Maternal and Foetal Outcome in Eclampsia Patients at a Tertiary Care Hospital

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ABSTRACT

BACKGROUND

Pre-eclampsia when complicated with generalized tonic-clonic convulsions and or coma is called eclampsia. The objective of this study was to evaluate the maternal and foetal outcome in eclampsia patients.

METHODS

The present observational study was conducted among 60 eclampsia patients with more than 20 weeks of gestation who were admitted in the Department of Obstetrics and Gynaecology, at Government Medical College, Chandrapur, Maharashtra, India, from October 2019 to March 2020. Before commencement of the study, ethical clearance was obtained. Waiver of consent was obtained as no other information other than hospital and clinical data was used in this study. On admission, after informed and written consent for eclampsia, patients were managed as per the department protocol.

RESULTS

Eclampsia was more commonly seen in the age group 20 - 24 years (55 %), in primigravida (65 %), in unbooked patients (68.3 %) and patients of rural areas (70 %). Majority of patients developed first episode of convulsion at more than 37 weeks of gestation and around 56.7 % underwent lower segment Caesarean section. The most common indication for LSCS was unfavourable cervix. Various maternal complications like pulmonary oedema, ARDS, abruptio placentae, HELLP syndrome, PPH, severe anaemia and shock were encountered increasing maternal and perinatal morbidity and mortality.

CONCLUSIONS

Eclampsia is associated with significant maternal and perinatal morbidity and mortality, which can be reduced by proper antenatal care, timely detection of high risk cases, adequate utilization of available medical services and timely intervention.

KEYWORDS

Eclampsia, Maternal, Foetal Outcome

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BACKGROUND

Pre-eclampsia when complicated with generalized tonic-clonic convulsions and / or coma is called eclampsia.[1] Eclampsia increases the risk to both mother and foetus. 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 cases.[2] Major complications of eclampsia are abruptio placentae, pulmonary oedema, aspiration pneumonia, ARDS, acute renal failure, neurological deficits, cardiopulmonary arrest, disseminated intravascular coagulopathy, shock and maternal death. The higher incidence of eclampsia and its complications in developing world may be attributed to early age at first pregnancy, poorly equipped maternal health care centres and underutilization of available healthcare facilities.

With maternal complications, foetus is also put at increased risk of uteroplacental insufficiency, intrauterine growth retardation, preterm delivery, low birth weight, birth asphyxia, and cerebral palsy and NICU admissions. The pathogenesis of eclampsia continues to be the subject of debate and extensive research. It is not clear whether the possible changes as observed cerebral oedema with vasospasm, hypertensive encephalopathy, vasogenic oedema and endothelial damage is due to the cause or due to effect of eclampsia.[3]

Objectives

To Study the maternal and foetal outcome in eclampsia patients in our institute and its association with different variables like maternal age, parity, gestational age and mode of delivery.

METHODS

The present observational study was conducted among 60 eclampsia patients with more than 20 weeks of gestation who were admitted in the Department of Obstetrics and Gynaecology, at Government Medical College, Chandrapur, Maharashtra, India, from October 2019 to March 2020. Before commencement of the study, ethical clearance was obtained. Waiver of consent was obtained as no other information other than hospital and clinical data was used in this study. On admission, after informed and written consent for eclampsia, patients were managed as per the department protocol. All records of cases were reviewed based on demographic characteristics, maternal age, parity, booking status, gestational age, mode of delivery, maternal and foetal outcomes.

Inclusion Criteria

1. All primigravida and multigravida with convulsions at more than 20 weeks of gestation, with no prior history of hypertension.

Exclusion Criteria

1. Antenatal women with history of epilepsy
2. Antenatal women with seizures due to metabolic disorders, intracranial space occupying lesions or cerebral infections.

RESULTS

Maternal Age in Years	No. of Cases, n = 60	%
< 19	4	6.6 %
20 - 24	33	55 %
25 - 29	15	25 %
30 - 35	6	10 %
> 35	2	3.3 %
Parity		
Primigravida	39	65 %
Multigravida	21	35 %
Locality		
Rural	42	70 %
Urban	18	30 %
Referral Status		
Direct	17	28.3 %
Referred	43	71.66 %
Booking Status		
Booked	19	31.66 %
Unbooked	41	68.33 %

Table 1. Demographic Characteristics

Table 1 shows demographic characteristics of 60 eclampsia patients. Eclampsia was more common in age group of 20 - 24 years was 55 %, in primigravida was 65 %, in patients of rural areas was 70 % and in referred patients was 71.66 %, and in eclampsia patients with no previous antenatal visits was around 68.3 %.

GA in Weeks	No. of Cases, n = 60	%
< 28 wk.	3	5 %
28 - 32 wk.	7	11.6 %
33 – 36 wk.	13	21.6 %
> 37 wk.	37	61.7 %

Table 2. Gestational Age at Onset of Convulsion

Table 2 shows gestational age at onset of first convulsions. Majority of patients presented with first episode of convulsion at more than 37 weeks of gestation was 61.7 %, 21.6 % patients were in between 33 - 36 weeks of gestation at time of first episode of convulsions. And only 11.6 % and 5 % patients were in between 28 - 32 weeks and less than 28 weeks of gestation respectively.

	No. of Cases, n=60	%
Vaginal Delivery	25	41.7 %
LSCS	34	56.7 %
Undelivered	1	1.6 %

Table 3. Mode of Delivery

Table 3 shows that 56.7 % of patients underwent lower segment caesarean section, 41.7 % patients delivered vaginally and only one patient was undelivered.

Indication of LSCS	No. of Cases, n=34	%
Foetal Distress	7	20.6 %
Unfavourable Cervix	17	50 %
Non Progress of Labour	4	11.8 %
Others	6	17.64 %

Table 4. Indications of Cesarean Section in Eclampsia

Table 4 shows that the most common indication for Caesarean section was unfavourable cervix around 50 % and 20.6 % patients had foetal distress and 11.8 % patients had non-progress of labour for which emergency LSCS was done.

Birth Weight in Kg	No. of Cases	%
< 1.5	9	15 %
1.5 - 2.4	17	28.33 %
> 2.5	33	55 %

Table 5. Birth Weight

Table 5 shows birth weight in kilograms. Around 55 % babies weighed more than 2.5 kg, 28.33 % babies had birth weight between 1.5 - 2.4 kg and 15 % babies had birth weight less than 1.5 kg. One patient was undelivered, so total percentage is 98.33 %.

Foetal Outcome	No. of Cases, n = 60	%
Alive	41	68.33 %
Stillbirth	2	3.33 %
NICU Admission	13	21.7 %
Neonatal Death	3	5 %
Undelivered	1	1.7 %

Table 6. Foetal Outcome in Eclampsia Patients

Table 6 shows foetal outcome in eclampsia patients. 68.33 % babies were born alive, 21.7 % babies were admitted in NICU, 3.33 % were stillborn at time of admissions and there was 5 % neonatal death.

Maternal Complications	No. of Cases	%
Abruptio Placentae	2	9.09 %
Pulmonary Oedema	5	22.72 %
ARDS	3	13.6 %
HELLP syndrome	2	9.09 %
DIC	1	4.54 %
Shock	3	13.6 %
PPH	1	4.54 %
Severe Anaemia	4	18.18 %
Acute Renal Failure	1	4.54 %
Maternal Death	0	0

Table 7. Maternal Morbidity and Mortality in Eclampsia Patients

Table 7 shows various maternal complications. Significant maternal complications were seen in 22 cases out of 60 eclampsia patients such as pulmonary edema, abruptio placentae, HELLP syndrome, DIC, shock, PPH, severe anemia and acute renal failure, of which pulmonary edema was most common and there were no maternal deaths in our observational study.

DISCUSSION

Eclampsia was commonly seen in the age group 20 - 24 years (55.64 %). Similar finding was reported in the studies by G. Mahalaxmi et al.[4] Their study found that 35.3 % were less than 20 years and 60.8 % were in age group 21 - 25 years and only 3.9 % were in age group 26 - 30 years and Aparna Khan et al in their study 84 % of patients were in age group of < 25 years among them 34.42 % were teen age[5] As per NER (National Eclampsia Registry) data 76.34 % of the patients were between 21 and 30 years of age.[6] Eclampsia is most common in primigravida. In our study we found that 65 % of eclampsia patients were primigravida. Sasmita Swain et al[7] found that 83.48 % cases were primigravida, 11.92 % were second gravidae, 1.37 % were third gravidae and 3.23 % of cases were fourth gravidae and above Prabhakar Gawandi et al[8] also reported that maximum number of eclampsia cases were primigravida, total 137 i.e. 75.27 % similar finding in their studies. In our study we also found that 70 % of eclampsia patients were from rural areas and 71.6 % were directly referred from peripheral centers in view of eclampsia for further management. We also found that majority of eclampsia patients had no previous antenatal visits, about 68.33 % were unbooked cases. In a study by Pannu D in North India 56.6 % of women had received no antenatal care before the onset of convulsions. Only 43.3 % of the women were seen by the doctor before the onset of convulsions. Out of the rest only 24 % of women had antenatal care sufficient to the WHO standards.[9] In our study we also found that majority of patients around 61.7 % had their first episode of convulsion at gestational age more than 37 weeks of gestation. Runjun Doley et al[10] in their study found that 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 and Sunita T.H. et al also reported similar finding in their study.[11] As Eclampsia is multisystem disorder, it requires immediate intervention irrespective of gestational age of pregnancy. The definitive management of eclampsia is termination of pregnancy. Once the patient is stabilized, termination of pregnancy is done after assessing Bishops score. Labor can be induced for spontaneous vaginal delivery. But in our study we found that only 41.7 % of eclampsia patients had vaginal delivery and majority of patients 56.7 % had Lower segment cesarean section and only one patient was undelivered. The most common indication for emergency cesarean section was unfavorable cervix around 50 % and rest were for foetal distress, non-progress of labor and others. Doley R et al[10] and Sunita TH et al,[11] also reported caesarean section as predominant mode of delivery as in present study. Sharara HA[12] in their study found that 64 % of the women were delivered by cesarean section and 36 % of the patients were delivered vaginally**.** In our study we also found that around 68.33 % were alive born, around 21.7 % required NICU admissions, 5 % were neonatal death and 3.33 % were stillborn. The common causes for perinatal death are fetal asphyxia, prematurity, fetal growth restriction and acidosis. In our study we found that around 15 % and 28.33 % babies had birth weight less than 1.5 kg and in between 1.5 - 2.4 kg respectively. Many studies have suggested that there is higher risk of preterm delivery and low birth weight in eclampsia, along with increased rate of fetal death.[13,14,15]

CONCLUSIONS

Eclampsia is associated with significant maternal and perinatal morbidity and mortality. Higher incidence is seen in

unbooked patients of rural areas which can be reduced by proper antenatal care, adequate utilization of available medical services and timely intervention.

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