

Clinical Study of Eclampsia in a Tertiary Care Hospital

Runjun Doley^{1*}, Bornali Pegu¹ and Dipangkar Hazarika²

¹Department of Obstetrics and Gynaecology, Jorhat Medical College and Hospital, Jorhat – 785001, Assam, India; drrunjundoleypatir@gmail.com, drbornalipegu@gmail.com

²Department of Paediatrics, Jorhat Medical College and Hospital, Jorhat – 785001, Assam, India; dipankargmch@gmail.com

Abstract

Objective: The study was undertaken to analyse the epidemiological factors associated with eclampsia and to assess the maternal and perinatal outcome. **Methodology:** This is a retrospective study done in a tertiary care centre, Jorhat Medical College and Hospital, Assam between January 2015 to December 2015. Case records of all eclampsia patients admitted during this period were collected and analysed. **Findings:** This study showed that incidence of eclampsia in our hospital is 7.1 per 1000 deliveries. It is more common in the age group of 20 to 24 years (52.83%) and primigravidae (77.36%). 60.38% had irregular antenatal check-up and maximum patients had seizures before the onset of labour (69.81%). 45.28% eclamptic patients presented with seizures at ≥ 37 completed weeks. Commonest mode of delivery was caesarean section (60.38%). Out of 53 patients, 26 (49.06%) had complications. 73.58% cases delivered live babies but 9.43% had early neonatal death. **Conclusion:** Eclampsia is still one of the important and common obstetric emergencies in upper Assam, which has a significant role in maternal and perinatal outcome. Regular Antenatal Care (ANC), proper health education, improvements of socio-economic conditions and spreading of awareness in the community has major roles in prevention of eclampsia. Timely and appropriate intervention including primary management, early referral and judicious termination of pregnancy help in reducing morbidity and mortality of both mother and fetus.

Keywords: Antenatal Care (ANC), Disseminated Intravascular Coagulation (DIC), HELLP - (Haemolysis Elevated Liver Enzymes Low Platelet Count), Lower Segment Caesarean Section (LSCS), Normal Vaginal Delivery (NVD)

1. Introduction

Eclampsia is defined as the development of seizures that cannot be attributed to other causes and /or unexplained coma during pregnancy or puerperium in a woman with pre-eclampsia¹. Eclampsia is most common in the third trimester and becomes increasingly more frequent as term approaches¹.

Approximately 1 in 2000 deliveries is complicated by eclampsia in developed countries, whereas the incidence in developing countries varies from 1 in 100 to 1 in 1700 cases². Although the incidence and mortality from eclampsia has fallen dramatically over the past decades due to better antenatal care, the associated maternal and fetal morbidity and mortality is still significant¹.

Pre-eclampsia and eclampsia are the causes of approximately 20% of maternal deaths in USA and approximately

one-half of them are associated with eclampsia³. Case fatality rate in eclampsia as reported in UK is 1.8% and another 35% have severe morbidity⁴. Maternal mortality in eclampsia is very high in India and varies from 2-30%, much more in rural hospital based hospital than in the urban counterpart⁵. The perinatal mortality is very high to the extent of about 30-50%⁵.

Incidence of hypertensive disorders in India is found to be 10.08 % as observed through the data collected by the National Eclampsia Registry (NER) (11,266 out of 1,11,725 deliveries) over the past 3 years with 2,554 patients out of this presenting with eclampsia⁶.

According to WHO report 2008, eclampsia accounts for 12% of all maternal deaths in developing countries⁷.

The onset of eclamptic convulsions can be antepartum (38-53%), intrapartum (18-36%), or postpartum (11-44%)⁸.

*Author for correspondence

The present study is done to assess the problem of eclampsia in our community, to study the various epidemiological factors of eclampsia and its effects on maternal and perinatal outcome. So it is worthwhile to review this major problem of eclampsia in obstetrics periodically.

2. Materials and Methods

This retrospective analysis on eclampsia patients was carried out in the Department of Obstetrics and Gynaecology, Jorhat Medical College and Hospital. All the data from January 2015 to December 2015 were collected from labour room register and medical record department after obtaining clearance from hospital ethical committee. A total number of 53 cases of eclampsia were admitted to the hospital during the study period.

3. Objectives of the Study

1. To find out the incidence of eclampsia in Jorhat Medical College Hospital from January 2015 to December 2015.
2. To study the epidemiological factors associated with eclampsia in our region
3. To study maternal and perinatal outcome

4. Inclusion Criteria

- Patient with antepartum convulsions
- Patient with intrapartum convulsions
- Patient with postpartum convulsions

5. Exclusion Criteria

- Patient with convulsions due to causes other than eclampsia

On admission detailed history was taken from the patient or her relative accompanying her and detailed clinical examination was done.

6. Results

During the study period, a total of 7394 deliveries and 53 eclamptic patients were recorded. This gives an incidence of 7.1 per 1000 deliveries.

Eclampsia was more common in the age group of 20-24 years (52.83%). 77.36% eclamptic patients were primigravidae. Most of the cases (60.38%) had irregular antenatal check-up. Antepartum eclampsia (69.81%) was

more common among the study population. Majority of the patients (45.28%) developed eclampsia at ≥ 37 weeks (Table 1).

Majority of the patients (60.38%) had undergone Lower Segment Caesarean Section and maternal outcome was found to be better in these patients as compared to the patients who had delivered vaginally (alive – 93.75% vs 83.33%) (Table 2).

CVA – Cerebrovascular Accident,

Out of 53 patients 26 (49.06%) had complications and among them 7 (13.21%) died. Commonest complication was pulmonary edema (13.21%) (Table 3).

Table 1. Epidemiological characteristics of eclampsia

Age	Number	Percentage
<20 years	14	26.41
20-24 years	28	52.83
25-29 years	7	13.21
≥ 30 years	4	7.55
Total	53	
Parity Distribution		
Primigravida/ primipara	41	77.36
Multigravida/ multipara	12	22.64
Total	53	
Antenatal care		
Regular antenatal care	13	24.53
Irregular ANC	32	60.38
No ANC	8	15.09
Total	53	
Types of eclampsia		
Antepartum	37	69.81
Intrapartum	5	9.43
Postpartum	11	20.75
Total	53	
Gestational age at the time admission		
Period of gestation		
≤ 28 weeks	2	3.77
>28 weeks to <37	16	30.19
≥ 37 weeks	24	45.28
Postpartum	11	20.75
Total	53	

Table 2. Mode Of Delivery (MOD) and maternal outcome

MOD	Number	Percentage	Alive	Percentage	Dead	Percentage
NVD	18	33.96	15	83.33	3	16.67
LSCS	32	60.38	30	93.75	2	6.25
Undelivered	3	5.66	1	33.33	2	66.67
Total	53		46		7	

Table 3. Maternal complications

Complications	Number of patients	Percentage
Pulmonary edema	7	13.21
Abruptio placentae	2	3.77
Septicaemia	2	3.77
Aspiration	1	1.89
DIC	1	1.89
Hepato renal failure	2	3.77
Postpartum psychosis	3	5.66
CVA	3	5.66
Ventilation support needed	1	1.89
Hypoxic encephalopathy	2	3.77
HELLP Syndrome	2	3.77
Total	26 (death-7)	49.06

The percentage of live birth and stillbirth in our study was 73.58% and 13.21% respectively (Figure 1).

Patients from the tea tribe community contributed to the majority of eclamptic patients (60.38%)(Figure 2).

7. Discussions

The current study showed a high incidence of eclampsia (7.17 per 1000 deliveries). 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 communication delay most of the patients to reach health care provider.

In the study (Table 4), eclampsia was more prevalent in young pregnant woman in the age group of 20-24 years (52.83%) which is comparable to the other studies^{10,14}.

Perinatal Outcome in Eclampsia

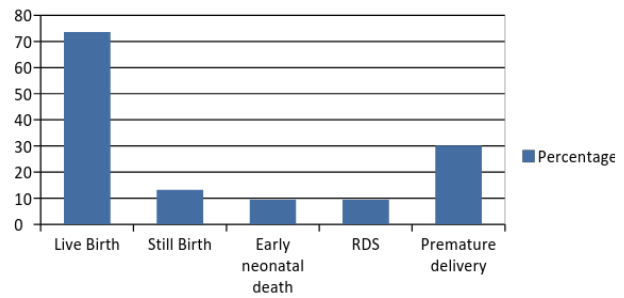


Figure 1. Perinatal outcome in eclampsia.

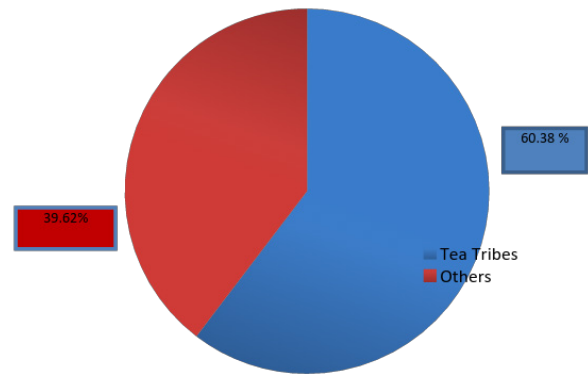


Figure 2. Community distribution.

Table 4. Incidence of eclampsia in various studies

Study	Place of study	Incidence
Douglas and Redman ⁴	United Kingdom	4.9 per10000 maternities
Sunitha T.H et al. ⁹	Karnataka , India	7 per 1000 deliveries
ManjushaSet al. ¹⁰	Pune ,India	16.35 per1000 deliveries
Choudhury P ¹¹	Kathmandu ,Nepal	2.9 per 1000 deliveries
Siddiquiand Soomro ¹²	Karachi ,Pakistan	17.16 per 1000 deliveries
Pal A et al. ¹³	Kolkata,India	42.57 per 1000 deliveries
Present study	Upper Assam,India	7.17 per 1000 deliveries

Majority of the patients (77.36%) were primigravidae, which is comparable to other studies^{9,14-16}. It indicates that primigravidae are the main the victim for eclampsia.

Majority of the eclamptic patients (60.38%) had irregular antenatal check-up. Hemkanta et al.¹⁴, Prabhakar et

al.¹⁷, Pradeep et al.¹⁵ and Chaudhury¹¹ reported similar results. But on the other hand, in 1994 Douglas and Redman⁴ reported that women with less frequent antenatal visits were not significantly different from those with standard antenatal care in terms of the type of first seizure, where it occurred, or the gestational age at which it occurred and also that 85% women had been seen by a doctor or midwife in the week before their first convulsion. Choudhury P¹¹ also reported that out of 47 eclampsia patients 26 (55.31%) had antenatal care.

In the study, 69.81% patients developed antepartum eclampsia, 9.43% had intrapartum eclampsia and 20.75% had postpartum eclampsia. Similar observation was found in studies by Hemkanta et al.¹⁴, Chaudhury¹¹, Probhakaret al.¹⁷, Pradeep¹⁶ and Manjusha et al.¹⁰ where antepartum eclampsia was the commonest type (56.67%, 70.21%, 77.47%, 87% and 86.95% respectively). Recent years have shown an increase in the incidence of postpartum eclampsia probably due to better prenatal care and prophylactic use of magnesium sulphate in severe preeclampsia during antepartum and intrapartum period¹⁸. This has been a finding in a study by Chamesetal.¹⁹ who found that with improved antenatal care, early detection of pre-eclampsia and prophylactic use of magnesium sulphate, there has been increasing shift in the incidence of eclampsia towards the postpartum period.

In our study, highest numbers of eclamptic patients were found in the gestational age ≥ 37 weeks (45.28%) followed by below 37 weeks gestation (30.19%). Only 3.77% eclamptic patients were found in gestational age less than 28 weeks. Similarly, Probhakaret al.¹⁷, Chaudhury¹¹ and Sunitha et al.⁹ also found highest number of eclamptic patients in gestational age ≥ 37 weeks.

The definitive treatment of eclampsia is delivery, irrespective of gestational age. Therefore, the patient must be delivered within 24 hours in case of severe pre-eclampsia, and within 12 hours in a patient with eclampsia¹. Lower segment caesarean section was the common mode of delivery in our study (60.38%). Similar observation was found in studies by Manjusha et al.¹⁰ and Choudhury¹¹. But in a study by Khanumetal.²⁰ 71% eclamptic patients had NVD and 25% had LSCS and the rest were craniotomy and forceps delivery. In our study the patients, who were delivered by caesarean section, the maternal outcome was better as compared to those patients who had vaginal delivery. As per Ibrahimetal.²¹ there is no significant difference in maternal outcome between those who delivered through spontaneous vaginal delivery and those who had caesarean section.

Major complications of eclampsia include placental abruption (7-10%), DIC (7-11%), HELLP syndrome (9.7-20%), acute renal failure (5-9%), pulmonary edema (3-5%), aspiration pneumonia (2-3%), cerebral haemorrhage and cardiopulmonary arrest (2-5%)²². In our study 13.21% eclamptic patient had pulmonary edema. The percentage of cerebrovascular accident and postpartum psychosis was 5.66% each in our study. The percentage of hepato-renal failure, hypoxic encephalopathy, HELLP syndrome, abruptio placentae and septicaemia was 3.77% each in our study. Other complications were DIC (1.89%), aspiration pneumonia (1.89%) and need for ventilation support (1.89%). There was no case of cardiopulmonary arrest.

In our study, 73.58% eclamptic cases had live birth, 30.19% had premature delivery, and 13.21% had stillbirth. The percentage of early neonatal death and respiratory distress syndrome was 9.43% each. These observations are similar to the studies of Choudhury¹¹ and Pradeep et al.¹⁶.

In our study, out of 53 eclamptic patients, majority 60.38% were from tea tribe community. Low socio-economic status, poor nutritional education (diets high in salt) and irregular antenatal check-up are the probable contributors to the high prevalence of eclampsia in this community.

8. Conclusion

This study reveals that eclampsia is still an important obstetric emergency in the community contributing to significant maternal and perinatal morbidity and mortality. Certainly the high incidence of eclampsia can be reduced by proper antenatal care, diagnosing, admitting and treating the mild and severe pre-eclampsia cases. However, eclampsia can occur bypassing the pre-eclamptic state and as such, it is not always a preventable condition. Antenatal care, early diagnosis, primary management and referrals need to be improved.

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