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Original Research Article

A study of maternal and foetal outcomes in eclampsia: at a tertiary care centre

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ABSTRACT

Background: Eclampsia is a life-threatening emergency that continues to be a major cause of maternal and perinatal mortality worldwide. In India figure ranges from 8-14% and perinatal mortality ranges from 14.6% to 47.4%. The present study was done with 260 cases of eclampsia who got admitted in our institute.
Methods: It was a prospective observational type of study which was conducted on all pregnant women with more than 20 weeks of gestation having eclampsia who were admitted at our tertiary care centre from October 2018-October 2019.
Results: In our study most of the pregnant mother belongs to the age group of 20-24 years (51.2%.) 85% did not have proper antenatal checkups. The 65.8% eclamptic patients were primi gravida and 44.4% had gestational age less than 37 weeks. More than half patients underwent caesarean for delivery and 48.15% required ICU care. The incidence of maternal mortality in the present study was 4.16% and the common causes for death were pulmonary edema, DIC, status eclampticus with aspiration pneumonia and acute kidney injury. In our study according to maturity of babies almost 56% cases were term and 35.2% babies had birth weight in the range of 2000-2500 gm. The perinatal mortality was 27.7% and corrected perinatal mortality, excluding cases of absent FHS at admission was 22.8%.
Conclusions: Eclampsia continues to be an enigma in spite of great advances in the field of obstetrics. With better antenatal care, early recognition and hospital treatment of severe pre-eclampsia patients, the incidence of eclampsia can be decreased

Keywords: ICU, DIC, FHS

INTRODUCTION

The term “eclampsia” is derived from a Greek word meaning “like a flash of lightening”. It is defined as a convulsive disease occurring in pregnant, parturient or puerperal women, usually characterised by high blood pressure, albuminuria, oedema, and such symptoms as headache, dizziness, disturbances of vision, epigastric pain, convulsions and coma, sometimes ending fatally. The study was done with objectives to determine the incidence, maternal outcomes and perinatal outcomes of eclampsia. The incidence and mortality of eclampsia has fallen dramatically over the past 5 decades.[1] This is likely to be due to better antenatal care combined with improved social and economic conditions. The incidence quoted from the leading centres of India, varies from 0.18% to 4.6%.[2] In India, maternal mortality and morbidity from eclampsia is very high. The figure ranges from 8-14%. A low maternal mortality of 2.2% was reported by Menon.[3] The perinatal mortality ranges from 14.6% to 47.4%.[4]

METHODS

It was a prospective observational type of study which was conducted on all pregnant women with more than 20weeks of gestation having eclampsia who were admitted at our tertiary care centre from October 2018-October 2019.

All pregnant women with more than 20 weeks of gestation and having eclampsia who were admitted in the

department of obstetrics and gynaecology at our tertiary care centre were considered as sampling unit.

Statistical tool used to analyse the data was SPSS version 21 (IBM Corp., Armonk, NY, USA).

The study includes all the patients presenting with convulsion in antepartum, intrapartum, postpartum phase after 20 weeks of gestation and excludes patients with previous history of seizure disorder and patients <20 weeks of gestation with convulsion. On admission detailed history will be recorded from the patient or relative depending upon the condition of the patient.

RESULTS

The present study was conducted to find the incidence of eclampsia among mothers who visited our hospital during the time period October 2018 to October 2020. During the study period around 17000 deliveries were conducted of which 260 patients had eclampsia. Eclampsia is accounted for 1.5% of the total deliveries conducted during the study period. The mean age of eclampsia patients was 22.8±4.24 years. The minimum age of the mother presenting with eclampsia in our study was 12 years and maximum was 40 years. Among the 260 women presenting with eclampsia, 51.2% belong to the age group of 20 to 24 years while 21.5% were less than 19 years. Only, 9.2% belong to the age group more than 30 years.

Table 1: Age distribution of study participants with eclampsia, (n=260).

Age (in years)	N	Percentage (%)
≤19	56	21.5
20-24	133	51.2
25-29	47	18.1
30-34	18	6.9
≥35	6	2.3

Almost 85% of eclampsia patients were not booked with us. Only 15% of patients had booked their pregnancy at our hospital. Most of the eclampsia mothers were primi (54%) followed by multipara (42%). Only 4% of eclampsia mothers were grand multi para with more than 4 parity.

Table 2: Parity of study participants with eclampsia, (n=260).

Parity	N	Percentage (%)
Primi	140	53.8
Multipara (1-3)	109	42.0

In the present study, among those with antepartum eclampsia, most of the mothers presented with eclampsia belong 37 weeks of gestation. The 34% had eclampsia during the gestational age of 33 to 36 weeks. The 4.1% and 6.1% had eclampsia during 29 to 32 weeks and less than 28 weeks respectively. It was seen that 46.2% mothers delivered babies by FTCS, followed by FTVD (20%) and PTCS (19.2%). The 5% of mother had to undergo hysterotomy.

Table 3: Mode of delivery among eclampsia mothers, (n=260).

Mode of delivery	N	Percentage (%)
FTCS	120	46.2
FTVD	52	20.0
PTCS	50	19.2
PTVD	25	9.6
Hysterotomy	13	5.0

In our study 48.1% patients needed intensive care unit admission whereas 51.9% patients were managed in eclampsia ward which means 48.1% patients had poor prognosis on admission itself for which they were shifted to ICU where they were kept on ventilatory support.

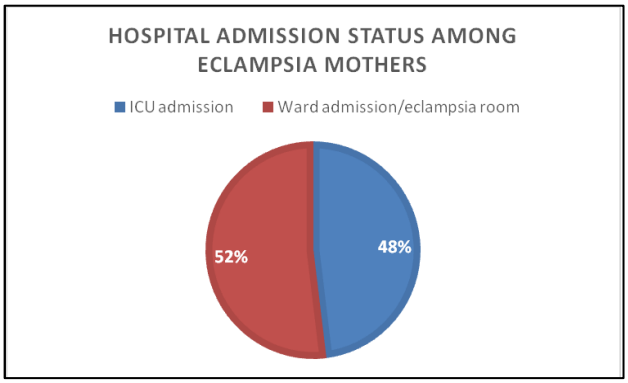

Figure 1: ICU admission status among eclampsia mothers, (n=260).

The most common complication seen among the eclampsia mothers was P-HELLP (10.4%). Around 6% had PPH and HELLP syndrome. Pulmonary edema was seen among 1.2% of mothers. Blood transfusion and FFP transfusion was needed in 9.2% and 3.4% respectively and 0.8% patients had DIC and Aspiration pneumonia.

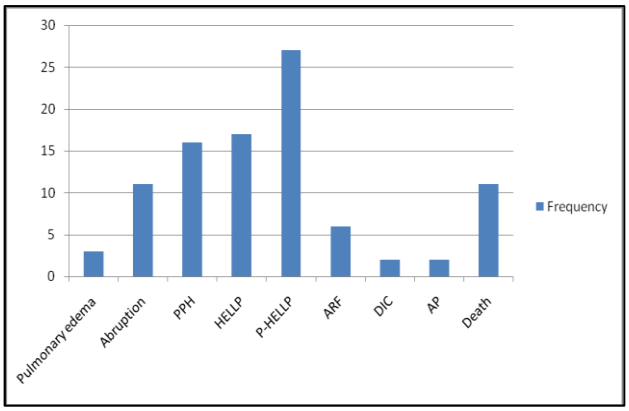

Figure 2: Complication seen among eclampsia mothers.

Overall, 4.2% mother died (maternal mortality) due to eclampsia. From the total 11 mothers that died due to eclampsia, 27.2% was due to pulmonary edema, 18.1% was due to HELLP with DIC, SE with AP and AKI with MA and septic shock. The 9.1% died due to DCM and pneumonitis due to COVID19.

Most (35%) of the baby's birth weight was between 2.0-2.5 kg. 20.9% and 22.4% weighted between 1.5-2.0 kg and 2.5-3.0 kg respectively. 5.6% of babies weighted less than 1.0 kg. In our study only 30% of babies had normal weight of more than 2.5 kg. The 53% and 17% of babies had very low and extremely low birth weight babies respectively.

Table 4: Birth weight of babies born to eclampsia mothers, (n=267).

Birth weight (kg)	N	Percentage (%)
0.5- 1.0	15	5.6
1.0-1.5	21	7.8
1.5-2.0	56	20.9
2.0-2.5	94	35.2
2.5-3.0	60	22.4
>3.0	21	7.8

The most common complication among the babies was fetal death that is 21.3% followed by prematurity 18.7.% and RDS (9.7%), 6.7% had asphyxia and 6.3 were IUD and 3.4% babies had meconium aspiration syndrome and 2.6 % landed up in sepsis.

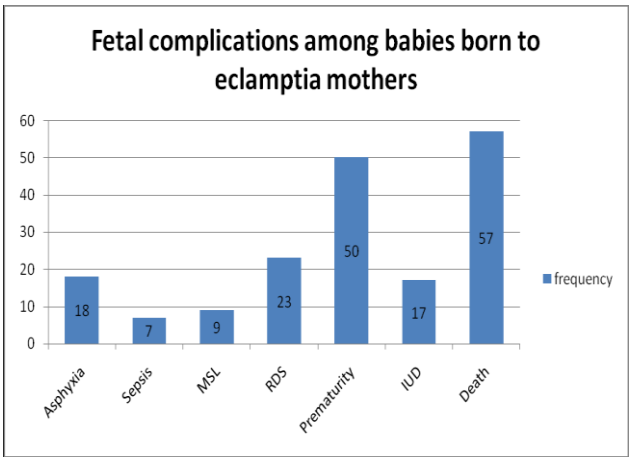

Figure 3: Fetal complication among babies born to eclampsia mothers.

DISCUSSION

The present study is prospective observational study of 240 cases of eclampsia admitted in labour room of our institute over the period of 24 months i.e. October 2018-October 2020.

The incidence of eclampsia and the total number of deaths from eclampsia have come down dramatically in developed countries. This has been achieved with improvements in prenatal care and management. However, in developing countries eclampsia still stands as one of the major complications of pregnancy. The incidence in the present study was 1.5% as against 0.14 to 1.4% reported by Somegouda et al 2.2% reported by Agrawal et al study 2.79% and 1.85% reported by Majhi et al.[3,5-7] In this study 90.8% of patients were below the age of 30 years and 53.8% were primigravida whereas According to Sing et al 90% of cases were <30 years and were primigravida. According to Conde, although nulliparity and young maternal age are well accepted risk factors for eclampsia, they were not found to be associated with the development of complicated eclampsia.[8] In the present study 44.1% patients had duration of gestation <36 weeks, similar observations were made by Dhanajaya et al.[9] Therefore prematurity was the main cause of high perinatal mortality. In our study (78.1%) cases were of antepartum eclampsia, 20% were postpartum eclampsia, 1.8% had antepartum with postpartum eclampsia and only 0.4% patient came with intercurrent eclampsia in comparison with Swain says 84% cases were antepartum and 16% were postpartum eclampsia.[2] In Nobis 50.8% cases were antepartum eclampsia and 29.2% were intrapartum and 19.9%.[3] In the present study maximum cases were preterm 44.4% and term 55.6% which were similar to Bhaskarpal and Niegi preterm (53%) and term (47%). The 70.4% of pregnancy was terminated by LSCS and 29.6% delivered vaginaly which was compared with Swain and Verma et al study where 50.56% and 23.84% had LSCS and 46.33% and 71.54% had vaginal delivery respectively.[2,10] There is no general agreement as to the mode of delivery in eclampsia. Menon and Worley recommended vaginal delivery in eclampsia reserving caesarean section only for obstetrical reasons.[11]

In this study maximum were in the group 2000-2500 gm (35.2%) which was almost similar to Biren Shah 46% and Sandhu 51%. Most common cause of perinatal mortality in our study was prematurity 10.8% followed by respiratory distress syndrome 8.6% followed by 3.7% babies had birth asphyxia and 1.1% babies had meconium aspiration syndrome and 0.7% babies landed up in sepsis which was compared with study of Bhavya et al.[12] In Devi incidence of perinatal mortality-22.2, Sibai et al was 13.3%, Douglas and Redman was 7.3%, Chandra and Bharadwaj was 50%, Lee et al was 64% and Dhananjay et al was 30%.[9,13-15]

HELLP was the commonest maternal complication in this study. Pal Saini had reported incidence of 4% for HELLP syndrome.[14]

Other complications which were encountered in the study was-acute renal failure (6 cases); post partum haemorrhage (16 cases): abruptio placentae (11 cases); pulmonary edema (3 cases); and status eclamptic with aspiration pneumonia 2 cases. So early detection of signs of HELLP syndromes will reduce maternal and perinatal morbidity and mortality. The study was compared with complications reported by Bhalerao et al in which they

reported a 69% complication rate with 30.91% antepartum eclampsia; 5.45% ARF; 25.66% with HELLP syndrome; 5.45% with DIC and 7.27% PPH; 1.82% pulmonary edema.

There were 11 maternal deaths, 3 cases due to pulmonary edema, 2 with DIC and 2 cases of status eclampticus with aspiration pneumonia, 2 cases of acute kidney injury with metabolic acidosis with septic shock, 1 case of dilated cardiomyopathy and 1 case of COVID-19 positive patient with pneumonitis. So, the incidence of maternal mortality in this study was 4.2% which was compared with Majhi et al maternal mortality from eclampsia was 11.28%.[7]

Limitation of the study was the issues due to referred patients from outside hospital which did not allow accurate estimation of the incidence of eclampsia.

CONCLUSION

The study concluded that eclampsia continues to be the life threatening emergency and one of the prime etiological factors for maternal and fetal morbidity and mortality. Eclampsia was commonly observed in younger primigravida lacking antenatal care. Maternal and fetal complications in eclampsia are high requiring management at tertiary care centre. There is an urgent need for proper antenatal care, intensive monitoring of women with eclampsia and timely hospitalization to improve both the maternal and fetal outcome. With better antenatal care, early recognition and hospital treatment of severe pre-eclampsia patients, the incidence of eclampsia can be decreased.

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Ethical approval: The study was approved by the Institutional Ethics Committee

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