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Dr. Jessica Celina Fernandes
Assistant Professor, Department of OBG, M.S. Ramaiah Medical College, Bengaluru, Karnataka, India

Dr. Nandini G
Professor, Department of OBG, M.S. Ramaiah Medical College, Bengaluru, Karnataka, India

Corresponding Author:
Dr. Nandini G
Professor, Department of OBG, M.S. Ramaiah Medical College, Bengaluru, Karnataka, India

Maternal and perinatal outcome of eclampsia at a tertiary hospital: A retrospective analysis

Dr. Jessica Celina Fernandes and Dr. Nandini G

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Abstract
Background: Eclampsia is a life threatening emergency, and continues to be a major cause of maternal and perinatal mortality and morbidity. The purpose of our study was to analyse the cases of eclampsia in a tertiary care centre and to study the maternal and perinatal outcome.
Methodology: This was a retrospective study of 7 Years, from January 2013 to December 2019. Case records of all eclamptic patients during this period were analyzed.
Results: The incidence of eclampsia in our hospital was 0.7%. Majority of the patients were less than 25 years, and 95% were unbooked. Antepartum eclampsia accounted for 90% of cases. Main maternal complications included PPH, Abruption and HELLP syndrome. There was no maternal mortality.
Conclusion: Eclampsia is still a serious complication of pregnancy. Timely referral to higher centre, appropriate management of pre-eclampsia can prevent eclampsia.

Keywords: Eclampsia, maternal morbidity, perinatal mortality, perinatal morbidity

Introduction
Eclampsia is defined as the development of convulsions and/ or unexplained coma during pregnancy or postpartum, in patients with signs and symptoms of pre eclampsia [1]. The incidence of eclampsia has decreased in developed countries, but not so in developing countries. Eclampsia continues to be an important cause of maternal and perinatal mortality and morbidity [2]. Eclampsia is rare before 20 weeks of gestation and if it occurs should raise the possibility of an underlying molar pregnancy or APLA syndrome.

Aims and Objectives
1. To assess the incidence of eclampsia in our centre.
2. To analyze the maternal and fetal outcome in eclampsia.

Methodology
This was a retrospective study from Jan 2013 to Dec 2019.
The case records of all the eclamptic patients were collected from the medical records department. The data regarding maternal age, parity, period of gestation, booking status, details of the convulsion (antepartum, intrapartum, postpartum), mode of delivery, drugs used were recorded. Maternal outcome including complications and perinatal outcome with respect to birth weight and NICU requirement were analyzed.
Patients with other causes of convulsions such as meningitis, CVT, epilepsy, ketoacidosis, were excluded.
Pre eclampsia was considered when systolic BP was above 140mm Hg and diastolic BP was above 90mmHg with proteinuria of 1+ or more in a random urine sample or more than 0.3gms in a 24 hour urine sample.
The management of eclampsia included - General measures, anticonvulsants, anti hypertensives, and obstetric management that is, delivery irrespective of gestational age.

Results
The total number of deliveries during this period was 12,111. Eclampsia was seen in 80 women, with an incidence of 0.7%

Table 1: Age distribution of the study population

Age (Years)	Number	Percentage
<20	5	5.68
21-25	40	45.45
26-30	28	31.8
31-35	11	12.5
>35	4	4.5

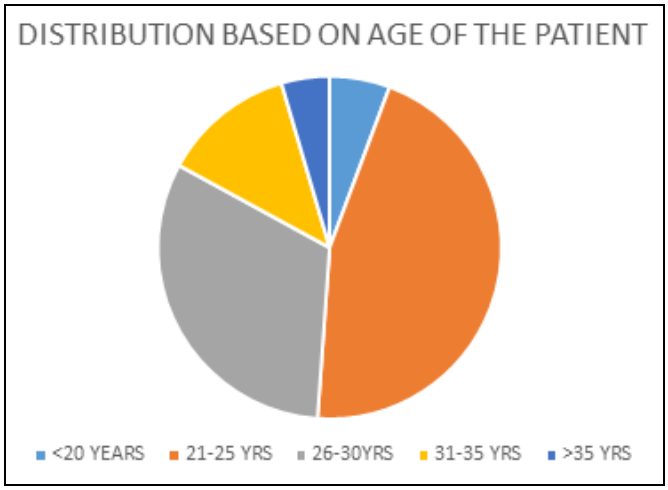

Fig 1: It was noted that 45.45% of the study population were between 21 - 25 yrs of age.

Table 2: Distribution of patients based on booking status

Booking status	Number	Percentage
Booked	4	4.50%
Unbooked	84	95.45%

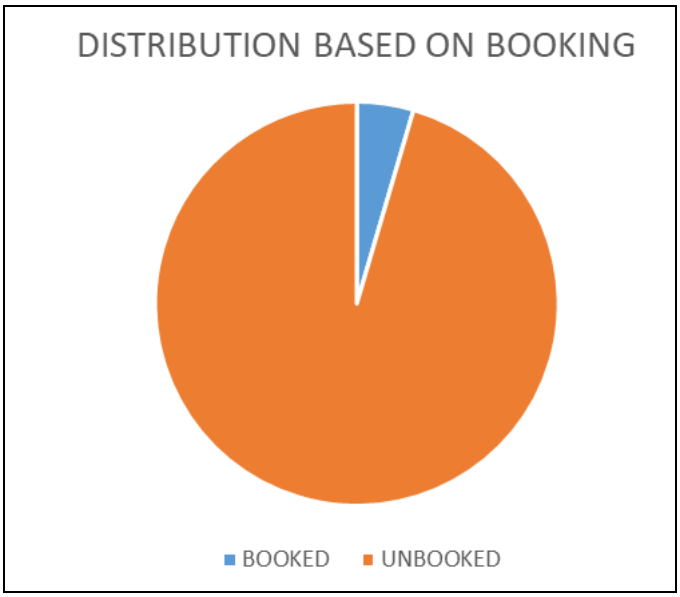

Fig 2: Majority of the patients were unbooked and accounted for 95.45%.

Table 3: Distribution of patients based on Parity index

Parity	Number	Percentage
Primi	46	52.27
Multi	42	47.72

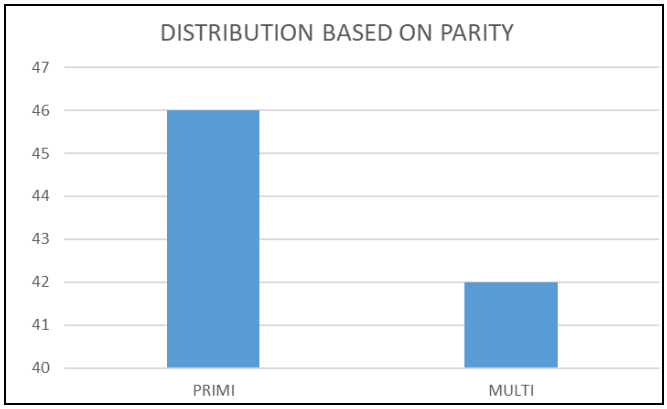

Fig 3: Eclampsia was seen to be higher in primigravidas accounting for 52.27%.

Table 4: Distribution based on type of eclampsia

Type	Number	Percentage
Antepartum	80	90.96%
Intrapartum	6	6.81%
Postpartum	2	2.27%

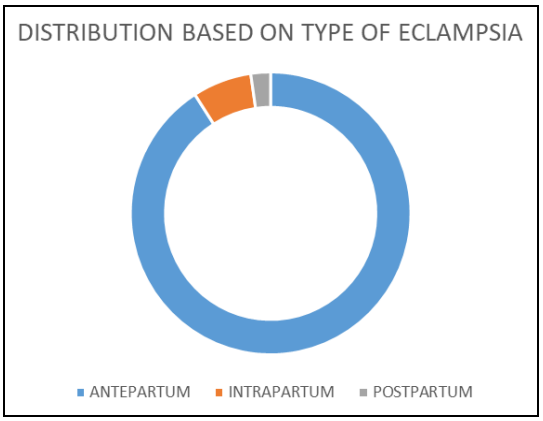

Fig 4: Majority of the convulsions - 90.90%, occured in the antepartum period.

Table 5: Gestational age at the time of admission

Period of gestation	Number	Perentage
<28wks	3	3.4%
29- 32^{+6} wks	25	28.4%
33 - 36^{+6}wks	37	42.04%
>37wks	23	26.3%

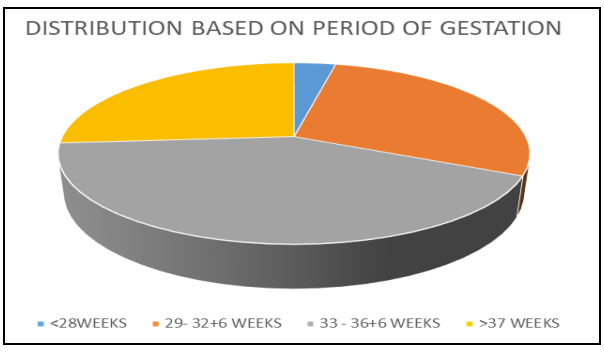

Fig 5: The incidence of eclampsia was maximum between 33 - 36^{+6} weeks of gestation.

Table 6: Mode of delivery

Mode of delivery	Number	Percentage
Vaginal	35	39.77%
Instrumental (forceps/ventouse)	7	7.95%
Caesarean section	46	52.27%

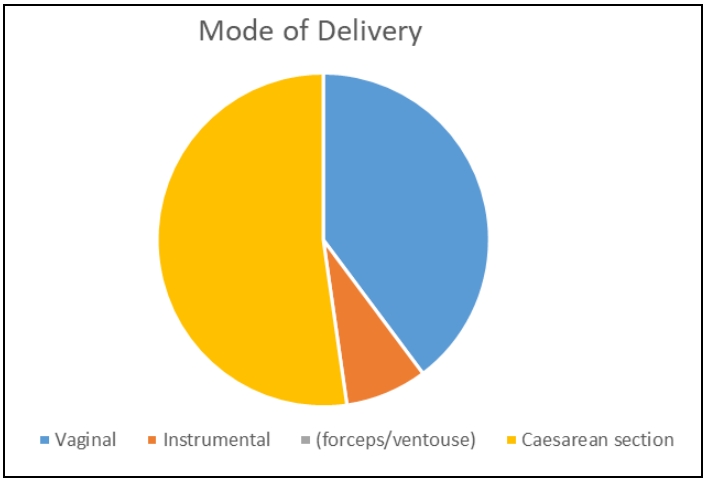

Fig 6: Caesarean section accounted for 52.27% of the cases.

Table 7: Fetal outcome:

Outcome	Number	Percentage
Intrauterine fetal demise	8	9.09%
Still birth	6	6.81%
Live	76	86.36%

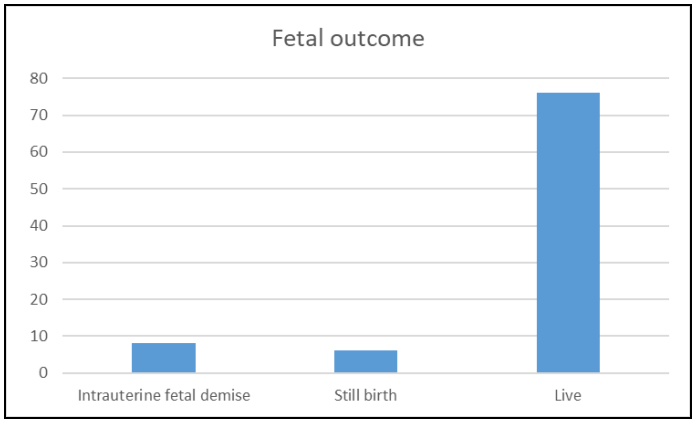

Fig 7: Majority of the patients had a favorable outcome with live births accounting for 86.36% of the cases. There were 2 sets of twin in this study, both of which had a favourable outcome.

Table 8: Birth weight:

Weight	Number	Percentage
<1kg	7	7.77%
1-1.5kg	29	33.3%
1.6 - 2kg	14	15.5%
2- 2.4kg	18	20.0%
2.5- 3kg	15	16.6%
>3kg	6	6.6%

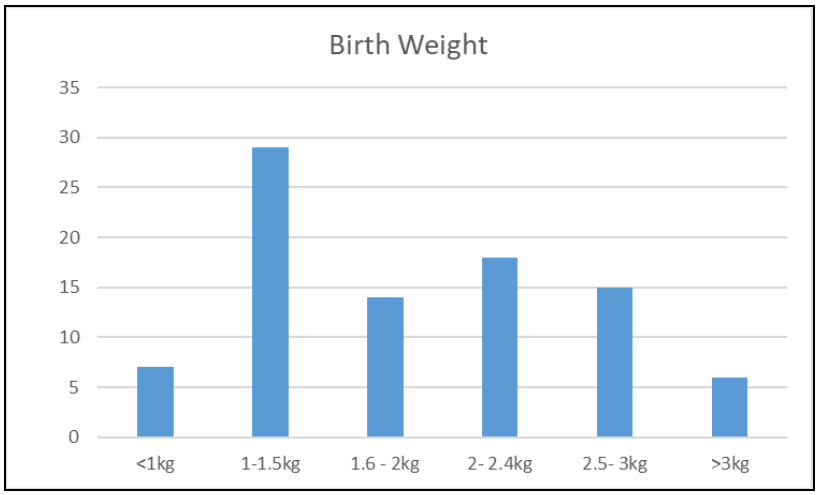

Fig 8: Most of the babies were in the 1 - 1.5Kg weight range. Among the 2 sets of twins one set was between 1-1.5Kg and the other between 2-2.4Kg.

Table 9: Maternal complications:

Maternal complication	Number	Percentage
Abruption	4	4.54%
HELLP Syndrome	7	7.95%
Postpartum haemorrhage	2	2.27%
Disseminated intravascular coagulation	1	1.13%
Intra uterine growth restriction	11	12.5%
Status eclampticus	1	1.13%
Pulmonary edema	4	4.54%
Posterior reversible encephalopathy syndrome	4	4.54%
Renal failure	nil	nil

IUGR was seen to be a major complication in these patients followed by HELLP syndrome.

Table 10: Antihypertensives used

Drug	Number	Percentage
Methyldopa with Nifidepine	30	34.09%
Labetalol	20	22.72%
Labetalol with Nifidepine	38	43.18%

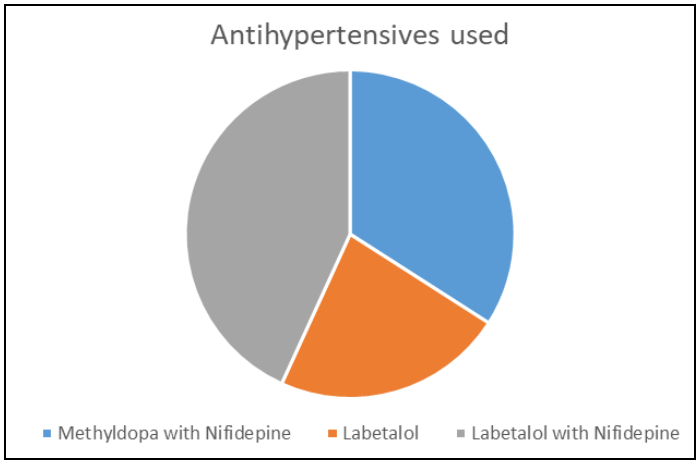

Fig 8: Majority of the patients (43.18%) needed treatment with a combination of Labetalol and Nifidepine to control the blood pressure

Discussion

Eclampsia is a life threatening emergency that continues to be a major cause of maternal and perinatal mortality worldwide [10]. The incidence and mortality of eclampsia has fallen dramatically over the past decades [10].

The incidence in our hospital was 0.7%. The incidence of eclampsia in India is 0.94% to 1.8% in all pregnancies [12]. In our study 50% of the patients were below the age of 25 yrs. This was similar to a study done by Renu Jain *et al.* [1], indicating that early age of marriage and maximum conception is in this age group. In the study conducted by Hussein attia Sharara, 50% were above the age of 33 years [3].

95% of the patients were unbooked and referred to us, ours being a tertiary care centre. The study conducted by Suparna Grover *et al.* and Sunita Mor *et al.* is similar to ours, in which 96% and 98% were unbooked respectively [7, 10].

Primigravidas accounted for 52.27% of our study population. In a study conducted by Murthy *et al.* primigravidas accounted for 70% of the cases [9].

Antepartum eclampsia was seen in the majority, accounting for 90.9%. In the study by Murthy *et al.* 81.8% had antepartum eclampsia [9]. and 87% had anterpartum eclampsia in a study conducted by Dr. Archana *et al.* [8].

In our study 42% of the patients were between 33 to 36 weeks of geatation in comparison to a study by Renu Jain *et al.* where 19.5% were between 33 to 36 weeks [1] and a study by Grover *et al.* where 24% were between 33 to 36 weeks [7].

48% were preterm in a study done by Sunita Mor *et al.* [10].

In our study, 52.27% underwent cesarean section and the remaining were vaginal deliveries. Caesarean section was mainly due to poor bishop score, fetal distress and repeat cesarean for previous LSCS. In a study by Renu jain *et al.* LSCS was the predominant mode of delivery accounting for 68.04% patients [1]. In a study by Rachana Chibar *et al.* [2] cesearean was the common mode of delivery accounting for 57% which was similar to a study by Anuja *et al.* where LSCS comprised 56% [11]

In the fetal outcome, 9% were intra uterine death and 86% were live births. 55% were shifted to NICU, 10% were connected to ventilator and 4% were neonatal deaths.

89% were live births in a study conducted by Renu jain *et al.* [1]. 83% were live births in a study conducted by Paresh shyam *et al.* [6].

56% were less than 2kg and 40% were <1.5kg requiring NICU care in our study. In a study by Renu Jain *et al.*, 12% were <1kg [1].

Among maternal complications, HELLP syndrome accounted for 7.95%, Abruption 4.54% IUGR 12.5% PPH was 2.27% PRES 4.54% and pulmonary edema 4.54%. Renu jain *et al.* reported 3.2% of PPH and 3.2% of HELLP syndrome [1].

HELLP syndrome was 6% in the study conducted by Suparna Grover *et al.* [7] and PRES was 2% in the study by Sunita Mor [10].

There was no maternal mortality in our study, this is possibly due to HDU, ICU and blood bank availability. No mortality was reported in the study by Rachana chibbar *et al.* [2].

The anti convulsant used was magnesium sulphate and only 2 patients has recurrent convulsions and were treated with a repeat dose.

Labetalol with nifedipine was used in 43% of the patients and labetalol only in 22% of the patients, similar to the study conducted by Hussein attia Sharara *et al.* [3].

Conclusion

Eclampsia continues to be a serious complication of pregnancy. Regular antenatal care will help in detecting pre-eclampsia early. Timely referral to higher centers and appropriate management pf pre eclampsia can prevent eclampsia. Use of magnesium sulphate in all cases of eclampsia drastically reduced the mortality.

Doctors and midwives working in rural areas should be trained in early detection of pre-eclampsia and for early referral to higher centers.

Conflict of Interest: Nil

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