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## A Retrospective Study On Eclampsia And Fetomaternal Outcome At Tertiary Care Centre.

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### ❖ ABSTRACT

**AIMS & OBJECTIVE:** Worldwide eclampsia is a leading cause of maternal and perinatal mortality and morbidity. Hence the importance of continued efforts in reviewing each women with eclampsia and to analyze factors affecting the outcome. Aims of the study were to evaluate maternal and fetal outcome in patients of eclampsia and factors affecting the outcome.

**METHODS:** We are reporting a retrospective study on the patients of eclampsia attending a tertiary care hospital. The study included deliveries conducted in from January 2020 to January 2021.

**RESULTS:** The total number of eclampsia cases was 68. The antepartum eclampsia cases were 70.50% and the postpartum eclampsia cases were 22.05%. The total number of maternal deaths due to eclampsia was 1. There were 15 neonatal deaths most commonly due to prematurity. There were 11 intrauterine deaths.

**CONCLUSION:** Due to inadequate antenatal care, most of the cases of pre-eclampsia go unnoticed increasing the referrals to tertiary care centre for intensive care. Thus, it is necessary to emphasise on timely interventions and availability of blood bank, ICU and NICU facilities at the closest referral centre for better maternal and perinatal outcome.

## ❖ INTRODUCTION

The term eclampsia was derived from greek word flash of lightning- A condition in which one or more convulsions occur in pregnant woman suffering from high blood pressure often followed by coma and posing threat to the health of mother and baby.

It is an obstetric emergency associated with serious maternal and perinatal complications. Despite intensive research exact etiopathogenesis of eclampsia is not known yet. Defective placentation and endothelial dysfunction are considered to be the core features.

Eclampsia was found to be third among the direct obstetric causes of maternal mortality. Deaths due to eclampsia are secondary to preventable factors like cerebrovascular haemorrhage, Acute Renal Failure (ARF), coagulation failure, aspiration pneumonia, pulmonary oedema, Ante Partum Haemorrhage (APH) or Postpartum Haemorrhage (PPH). Perinatal mortality is reported to be 5% to 11% in developed countries where as it is as high as 40% in developing countries.

Depending on the occurrence of convulsion eclampsia is designated as antepartum, intrapartum and postpartum. Eclampsia is most common in young primigravida.

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

Most of the eclamptic patients are brought to the hospital after a seizure episode at home in the antenatal or postnatal period which requires emergency intensive care. This adds to the morbidity associated with the disease due to delay in the initial emergency care that the patient needs to avoid complications.

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. We conducted a retrospective study in the patients of eclampsia attending a tertiary care hospital to identify a crucial step or link to decrease the morbidity and mortality in developing countries.

## ❖ METHODS

This is a retrospective study conducted from january 2020 to january 2021 at a tertiary care center and results were analyzed. This study analyze the cases in reference to age, parity, antenatal care, and gestational age. The study included deliveries conducted between this period and 68 cases were diagnosed for eclampsia. All eligible women were explained about the study and written informed consent was obtained from the patients and relatives.

### ***Inclusion criteria:***

- All pregnant women presenting with Antepartum, Intrapartum and postpartum eclampsia in labour room or during the hospital stay
- Cases more than 20 weeks of gestation

### ***Exclusion Criteria:***

- Patients with epilepsy/other causes of seizures
- Cases less than 20 weeks of gestation

Data was obtained with respect to the booking status and antenatal follow up.

At the time of presentation, assessed the age, parity and gestational age, general status, BP and proteinuria using dipstick method.

The onset of first convulsion, number of convulsions, Fundoscopic examination was also done. history, current and past obstetric, medical and surgical history, specific ultrasound examination for fetal growth and wellbeing.

Clinical examination was done, Blood sample was collected and sent for complete blood count, liver and renal function tests and coagulation profile.

After initial examination and resuscitation Magnesium sulphate was administered according to Zuspan regime. Patients were monitored for signs of magnesium toxicity or any untoward side effect.

Patients not in labour were induced for labour or caesarean section was done for obstetric indications and mode of delivery was noted.

Newborns were examined for any complications and post delivery patient was monitored for any signs of magnesium toxicity or other complications like PPH, ARF, DIC or maternal death.

Eclamptic episode, timing of initiation of adequate treatment, onset of fit and delivery interval, time taken to reach adequate health care facility, treatment given before referral of the patients from peripheral centers, timing of Onset of seizures in relation to delivery i.e. ante partum, intrapartum or postpartum, total number of seizures. Data was extracted from the patients file, antenatal card and referral paper.

### Statistical analysis:

- ✓ The mean and standard deviations were used to present continuous variables with normal distribution while median and inter quartile ranges were used in skewed data.
- ✓ Chi square test and t-test were used for comparison of categorical and continuous variables.
- ✓ P value less than .05 was taken as statistically significant.

## ❖ RESULT

During the review period, a total of 9570 deliveries were recorded and 68 cases of eclampsia were reported, thus accounting for an incidence 0.71%.

### History on admission

(A)Booked	No of cases	%
Yes	9	13.2
No	59	86.8
(B)Refreal cases	No of cases	%
Yes	26	38.2
No	42	61.7
(C)Mgso4 given before referral (Out of 26 pt)	No of cases	%
Yes	09	34.6
No	17	65.3
(D)Regular ANC visit	No of cases	%
Yes	30	44.1
No	38	55.8

**Table:1**

Out of all the cases of eclampsia only 9 (13.2%) were booked cases in our hospital (Table 1).

Of the 68 cases authors studied, 55.8% (38/68) did not receive regular antenatal care at any health centre.

Out of the referred cases, 65.3 (17/26) cases did not receive MgSO<sub>4</sub> before referral.

### According to age of pt.

Age of pt. In year	No of cases	%
≤20	18	26.4%
21 - 30	46	67.6%

>30	4	5.8%
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**Table:2**

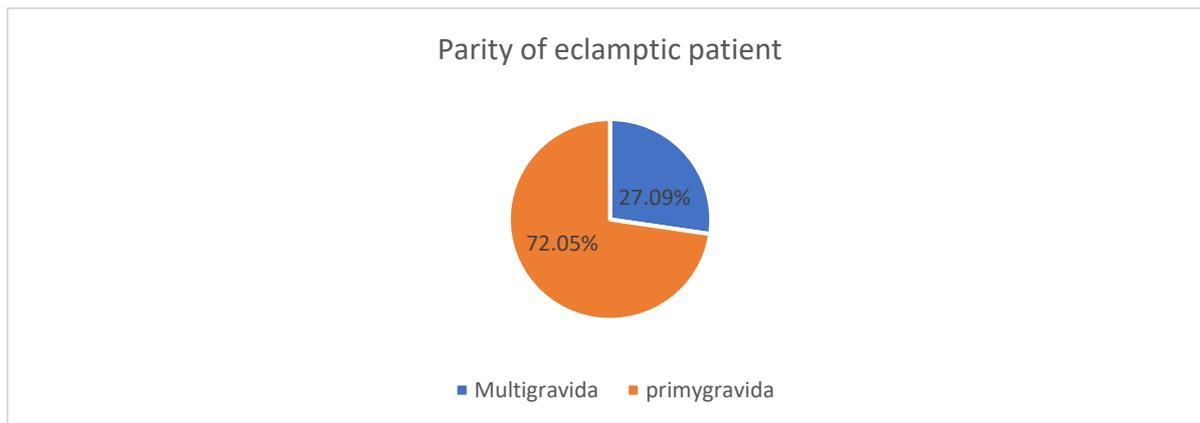
The eclampsia condition is mainly seen in patients with age group of 21-30 years (67.6%) as shown in Table-2

**General Condition on admission**

condition	No of pt.	%
Alert, conscious	31	45.5%
Semiconscious	22	32.3%
unconscious	15	22.05%

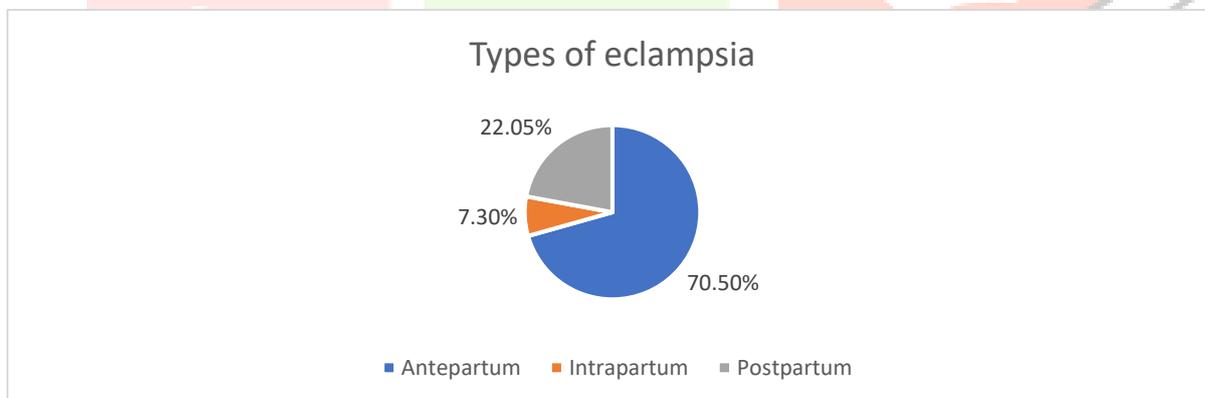
General condition of patients on admission was assessed and it was observed that 45.5% of patients were alert, 22.05% patients were unconscious.

**Table:3**



**Chart:1**

Chart:1 shows that patients (72.05%) were primigravidae & patients (27.09 %) were multigravidae



**Chart:2**

Chart:2 shows during study (70.50%) patients had antepartum, (7.30 %) patients had intrapartum and (22.05%) patients had postpartum eclampsia.

Postpartum cases convulsions occurred 4-5 hours after delivery.

<b>(A)</b> No of convulsion			
	No of convulsion	No of cases	%
	1-2	44	64.7%
	2-4	21	30.8%
	>4	3	4.41%
<b>(B)</b> Convulsion to Delivery interval (in hours)			
	convulsion to Delivery interval in hours	No of cases	%
	≤10	59	86.7%
	>10	9	13.2%
<b>(C)</b> Mode Of Delivery			
	Mode of delivery	No of cases	%
	Vaginal Delivery	43	63.23%
	Caserean Delivery	25	36.76%

**Table:4**

Majority of patients presented to hospital with the clinical presentation of Convulsions followed by superimposed complications like headache, vomiting, epigastric pain & convulsions.

Table:4(A) shows the number of Convulsions in eclampsia patients, 44 patients were presented with 1-2 episode, 21 patients with 2-4 episodes, 3 patients with more than 4 episodes of convulsions.

Table:4(B) Convulsion to delivery interval was found to be < 10 hours in 86.7% (59/68) patients, 13.2% (9/68) delivered in >10 hours.

Table:4(C) Among 63.23% (43/68) delivered vaginally and 36.76% (25/68) delivered by lower segment caesarean section.

#### **Maternal Outcome**

<b>Complication</b>	<b>No of cases</b>	<b>ICU admission</b>	<b>Mortality</b>	<b>Discharge</b>
HELLP	3	1	00	3
DIC	3	1	00	3
Abruption Placentae	2	0	00	5
PPH	2	0	00	2
PRESS	4	0	00	4
ARF	1	1	00	1
Peripartum cardiomyopathy	2	2	00	2
Status eclamtics	2	2	00	2
Pulmonary oedema	1	1	00	1
Papilledema, cortical blindness	1	1	00	1
Brain haemorrhage	1	1	1	0
No complication	46	00	00	43
<b>Total</b>	<b>68</b>	<b>10</b>	<b>1</b>	<b>67</b>

**Table:5**

Maternal outcome: 22 out of 68 patients developed complications during the course of period. Most common complication associated with eclampsia that authors observed was hemodynamic instability (HELLP and DIC). Authors had 10 ICU admissions and 1 fatal case, patient died due to Brain haemorrhage.

*Perinatal outcome in eclampsia patient*

Variables	No	Percentage
<b>Perinatal outcome</b>		
IUFD	11	16.17%
Live Birth	36	52.94%
Still Birth	6	8.82%
Neonatal Death	15	22.05%
<b>Baby weight</b>		
<2.5 kg	42	61.76%
≥2.5 kg	16	23.52%

**Table:6**

Table No.6 presents the overall effects of eclampsia on pregnancy outcomes. Low birth weight and preterm delivery were higher in eclampsia patients. 42 newborns (61.76%) had a low birth weight of less than 2500 gm. There were 11 (16.17%) intra uterine death and 6 (8.82%) still birth, 15 (22.05%) Neonatal death.

## ❖ DISCUSSION

Incidence of eclampsia in our study was 0.71% which is within the range of global incidence rate in developing countries of eclampsia which is 0.18-3.7%. Morbidity and mortality observed in patients of eclampsia in our study is similar to that observed in studies from other regions of our country.

Our study indicates that one of the major contributors to the poor outcome may be the inadequate care provided to the pregnant women. 55.8% of pregnant women did not receive any antenatal care.

Failure to screen for preclampsia by basic modalities like BP and urine protein reflects the lack of access to basic equipments in peripheral health care centers. Other factors contributing to eclampsia related outcome is poor and often inadequate management given at the peripheral centers.

Mgso4 is often not available at these centers or given in inadequate doses as indicated from the referral papers. Moreover there seems to be a failure to recognize and manage complications associated with eclampsia at peripheral centers. Many of the patients were critically ill on arrival at the critical care center. Eclampsia is the commonest cause of convulsion in pregnancy. Like other developing countries, eclampsia is still a major cause of obstetric problems in India. In our study authors found that 72.05% women were primigravidas which was comparable to other studies conducted by Tukur et al<sup>(1)</sup> and Akhtar et al<sup>(2)</sup> who found that 78% and 72.5% were primigravidas in their respective studies.

In the study conducted by Shaheen et al<sup>(3)</sup> and Sarma et al<sup>(4)</sup>, 63% and 65% of women respectively were in the age group of less than 25 years. These results were consistent with our study where authors found 67.5% women in the age group of 21-30 years. In the study by Prabhakar et al<sup>(5)</sup> and Vijayashree M et al<sup>(6)</sup>, it was observed that antenatal eclampsia was found in 77.4% and 71.2% of the cases respectively.

Our study also showed that 70.5% women had antepartum eclampsia. In the study conducted by Choudhary P<sup>(7)</sup> and Edgar et al<sup>(8)</sup> the stillbirth rate was found to be 14% and 12.2% respectively which was comparable to our study with a stillbirth rate of 8.82%.

The rate of preterm infants and small for gestational age infants is higher in women with eclampsia. This is similar to what we found in our study.

The high rates of perinatal mortality could be explained by the earlier mentioned factors like delays in referral, increased onset of fit to delivery interval, presence of multiple co morbid complications. Our study indicate that majority of perinatal mortality. are due to low birth weight and birth asphyxia. The significant number of low birth weight in the study is due to higher incidence of prematurity in patients of eclampsia, mostly iatrogenic.

## ❖ CONCLUSION

- Incidence of eclampsia in our study was 0.71% .Eclampsia is an ongoing challenge for the whole medical community, the root of which lies in the soil of illiteracy, poverty and poorly implemented health care system.
- In our study, 55.8% (38/68) pt, did not receive regular antenatal care at any health centre. Out of the referred cases, 65.3 (17/26) cases did not receive MgSO<sub>4</sub> before referral.
- It is concluded that inadequate antenatal care, delay in women seeking help, delay in diagnosis and inadequate management of eclampsia patient at the peripheral center and delay in referral are the major contributors to the poor outcome of eclamptic women. Eclampsia still remains an intractable obstetric emergency in the underprivileged world and a leading cause of maternal death.
- There were 11 (16.17%) intra uterine death and 6 (8.82%) still birth, 15 (22.05%) Neonatal death due to either delay in referrals, or preterm or may be other co morbid complications.
- Eclampsia still remains a major cause of perinatal loss in many countries, as the exact cause for its occurrence is unknown.
- In our study ,Most of woman presented in antepartum period, so Early detection by newly developed laboratory tests and uterine artery doppler ultrasound periodically and prevention of pregnancy induced hypertension and pre-eclampsia and other associated risk factors for eclampsia might help to reduce the incidence of eclampsia.
- As in our study, (7.30 %) patients had intrapartum and (22.05%) patients had postpartum eclampsia. By strict monitoring of pulse, Bp, urine output, regular medication ,by routine investigation we can prevent intrapartum and postpartum eclampsia also.
- Hence regular antenatal follow up with early detection of hypertensive changes have to be reinforced to every mother during their routine visits to health care centres , also advice given in postpartum period while discharging.
- 22 out of 68 patients developed complications during the course of period. . Authors had 10 ICU admissions and 1 fatal case, died due to Brain haemorrhage.
- With provision of proper transport and medical assistance at first referral level, as well as strengthened intensive care at tertiary level authors can expect a decrease maternal and perinatal mortality in eclampsia significantly. Such interventions will have positive impact on maternal and child care and decrease incidence of eclampsia, its complication and mortality.

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