

Clinical study of Eclampsia and outcome in a tertiary care centre

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Abstract: Eclampsia continues to be a major problem in developing countries like India contributing to significant maternal and perinatal morbidity and mortality. We conducted a study to establish the clinical profile and the associated maternal and perinatal outcomes among eclamptic patients admitted to our center. A prospective study of all women presenting with eclampsia was performed from January 2014 to August 2014. Ninety primigravida patients presented with eclampsia out of a total 10264 deliveries during the study period. Majority of the patients were unbooked (63.4%). Antepartum eclampsia accounted for most of the cases (63.4%). Of those cases, 53.4% presented beyond 36 weeks gestational age. There were a total of 4 maternal deaths and 21 perinatal deaths in the present study. Perinatal deaths were caused by prematurity and birth asphyxia. The high incidence of eclampsia and its complications during this study indicate the need for early identification of risk factors and timely intervention to improve maternal and perinatal outcome.

Keywords: Eclampsia, Maternal complications and Perinatal outcome

I. Introduction

The term eclampsia was derived from greek word flash of lightning. 80% of the cases of eclampsia are preceded by severe preeclampsia. Preeclampsia complicated by generalised tonic clonic convulsions or coma is called eclampsia. Eclampsia appreciably increases the risk for both mother and fetus. It may occur quite abruptly without any warning manifestations. Maternal mortality in eclampsia is very high in India about 2 – 30% depending upon the severity of complications and type of eclampsia. Perinatal mortality is also very high to the extent of 30 – 50% depending on the gestational age, intrauterine growth restriction and mode of delivery. Depending on the occurrence of convulsion eclampsia is designated as antepartum, intrapartum and postpartum. Eclampsia is most common in young primigravida.

II. Materials And Methods

This is a prospective study of 90 cases of eclampsia admitted in SVMC, GMH, Tirupathi during a period of 8 months from Jan 2014 to Aug 2014. Detailed history was taken for all the cases from the time of antenatal registration (both booked and unbooked) regarding age, socioeconomic status, parity, gestational age, time of onset, number, duration of convulsions etc as per the proforma. Thorough clinical examination was done including general and obstetric examination. Necessary investigations were done including ultrasound examination on emergency basis. Control of convulsions was done by MgSo₄ regimen which is continued 24hrs after delivery while Alpha methyl dopa, labetalol and nefedipine were used as antihypertensives given at regular intervals till systolic blood pressure < 160mm Hg, diastolic blood pressure – 90-100 mm Hg. After stabilising the patient, termination of pregnancy was planned. Early decision taken for termination of pregnancy according to clinical findings for vaginal/caesarean section. Maternal and fetal outcomes were assessed.

Inclusion Criteria:

- 1) Primigravida with > 28 weeks of gestation age
- 2) Antepartum, Intrapartum and postpartum eclampsia

Exclusion Criteria:

- 1) Patients with epilepsy/other causes of seizures
- 2) Multigravida with eclampsia

III. Observations And Results

90 cases of primigravida with eclampsia were studied.

Table 1: Age distribution

Age	No. of cases	%
<20	24	26.7
21- 25	43	47.8
26- 30	19	21.2
>30	4	4.5

Among 90 cases majority of cases (43) belonged to 21- 25 years age group followed by 24 cases in less than 20 years of age group,

Table 2: Antenatal care

	No. of cases	%
Booked	33	36.7
Unbooked	57	63.4

Most of the cases were unbooked (57), referred from private hospitals, CHC's or admitted direct from home

Table 3: Gestational Age at the onset of convulsions

Gestation Age	No. of cases	%
>28- 32 weeks	10	11.2
33- 36 weeks	32	35.6
> 36 Weeks	48	53.4

Most of the eclampsia were near to term that is more than 36weeks of gestation.

Table 4: Types of eclampsia and outcome

	No. of cases	%
Antepartum	57	63.4
Intrapartum	18	20
Postpartum	5	5.5

Majority of cases were of antepartum eclampsia (63.4%)

Table 5: Mode of delivery

	No. of cases	%
Vaginal	58	64.5
Caesarean	32	35.56

Out of 90 cases of eclampsia, 58 cases (64.5%) delivered vaginally and 32 cases (35.56%) delivered by caesarean section.

Table 6: Indication for LSCS

Indication	No. of cases	%
Unfavourable cervix with failed induction	30	33.33
Fetal distress	15	16.67
IUGR with abnormal Doppler	14	15.56
Malpresentation	6	6.67
Multiple gestation	4	4.45
APH	8	8.89
Obstructed Labour	2	2.3

Most common indication for LSCS in eclampsia is unfavourable cervix with failed induction followed by fetal distress. 15% of caesarean section is due to IUGR and abnormal Doppler. In many cases there were more than one indication for caesarean section.

Table 7: Maternal Complications

Maternal Complication	No. of cases	%
Abruptio placenta	8	8.89
ARF	8	8.89
HELLP	17	18.89
Cerebral Haemorrhage	4	4.44
Pulmonary Oedema	4	8.89
Respiratory failure	3	3.33
Coma	2	2.22
PPH	7	7.78
Shock	3	3.33
Death	4	4.44

Other than above complications there were respiratory infections (11 – 12.22%), anaesthetic complications like aspiration pneumonia in 7 cases(7.78%) and post eclamptic blurring of vision in 4 cases(4.44%). Most of the cases had more than one associated complication.

Table 8: Birth weight

Birth Weight	No. of cases	%
< 2 kg	15	16.67
2-2.4 kg	32	35.55
2.5-3.0 kg	41	45.56
3-3.5 kg	2	2.22

Perinatal mortality was more in low birth babies less than 2kg

Table 9: Perinatal outcome

	No. of cases	%
Live Births	69	76.67
Still Births	7	7.78
Neonatal Deaths	9	10
IUD	5	5.56

Table 10: Perinatal Morbidity

	No. of cases	%
Low APGAR	14	15.55
Neonatal Resuscitation	31	34.44
NICU admission	20	22.22

Table 11: Causes of Perinatal Morbidity

	No. Of cases	%
Birth Asphyxia	12	13.4%
Jaundice	10	11.12%
RDS	19	21.11%
Neonatal Convulsions	2	2.22%
Meconium Aspiration	11	12.22%
Prematurity	21	23.33%

Commonest complication in eclampsia is RDS in 19 cases (21.1%) because of prematurity, hypoxia and meconium aspiration. A few babies admitted to the NICU had multiple complications affecting perinatal outcome.

IV. Discussion

Eclampsia was more commonly seen in young primigravida. In the present study, eclampsia was more commonly seen in primigravida in age group of 20-25 years with 43 cases(47.8%) while in less than 20 years of age group there were 20cases(26.7%) . Eclampsia was more prevalent in unbooked cases i.e in 57 cases (63.4%) referred from other peripheral centers. It reflects the lack of proper antenatal care, lack of availability of health care facilities in rural and semi urban areas as one of the important risk factor for eclampsia. 36%(33 cases) of eclampsia cases were booked. It has been established that good antenatal care prevents eclampsia.

The cause of eclampsia in booked cases might be due to atypical presentation: a) sudden progress of disease to severe preeclampsia, b) failure to detect severe signs of preeclampsia, c) development of convulsions while receiving prophylactic MgSO₄ or onset of convulsions less than 48 hrs after delivery.

Eclampsia is most common in the last trimester and becomes more frequent as term approaches. In our study that included 90 cases of preeclampsia 57(63.4%) cases presented in antepartum period while another 20 cases (18%) presented in intrapartum period and 5 cases (5.5%) presented in postpartum period which is similar with the study of Edgar M Ndaboine et al.

Study	Antepartum	Intrapartum	Postpartum
Sibai ¹ , 2005	38-50%	18-36%	5-35%
Edgar M Ndaboine ² , 2012	67.4%	22.37%	16.53%
Present Study	63.4%	18%	5.5%

Almost without exception, preeclampsia precedes the onset of eclampsia. Majority of eclamptic women experience symptoms of headache (80%), visual disturbances(20%). Eclampsia is more common in antepartum period predominantly in last trimester when it reaches term. In our study 53.4% (48) cases developed eclampsia near term i.e > 36 weeks of gestation. 35.6% (32) cases were seen in 33-36 weeks of gestation which is nearly similar to study done by Sunita et al 2013 in which 53% , 26%, 18% of eclampsia cases were seen in

antepartum, intrapartum and postpartum periods respectively. In United Kingdom 44% of eclampsia were seen in postpartum period. Pathogenesis of postpartum eclampsia is expected due to release of FDP after separation of placenta during postpartum period.

The definitive treatment of eclampsia is delivery irrespective of gestation age to reduce risk of maternal morbidity and mortality. Eclampsia is considered an absolute contraindication to expectant management. Sibai and Barton 2007 reviewed recently that expectant management may lead to severe maternal complications.

After maternal stabilization, factors considered to decide the mode of delivery are gestation age, bishop score, patient in labour, fetal condition. Prostaglandins are used to obtain cervical ripening for induction and ARM for augmentation of labour. Pregnancy should be terminated within 24 hrs. Cases remote from term i.e <32 weeks of gestation are successfully delivered vaginally. Vaginal delivery is preferable from maternal consideration in our study.

Eclampsia per se is not an indication for Caesarean section. Mode of delivery had no significant effect on outcome of eclampsia as per Ibrahim et al. In our study 64.5% (58) cases were delivered by vaginal route while 35.5 % (32) cases underwent caesarean section. It is compared with following studies.

Study	Incidence of caesarean section
Sunita et al ³	45%
Edgar M Ndaboine (2012) ²	66%
Present study	36.5%

Eclampsia is complication of severe preeclampsia. Depending upon severity of preeclampsia it leads to major maternal complications. In our study 17 cases(19%) developed HELLP syndrome. 8cases(9%) developed abruption while acute renal failure was seen in 6 cases (6.79%), cerebral haemorrhage in 4 cases (4.4%), pulmonary oedema in 2 cases(2.4%), coma in 2 cases(2.4%) and ventricular failure and DIC were seen each in 1 case as shown in table . There were 4 maternal deaths.

Perinatal mortality mainly depends on gestational age, severity of preeclampsia, birth weight, IUGR, prematurity, birth asphyxia which was similar to the study done by MacKay et al⁴. In study by Sunita et al there were 19 perinatal deaths while in our study there were 21 perinatal deaths as shown in table.

Table 12: Perinatal Mortality in various studies

Onuh et al ⁶	214
Sudarshan et al ⁵	290
Present study	272

V. Conclusion

Good antenatal care, early identification of preeclampsia and its complications, timely intervention, good obstetric care units with ICU facilities, availability and utilization of intensive care facilities at tertiary care centres or referral centres like good ventilator support, dialysis for renal failure, availability of blood products to tackle DIC etc are

Because of limited accessibility, critical care services at referral centres influence the outcome of eclampsia. Lack of technical people, limited accessibility to health care services and inadequate health care providers are the major contributing factors influencing outcome of eclampsia. Limited transport facilities delays the treatment

As eclampsia is preventable complication of preeclampsia, early identification of high risk cases and early referral might reduce morbidity and prevent mortality. Early identification of risk factors for preeclampsia and severe preeclampsia and prompt initiation of treatment plays critical role. Many unbooked cases referred from other centres were critically ill having high rates of morbidity and mortality.

Early identification of severity of preeclampsia and timely intervention is important to prevent complications of eclampsia in mother. Better equipped HDU and more specialized new born care units are essential to get better outcome of eclampsia to reduce the maternal and perinatal complications.

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