

Eclampsia- A Retrospective Study in a Tertiary Care Centre of Rural Bihar

Rashmi Verma¹

¹Associate Professor, Department of Obstetrics and Gynaecology, Katihar Medical College and Hospital, Bihar.

ABSTRACT

BACKGROUND

Eclampsia is an acute and life-threatening obstetric emergency associated with significant maternal and foetal morbidity and mortality. The aim of the study is to evaluate the incidence, management, perinatal and maternal morbidity and mortality in eclampsia patients.

METHODS

This is a retrospective study conducted over a period of two years from January 2017 to December 2019 at a tertiary care hospital. Details and data obtained from the records were analysed. Out of 14594 deliveries conducted at the hospital, 300 cases of eclampsia were selected. All pregnant women presenting with antepartum, intrapartum and postpartum eclampsia were included in the study. Patients with diabetes mellitus and other chronic medical diseases were excluded.

RESULTS

The incidence of eclampsia in our study was 2.06%. Majority of patients were in the age group of 21 to 25 years (60.6%). Among 300 patients, 57% patients were primigravidae, 43% patients were multigravidae, 80% patients presented with antepartum eclampsia, 5% with intrapartum eclampsia and 15% with postpartum eclampsia. The commonest mode of delivery was caesarean section in 84.3% patients. The perinatal mortality was 6.3% and maternal mortality was 1.6%. MgSO₄ was used for treating convulsions. No complications were noted in 242 (80.6%) patients, while 18 (6%) had HELLP syndrome, 5 (1.6%) had acute renal failure, 5 (1.6%) had pulmonary oedema, 4 (1.3%) had DIC and 5 (1.6%) deaths occurred. Apgar score of 7 to 10 was noted in 198 (66%) babies and 211 (70.3%) were preterm. There were 16 (5.3%) IUD and 3 (1%) still births.

CONCLUSIONS

Eclampsia is a prime aetiological factor for maternal and foetal morbidity and mortality. However, with early recognition, an improvement in antenatal care, upgrading the neonatal facilities and early delivery by caesarean section can improve the perinatal outcome. Low dose MgSO₄ is effective in controlling convulsions in eclampsia.

KEYWORDS

Eclampsia, Primigravida, Antepartum, Postpartum, Low Dose MgSO₄, Caesarean Section

Corresponding Author:

*Dr. Rashmi Verma,
Flat-401, Sukh-Smriti Apartment,
Opposite Pillar No. 74,
Mangal Market, Raja Bazar,
Bailey Road, Patna- 800014, Bihar, India.
E-mail: ais_25@yahoo.com
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BACKGROUND

Eclampsia is derived from a Greek word, meaning “like a flash of lightening”. In 1969 Varandaeus coined the term eclampsia in a treatise on gynaecology.¹ Eclampsia is defined as preeclampsia complicated by generalised tonic – clonic convulsions.² Although, Eclampsia is uncommon in developed countries, despite advances in detection and management, it is still a major cause of maternal morbidity and mortality worldwide.³ In UK, incidence is 4.9/10,000, in USA it is 4.3/10,000.⁴ Eclampsia has been reported as number one killer in terms of maternal mortality in recent years in various studies.⁵ In India, the incidence of eclampsia has been quoted as 220/10,000.⁶ The onset of eclampsia is often insidious and is usually, characterised by hypertension, proteinuria, with or without oedema, associated with seizures either during pregnancy, in labour or within 10 days of delivery.⁷ Majority of the cases of eclampsia are those who have not received proper medical attention during their antenatal period. 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.⁸

The clinical features of eclampsia include seizures or postictal state, headache usually frontal, generalised oedema, vision disturbances such blurred vision and photophobia, right upper quadrant (RUQ) abdominal pain with nausea, amnesia and other mental status changes.⁹ Pregnancies complicated by eclampsia are also associated with increased rates of maternal morbidities, such as abruption placentae (7-10%), disseminated intravascular coagulopathy (7-11%),^{4,8,10} pulmonary oedema (3-5%), acute renal failure (59%), aspiration pneumonia (2-3%), and cardiopulmonary arrest (2-5%). Maternal complications are significantly higher among women who develop antepartum eclampsia, particularly those who are 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.¹¹ foetal complications are thought to arise as a result of placental hypoperfusion. These include high foetal loss rate, intrauterine growth retardation, and small for date's infants and increased perinatal mortality. Though exact etiopathogenesis of eclampsia is not well understood, defective placentation and endothelial dysfunction are considered to be the core features. Eclampsia is found to be more common in rural population, young age, unbooked cases and primigravida.¹²

Although all cases of eclampsia are not preventable but maternal and foetal outcome can be improved with good antenatal care, early detection of signs and symptoms of preeclampsia, prompt treatment and timely termination of pregnancy. This study was done to evaluate the incidence, management, perinatal and maternal morbidity and mortality in eclampsia patients.

METHODS

This is a retrospective study done over a period of two years from Jan 2017 to Dec 2019 in Obstetrics and Gynaecology department of Katihar Medical College and Hospital. During the review period, 300 patients satisfying the inclusion criteria were included in the study. The relevant data was collected from the labour room register and the medical record department. Approval for the study was obtained from the hospital ethical committee. Out of 14594 pregnant women coming to the obstetrical department for delivery during the study period, 300 cases of eclampsia were selected. Analysis was done in reference to the age, parity, gestational age, blood pressure at the time of admission, severity of proteinuria, maternal complications and mortality, mode of delivery and perinatal outcome. The occurrence of convulsions that cannot be attributed to other causes, associated with signs of pre-eclampsia during pregnancy, labour or within 7 days of delivery were diagnosed as having eclampsia. Major complications and maternal outcome along with foetal outcome were observed, tabulated, analysed and presented.

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 14594 deliveries were recorded and 300 cases of eclampsia were selected, thus amounting to an incidence of 2.06% at our centre. Majority of the patients presented to the hospital with clinical presentation of convulsions (62%) followed by superimposed complications like headache, vomiting, epigastric pain and convulsions. Figure 4. During the study, (80%) had antepartum, (5%) had intrapartum and (15%) had postpartum eclampsia. All the cases were unbooked. 105 patients presented with 1 episode, 65 with 2 episodes, 55 with 3 episodes and 75 with more than 3 episodes. Preterm delivery was observed in 70.3% cases of eclampsia patients. It is important to analyse this data because preterm deliveries are fraught with the risk of respiratory distress and other perinatal complications in new-born and the baby is more likely to need neonatal intensive care facilities if delivered prematurely. There were 16 intrauterine deaths and 3 stillbirths as shown above. 64.6% low birth weight of less than 2500 gm was observed in eclampsia patients APGAR score of 7 to 10 was observed in 66% fetuses, 4 to 6 in 26.6% and 0 to 3 in 7.3%.

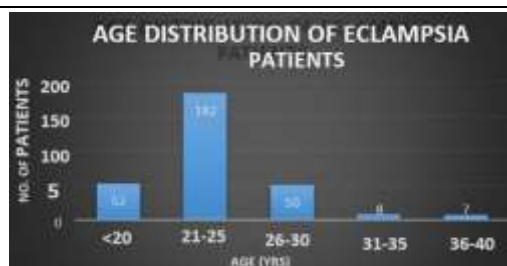


Figure 1. Eclampsia was Mainly Seen in 60.6% (21-25 yrs.) Followed by 17.3% (<20 yrs.) and 16% (26-30 yrs.)

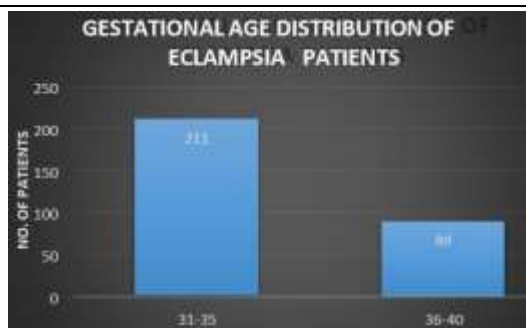


Figure 2. Increased Incidence of 70.3% was Found in Gestational Age of 31-35 Weeks. 29.6% were of 36-40 Weeks Gestational Age

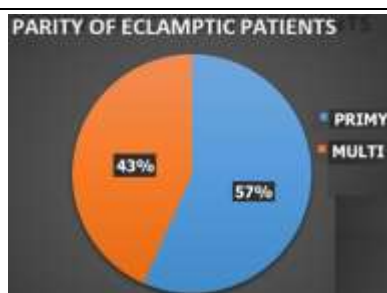


Figure 3. 57% Patients Were Primigravidae and 43% were Multigravidae

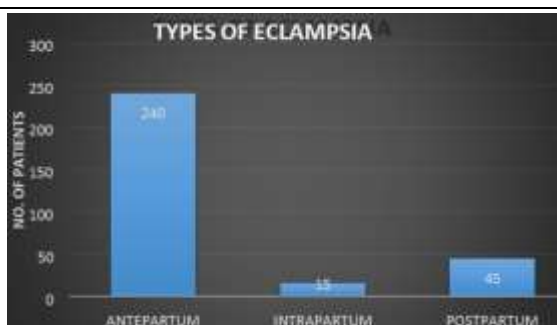


Figure 4. Occurrence of Eclampsia

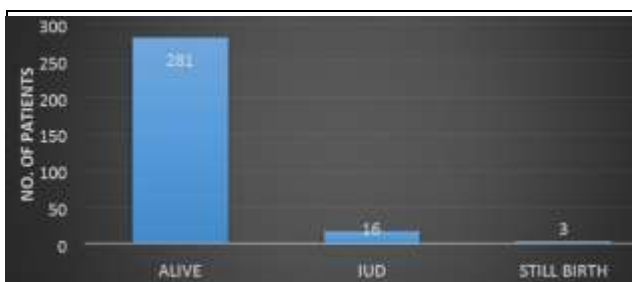


Figure 5. Obstetric Outcome in Eclampsia Patients

Caesarean delivery was the commonest mode of delivery in 84.3% eclampsia patients due to non-progress of labour. A combination of labetalol and nifedipine in 217 patients, followed by nifedipine in 55, a combination of labetalol + nifedipine + methyldopa in 15 cases, amlodipine in 8 cases, nifedipine + atenolol in 5 patients was used for controlling blood pressure. Magnesium sulphate was used in 82% patients for the treatment of convulsion in eclamptic patients. No complications were noted in 242 patients, 18 had HELLP Syndrome, 5 had acute renal failure, 5 had pulmonary oedema. Less commonly observed complications were septicaemia, post and antepartum haemorrhage and disseminated intravascular coagulopathy. 5 patients died in postpartum period.

DISCUSSION

An eclamptic seizure occurs in 2 to 3% of severely preeclamptic women not receiving antiseizure prophylaxis.¹³ Eclampsia remains one of the leading causes of maternal and perinatal morbidity and mortality in the developing world.^{2,3} The incidence of Eclampsia in this study was 2.06% which is comparable to other Indian studies and in other countries of the region.¹⁴ The present study was compared with studies conducted in developing countries to conclude in wider perspective. In our study, incidence of preeclampsia was 2.06% as compared to the study by Swain et al (2.2%) and sultana et al (3.23%). The lack of antenatal care was the major contributory factor. The high incidence of eclampsia in our study is because of high referral rate from nearby urban and rural areas. It also indicates that still in some section of our society, there is lack of sensitization on eclampsia and they are out of reach of the available health benefits. Factors like poverty, lack of education, superstitious beliefs and bad communications delay most of the patient to reach the health care provider. Majority of the patients were in the age group of 20-25 years as compared to Swain et al (<20 years) and Sultana et al (25-34 years). This finding is comparable with the other studies in which majority of the women were young between 21-29 years of age i.e. 68.9%.¹⁵ There was high prevalence of eclampsia in primigravida 57% in present study as compared to Swain et al (84%) and Sultana et al (41.17%).^{6,16} Previous studies also reported the higher prevalence in primigravida 58%.¹⁷ The incidence is still higher compared to the developed countries like UK, 0.05% of total deliveries. This finding demands regular and compulsory screening of young pregnant women especially primigravidae for preeclampsia/eclampsia. It was noticed that these women who developed eclampsia were unbooked that means they had never received antenatal checkup. Lack of antenatal screening is a serious concern. Routine screening methods during antenatal checkup helps to identify the eclamptic patients although it may not always be predictable and preventable. In our study most of the patients 70% presented at gestational age less than 37 weeks and 30% at more than 37 weeks.⁵

In the present study, 80% cases had antepartum eclampsia, 5% had intrapartum and 15% has postpartum eclampsia. In a study by Choudhary et al¹⁸ revealed that 65% of the cases had antepartum eclampsia. This finding suggests the importance of antenatal screening during pregnancy. Now-a-days, the pathophysiology of eclampsia remains misunderstood. It is difficult to establish the risk factors. It may occur in an atypical and unforeseeable form in well followed patients, without risk factor. The diagnosis should be done quickly for an adapted treatment and obstetrical management. Maximum blood pressure observed in our study was 210/130 mm Hg. Majority of them had proteinuria at the time of admission. G Acharya and S. Schultz, 1991 reported severe hypertension in 57.14% cases and proteinuria in all cases at the time of admission.¹⁹ Management of Eclampsia consists of prevention, or treatment of seizures, control of blood pressure and timely delivery of the foetus. Antihypertensive medications are used to maintain the diastolic blood pressure <110 mm Hg.⁹ A combination of labetalol and nifedipine was used in (72%) patients to control the blood pressure. Labetalol is being used more frequently in this setting. Its onset of action is more rapid than hydralazine, reflex tachycardia does not occur and there are few maternal or neonatal side effects.

Magnesium sulphate is the most common drug used for the treatment of eclamptic patient. Immediate delivery is indicated for uncontrollable BP, persistent severe systemic symptoms, foetal distress, renal function deterioration and HELLP syndrome or attainment of 34 weeks gestation. During the postoperative care, patient should be monitored in recovery room for the next 12-24 hours and magnesium sulphate infusion should be continued to prevent eclampsia. The aim of treatment in eclampsia is prevention of further convulsions as it is the recurrent convulsions that may lead to significant cerebral anoxia and is 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.^{20,21,22}

Perinatal mortality at our center was 6.3% as compared to Swain et al (13.9%)⁶ and Sultana et al (23.52%).¹⁶ In our study the incidence of IUD was 5.3% compared to 25% of Swain et al.⁶ The incidence of perinatal mortality is low in the study which shows that effective neonatal care with NICU with a good backup by efficient pediatricians will bring out better foetal outcome. Mode of delivery is very important because delivery is the only cure for eclampsia, and it must be taken as early as possible after treatment begins regardless of how far the pregnancy has progressed. In our study caesarean delivery (84.3%) is the common mode of delivery. Similar observations were found in studies by Manjusha et al and Choudhary.^{23,24} It was also reported by other studies as predominant mode of delivery. If convulsions are controlled and the patient is stabilized, then spontaneous vaginal delivery can be awaited after induction of labour.¹⁰ Majority of the patients landed in caesarean section due to nonprogress of labour. Other indications were foetal distress, breech presentation, obstructed labour and uncontrolled hypertension. Most common labour

complication was atonic PPH, which was mostly managed by conservative measures. 2 patients landed in caesarean hysterectomy. There were 5(1.6%) maternal deaths due to eclampsia as compared to sultana et al (10.29%) and were high in Swain et al (29.5%). The principal maternal mortality risk factors were age, parity, number of convulsions and admission to the hospital.²⁵ Major complications of eclampsia in our study include HELLP (6%), placental abruption (3.3%), postpartum haemorrhage (2.6%), acute renal failure (1.6%), pulmonary oedema (1.6%), DIC (1.3%), septicaemia (1%). Low socioeconomic status, poor nutritional education, and no or irregular antenatal checkups are the probable contributors to the high prevalence of eclampsia. The diagnosis needs to be considered in any patient at more than 20 weeks gestation with any suspicious features. Prompt recognition and appropriate management minimizes the morbidity and mortality for both mother and foetus.

CONCLUSIONS

The study concluded that eclampsia is an important obstetric cause of maternal and foetal morbidity and mortality. The incidence of eclampsia is related to the level of antenatal, intranatal and postnatal care provided. Early detection and effective management of hypertensive disorders in pregnancy, early resuscitative measures and good neonatal care facilities can reduce the incidence of eclampsia and improve the perinatal outcome. Magnesium sulphate has been shown to be an effective treatment option for its prevention. Protocols for the management of fluid balance, antihypertensive and anticonvulsant therapies, should be available and reviewed regularly. The universal adoption of such guidelines in all obstetric units substantially reduce elements of substandard care.¹³ However, eclampsia can occur bypassing the pre-eclamptic state and as such, it is not always a preventable condition. Further studies are required to understand the factors associated with poor maternal and foetal outcomes in eclampsia and to prevent them.

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