99.99%) received magnesium sulphate regime. It is understood that treatment of eclampsia is symptomatic as underlying cause is not clearly known. In general, aim of

treatment in eclampsia is prevention of further convulsions as it is the recurrent convulsions may lead to significant cerebral anoxia and associated with adverse outcome. The greater efficacy of magnesium sulphate compared to diazepam or phenytoin for prevention of recurrence of fits is now accepted worldwide.^{16,17,18}

CONCLUSION

Eclampsia still remains a major cause of perinatal loss in many countries, as the exact cause for its occurrence is unknown. The incidence rate in our study is found to be 1.63% which is on par with the incidence rate of other studies conducted in this region. The perinatal mortality rate (26.08%) is very less in our study but low birth weight is recorded in many patients and no maternal death has been occurred. Magnesium sulfate has been shown to be an effective treatment option for the prevention of eclampsia. However early diagnosis of eclampsia patients, better antenatal care, early management of pregnancy induced hypertension, early resuscitative measure and good neonatal care facilities can improve the perinatal outcome.

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