Section: OBGY

Original Research Article

STUDY OF MATERNAL AND FETAL OUTCOME IN ECLAMPSIA: A DESCRIPTIVE STUDY

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Abstract

Background: The aim is to study maternal and fetal outcome in eclampsia. The objective is to evaluate incidence of eclampsia in antenatal women attending our hospital, to evaluate the risk factors in women with eclampsia, to study mode of delivery in patients of eclampsia, to analyze maternal and perinatal outcome in women with eclampsia. Eclampsia is an acute and life-threatening complication of pregnancy and is a disease unique to pregnancy. It is characterised by preeclampsia complicated with appearance of generalised tonic-clonic convulsions with or without coma. It is an obstetric emergency associated with serious maternal and perinatal complications. **Materials and Methods:** This is a descriptive study and has been conducted in the Department of Obstetrics and Gynaecology, tertiary care center. All the women presenting with eclampsia during period of 18 months in our tertiary hospital not falling in the excluding criteria and willing to participate were included in the study and Maternal and fetal outcome in these 100 patients were recorded with informed consent. **Result:** Out of 100, 55 eclampsia cases seen in 21-25 years of age, 24 in the age group <20 years, 13 between 26-30 years and 8 cases in> 30 years of age. 60 were primigravida, 24 were 2nd gravida, 12 were gravida 3 and4 were gravida 4. 56 patients were unbooked and 44 patients were bookedand there were 69 births were preterm and 31 were term deliveries. 82 were antepartum, 12 were intrapartum and 6 were postpartum eclampsia. 62 patients delivered by LSCS, 33 delivered vaginally, 2 patients had assisted vaginal delivery using forceps and spontaneous abortion was seen in 3 patients. 19 patients developed pulmonary complications, 9 patients had DIC and 7 patients developed renal failure. HELLP, cardiovascular and cerebrovascular complications were seen in 1 patient each. There were 88% live births and 12% still births, 33% NICU admission in total and the neonatal mortality was 10%.**Conclusion:**It is concluded that inadequate antenatal care and delay in women seeking help create more number of complications and thus more awareness and enabling factors need to be created toaccess antenatal facilities.

INTRODUCTION

The word eclampsia is derived from a greek word meaning “like a flash of lightening” and the first description was given by Hippocrates in the 5th century BC.[1]Inspite of extensive research, exact etiopathogenesis is not completely known yet. Defective placentation and endothelial dysfunction are considered to be the core features. In India Incidence of eclampsia ranges from 1 in 500 to 1 in 30.[2] It affects about 1.4% of deliveries and maternal mortality varies from 2%-30%. Perinatal mortality is high about 30-50%.[2] The convulsions are of GTCS type lasting about a minute followed by period of confusion or coma.Before onset of convulsions, women may complain of headache (most common),[1] blurring of vision, photophobia, nausea, vomiting, confusion or may not be associated with any preceding symptom.[1-6]

Despite recent advances in radiology, technology and medical and surgical field, use of prophylactic drugs and use of antihypertensive drugs, judicial monitoring, eclampsia still persists to be one of the major healthcare problem in pregnant women affecting both the maternal and fetal outcome severely.[7-10]The higher incidence of eclampsia and

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its complications in developing world may be attributed to early age at first pregnancy, poorly equipped maternal health care centres and under utilization of available healthcare facilities. The disease is more common in young, primigravida, twin pregnancies, multiple gestations, hydatidiform mole, antiphospholipid syndrome, positive family history and most common between 36thweek and term.[9] The risk of eclampsia to the daughter of an eclampsia patient is about 3%.[8]

Eclampsia is one of the major causes of maternal and fetal morbidity and mortality. Various maternal complications in eclampsia are seizures associated complications like status eclampsticus and aspiration pneumonia. Electrolyte imbalance and other more serious complications like disseminated intravascular coagulopathy, renal failure, elevated liver enzymes and HELLP and neurological deficits can also occur and may be life threatening.[6] eclampsia may also be associated with cardiomyopathy and most common cardiac complications seen in eclampsia may include increased work load, diastolic dysfunction, left ventricular failure and myocardial damage.[7] Other complications may include cortical blindness and later development of long term metabolic and cardiac complications.[8] Serious and untreated cases may result in maternal deaths. Fetal outcome in cases of eclampsia varies from IUD (intrauterine death) 22-25%, neonatal mortality 30% and still births.[7] In the fetus intrauterine growth retardation, preterm delivery, birth asphyxia and cerebral palsy are commonly associated with eclampsia. Pregnancy related complications associated with eclampsia like status eclampticus, DIC (Disseminated intravascular coagulopathies) and abruptio placenta put both mother and fetus at risk.

Magnesium sulfate is the drug of choice for treatment of eclamptic fits. WHO Definitive treatment is termination of pregnancy irrespective of the gestational age. Termination can be done either by Cesarean section (more common) or normal vaginal delivery.[3] Although all cases of eclampsia are not preventable but we can improve maternal and fetal outcome by good antenatal care, early detection of sign and symptoms of preeclampsia, prompt treatment and timely termination of pregnancy.

The only effective management available is delivery which, though reduces blood pressure levels significantly may not be feasible if the gestational age is less or if the foetus has still not reached viability or even if the foetus has reached viability but still preterm. In these circumstances the neonatal outcome may be unsatisfactory. Such neonates are prone to develop respiratory distress secondary to surfactant deficiency, intracranial haemorrhage, bronchopulmonary dysplasia and sepsis.

In this study, we evaluated all the patients with eclampsia to determine the maternal and fetal outcomes. The maternal outcome was evaluated in terms of specific age group incidences, parity, clinical features and complications of eclampsia along with mode of termination, ICU admissions, maternal mortality. The fetal outcomes were studied on the basis of NICU admissions, perinatal mortality, still birth and perinatal outcome.

MATERIALS AND METHODS

A descriptive observational study was conducted in the tertiary care hospital for a period of 18 months. A total number of 100 patients of generalised tonic clonic convulsion with pregnancy diagnosed as eclampsia were included in the study presenting during these 18 months. All eclamptic patients either antepartum, intrapartum or postpartum were included in the study. The collected data was represented as graphs and charts.

Sampling method and sample size: All patients of eclampsia included under the inclusion criteria in the bounded duration were studied.

Inclusion Criteria

All women with antepartum, intrapartum or postpartum eclampsia who come with history of convulsion, develop after admission or during the study period and giving written informed consent were included.

Exclusion Criteria

1. Patients who are known case of epilepsy.
2. Patients having seizures due to other causes like metabolic disturbances, intracerebral infections, space occupying lesions.
3. Patients with atypical seizures i.e not responding to magnesium sulfate therapy associated with intracerebral lesions and seizures after 48 hours postpartum were excluded.
4. Patients not giving consent.

Detailed procedure of the study conduct: The initial stabilization and immediate treatment of eclampsia was started as per thedepartment protocol in the tertiary care hospital. Injection magnesium sulfate loading dose was started and continued as per pritchards regimen as per the protocol. Antihypertensives like injection labetalol or tablet labetalol and capsule depin was started accordingly after measuring the blood pressure. History was taken from the patients and her attendants. A detailed history of age, parity, gestational age, status of booking on admission, type and nature of convulsion, the number of convulsions before admission. Events prior to convulsions including premonitory symptoms like headache, epigastric pain, vomiting, blurring of vision was noted. History of patient's antenatal care like registration for an antenatal checkup, a number of antenatal visits, monitoring of blood pressure, any medications are taken for hypertension was noted. Any known history of epilepsy, renal failure, heart disease was elicited in a detailed manner. General examination of patients like pulse, blood pressure-systolic and diastolic and temperature was recorded. Pallor, cyanosis, icterus and edema was looked for. Systemic examination of Cardiovascular system and

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respiratory system was done. Deep tendon Reflexes and urine albumin by dipstick method were checked and noted. Per abdominal examination including the height of fundus, presentation of the fetus, auscultation of fetal heart sound was done. Per vaginal examination included effacement of the cervix, dilation of cervix, station of presenting part and membrane status. Decision of lower segment cesarean section or Induction or augmentation of labor or was done according to the bishop score and patient's condition. Monitoring of pulse rate, blood pressure, knee-jerk, respiratory rate, urine output was done. In postpartum eclampsia, the duration between delivery and episode of convulsion, mode, and place of delivery was noted. Lab investigations like complete blood count, serum electrolytes, liver function, renal function test, ABO-Rh, urine complete examination,PT INR was sent on admission. Obstetric sonography was performed as and when indicated and necessary. Maternal Outcome was studied in terms of: Pulomary complications, Fever, DIC, Hepatis and renal dysfunction, cardiomyopathies, cerebrovascular accidents and HELLP syndrome. Post delivery neonatal outcome was studied on the basis of APGAR at birth and 5 minutes, nicu admission, still birth and intrauterine death. Weight of the fetus and number of days of stay in nicu along with any perinatal mortality was noted. Fetal outcome will observed in terms of: APGAR at birth and at 5 min, Birth weight, NICU admission,perinatalmortality.

RESULTS

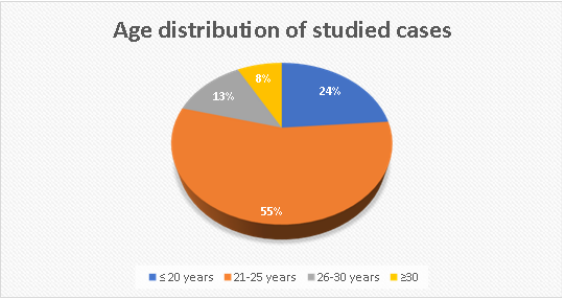

Figure 1: Pie diagram showing age distribution in studied cases

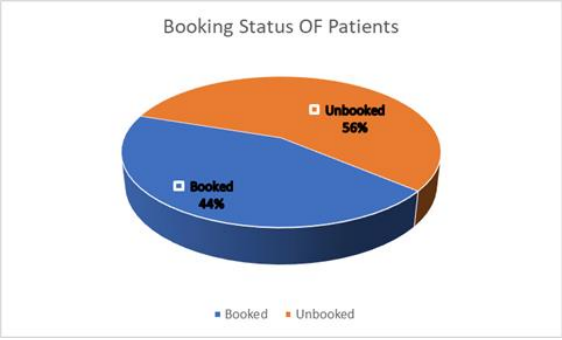

Figure 2: Pie diagram showing ANC registration status of patients

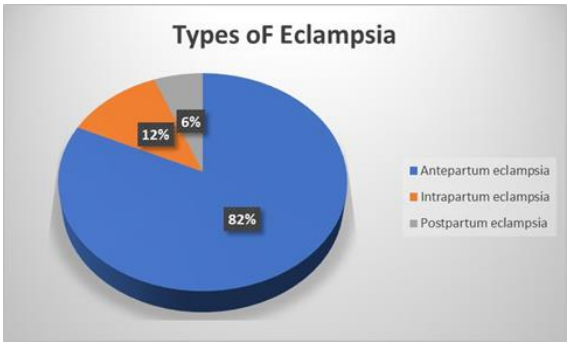

Figure 3: Pie diaram showing types of eclampsia in studied cases

In this study, there were 62% deliveries by LSCS, out of which the most common indications for LSCS were fetal distress and uninducible cervix, 7% had indication of precious pregnancy, 6% had indication of primigravida breech and previous LSCS respectively, 4% of the patients were posted for failed induction and DIC and 2% had LSCS because of severe oligo/IUGR and CPD, 1% of the patients were posted in view of CVA.

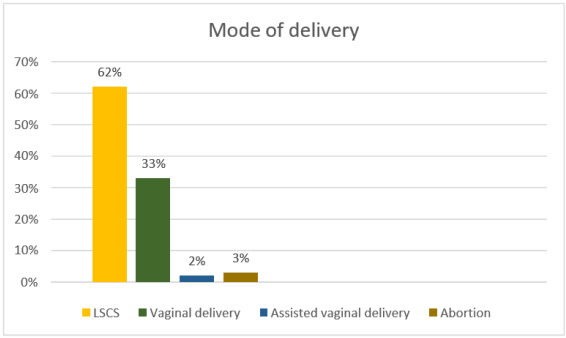

Figure 4: Bar diagram showing mode of delivery in studied cases

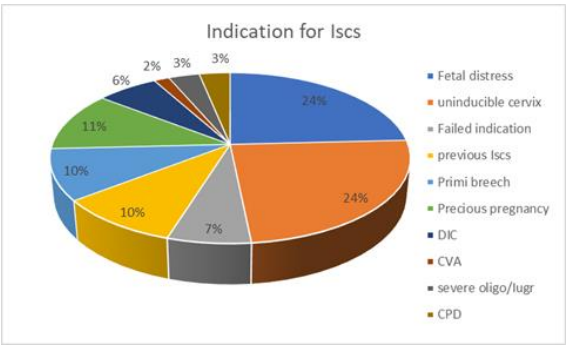

Figure 5: Pie diagram showing indications for LSCS in studied cases

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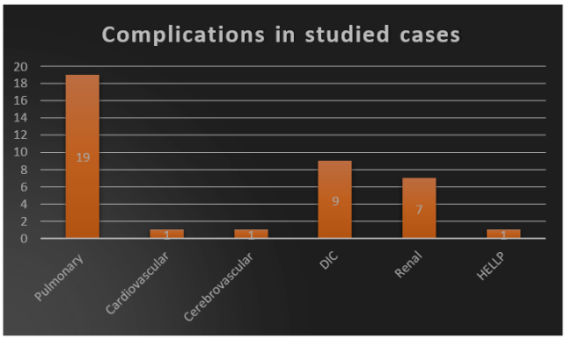

Figure 6: Bar diagram showing complications in studied cases

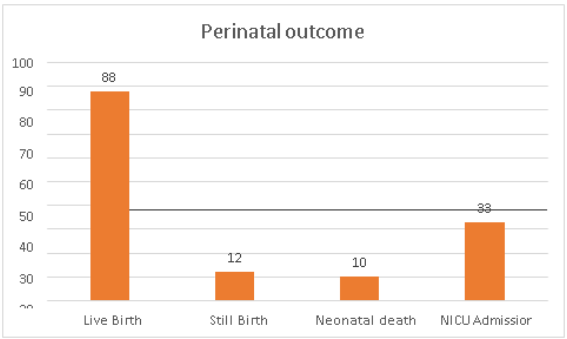

Figure 7: Perinatal outcome in studied cases

Table 1: Age distribution of studied cases.

≤ 20 years	24
21-25 years	55
26-30 years	13
≥30	8

The incidence of eclampsia in our institute was 0.99%Mean age of subjects was 23.1 years.
Majority of the subjects were in the age group 21-25 years (55%), 24% were in the age group<20 years, 13% were in the age group 26-30 years and 8% were in the age group >30 years.

Table 2: Parity distribution in studied cases

PRIMI	60
G2	24
G3	12
G4	4

In the study 60% were primigravida, 24% were gravida 2, 12 % were gravida 3 and4% were gravid.
In the study, 56 % of the patients were unbooked and 44 % of the patients were booked.

Table 3: Gestational Age distribution in the subjects

Preterm	69
Term	31

In the study, 69% of the births were preterm and 31% were term deliveries.
In the study, out of 100 patients of eclampsia, 82% were antepartum, 12% were intrapartum and 6% were postpartum.

Table 4: Mode of delivery in studied cases

LSCS	62
Vaginal delivery	33
Assisted vaginal delivery	2
Abortion	3

In the study, 62% of the subjects delivered by LSCS, 33% delivered vaginally, 2% of the subjects had assisted vaginal delivery using forceps and spontaneous abortion was seen in 3% of subjects.

Table 5: Complications in studied cases

Pulmonary	19
Cardiovascular	1
Cerebrovascular	1
DIC	9
Renal	7
HELLP	1

In the study, 19% of the subjects developed pulmonary complications, 9% of the subjects had DIC and 7% developed renal failure. HELLP, cardiovascular and cerebrovascular complications were seen in 1% each.

Table 6: Outcome of patients in studied cases

Discharge	97
Death	03

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In the study, 97% recovered and got discharged and 3% of the patients died. Deaths were due to CVA, HELLP & pulmonary complications each.

Table 7: ICU admission in studied cases

ICU	17
Non-ICU	83

In the study, 17% of the subjects were admitted in the ICU and 83% were managed without intensive care.

Table 8: Perinatal outcome in studied cases

Live Birth	88
Still Birth	12
Neonatal death	10
NICU admission	33

In the study by observing the fetal outcome it was observed that there were 88% live births and 12% still births. There were 33% NICU admission in total and the neonatal mortality was 10%.

DISCUSSION

This was a descriptive study was conducted at a tertiary care hospital for a period of 18 months.
All the women presenting with eclampsia during this period in our tertiary hospital not falling in the excluding criteria and willing to participate were included in the study after written informed consent.
Maternal and fetal outcome in these patients were studied.
The incidence of eclampsia in our institute was 0.99%
Eclampsia was most common in the age group 21-25 years of age that is 55%, 24% were in the age group <20 years, 13% between 26-30 years and 8% > 30 years.
In the study 60% were primigravida, 24% were gravida 2, 12 % were gravida 3 and 4% were gravida 4.
Out of 100, 56 % of the patients were unbooked and 44 % of the patients were booked and there were 69% of the births were preterm and 31% were term deliveries.
In the study, out of 100 patients of eclampsia, 82% were antepartum, 12% were intrapartum and 6% were postpartum.
In the study, 62% of the subjects delivered by LSCS, 33% delivered vaginally, 2% of the subjects had assisted vaginal delivery using forceps and spontaneous abortion was seen in 3% of subjects.
In this study, there were 62% deliveries by LSCS, out of which the most common indications for LSCS were fetal distress and uninducible cervix both 15%, 7% had indication of precious pregnancy, 6% had indication of primigravida breech and previous LSCS respectively, 4% of the patients were posted for failed induction and DIC and 2% had LSCS because of severe oligo/IUGR and CPD. 1% of the patients were posted in view of CVA.
In the study of complications, 19% of the subjects developed pulmonary complications, 9% of the subjects had DIC and 7% developed renal failure. HELLP, cardiovascular and cerebrovascular complications were seen in 1% each.
In the study, 83% were managed without intensive care and 17 % were indoored in the ICU out of which 3 patients died due to CVA, HELLP & pulmonary complications each.
In the study by observing the fetal outcome it was observed that there were 88% live births and 12% still births. There were 33% NICU admission in total and the neonatal mortality was 10%.

CONCLUSION

Eclampsia still remains an intractable obstetric emergency in the developing world and a leading cause of maternal death.
It is concluded that inadequate antenatal care and delay in women seeking help create more number of complications and thus more awareness and enabling factors need to be created to access antenatal facilities.
Delay in diagnosis and inadequate management of eclampsia patient at the peripheral center are the major contributors to the poor outcome of eclamptic women.
More convulsion- delivery interval means more risk of DIC, increased severity of complications of respiratory and renal system and increase morbidity.
Eclampsia leads to preterm delivery, which may be responsible for neonatal morbidity and mortality.
By providing better health care facilities at all levels, improving socioeconomic and education status of females, adequate antenatal supervision, timely identification of high-risk cases, timely referral to higher centres and timely intervention, early treatment and termination of eclamptic patients will improve maternal and fetal outcome in eclampsia.

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