Original Article

ECLAMPSIA AND ITS ADVERSE MATERNAL AND PERINATAL OUTCOMES: AN ANALYSIS AT A TERTIARY CARE HOSPITAL

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ABSTRACT:

BACKGROUND: Eclampsia is a major public health problem, associated with maternal and perinatal morbidity and mortality. Its treatment needs multi disciplinary approach.

OBJECTIVE: To determine maternal and perinatal outcomes of eclampsia in patients attending Khyber Teaching Hospital, Peshawar.

METHODOLOGY: This prospective cross sectional study was conducted at Gynaecology and Obstetrics Department of Khyber Teaching Hospital, Peshawar from 1st January, 2015 to 31st December, 2015. All women of any age or parity with history of seizures after 20 weeks and within 48 hours post partum were included. Detailed history including age, parity, period of gestation, antenatal care, vomiting, epigastric pain, vomiting, pain, visual disturbances, edema, headache and details of seizures were taken. After detailed examination and investigations, all findings were recorded in predesigned proforma and data analyzed.

RESULTS: Incidence of eclampsia was 1.5%, with antenatal eclampsia being present in 55.7% cases. The most prevalent age group was 15-25 years where 61% of our patients fell, followed by 26- 35 years age group. Sixty two percent were primigravidas, and 78.7% cases were non booked. Cesarean section was common mode of delivery in 52% subjects. Acute renal failure and pulmonary edema were seen in 7% cases each, followed by cerebrovascular accidents in 6% and HELLP syndrome, coagulopathy and prolonged unconsciousness in 5% cases each. Perinatal mortality rate was 25.3% and most common fetal morbidity was birth asphyxia in 33%, low birth weight in 23%, NICU admission in 18.58%. Early neonatal deaths were observed in 5.3% and stillbirth rate was 20%.

CONCLUSION: To combat eclampsia, active participation of community, doctors, governmental and non governmental organizations is needed. Perinatal care, health education, training in eclampsia management and timely referral are the strategies for control of this public health problem.

KEY WORDS: Eclampsia, Community, Antenatal Care, Intrapartum, Seizures, Edema.

INTRODUCTION:

Eclampsia is defined as pre-eclampsia complicated by generalized tonic clonic fits[1], during the period of pregnancy, childbirth or within 10 days postnatally, not caused by a coincidental neurological aetiology'[2]. Globally, eclampsia account for deaths of approximately 63,000 mothers per year[3]. Case fatality rate of 14% has been reported in developing countries as compared to 0 -1.8% in developed countries[4]. The high maternal mortality and morbidity in developing nations has been attributed to late referral to a tertiary care

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facility, difficulty in arrangement of transport, hospitalization issues, lack of antenatal care, unconscious state and recurrent fits before anticonvulsant treatment has been given[5].

Eclampsia account for 67.2% of cases of acute renal shutdown in pregnant states which can need treatment through dialysis. Liver damage is result of hepatic parenchymal destruction, periportal necrosis and in rare cases, liver hematomas and rupture[4]. It can also lead to cardiac insult in form of diastolic dysfunction, heavy cardiac load, changes in left ventricular indices and myocardial damge.

Cerebrovascular accidents are also common [6].

Besides maternal morbidity and mortality, eclampsia accounts for high rates of perinatal mortality, estimated to be 68/1000 [7] to 474/1000 deliveries[8]. In the fetus, preterm birth with all its sequelae, birth asphyxia and intrauterine growth restriction are the factors responsible for increase in the perinatal mortality rates. Neonatal Intensive Care Unit admisssions are also increased[3,9]. Eclampsia is an independent risk factor for causation of cerebral palsy in the neonate[10].

Pregnancy related complications like placental abruption and HELLP syndrome are commonly seen complications and are threats to both mother and fetus [10].

The present study was designed to evaluate the maternal and perinatal outcomes in eclamptic patients, and to make recommendations on how to reduce maternal and perinatal morbidity and mortality resulting from eclampsia seen in our institution.

MATERIAL AND METHODS:

This prospective cross sectional study was conducted at Gynaecology and Obstetrics Department of Khyber Teaching hospital, Peshawar from 1st January, 2015 to 31st December, 2015. Inclusion criteria was all women of any age or parity who developed seizures after gestational age of 20 weeks and within 48 hours of delivery. Those patients who were referral cases from peripheral areas for the treatment of seizures or those who developed seizures during their stay in hospital were also included. Those with imminent eclampsia or seizures due to some other cause like neurorological lesion and those having epilepsy were excluded.

Approval was taken from hospital's ethical committee. Written informed consent was taken and detailed history including age, parity, period of gestation, antenatal care, vomiting, epigastric pain, visual disturbances, edema, headache and details of seizures was taken from relatives. For those presenting with postpartum seizures, mode and location of delivery was recorded. General physical examination done to evaluate conscious level, blood pressure, signs of pulmonary edema, reflexes. Per abdominal and vaginal examination was done to assess Bishop score or any sign of labor. Routine baseline investigations, and specific investigations like coagulation profile, renal functions tests, liver functions tests, urine for albumin and plate lets count was done. Ophthalmologist was consulted to conduct fundoscopy. Patients were allocated into three groups depending on time of occurrence of fits into antenatal, intrapartum and postpartum.

Immediate management included passing airway, intravenous cannula, oxygen support, catheterization, blood pressure control, intake output and vital record. Immediate decision was done about the mode of delivery or induction of labor. Further seizures were prevented by giving inj. Diazepam or inj. Magnesium Sulphate as per protocol. For blood pressure control, oral methyldopa or sublingual nifedipine and inj. hydralazine in case of unconscious patients was given. Patients were closely monitored. Neonatal care was done by Neonatologist.

CT scan was performed where suspicion of neurological damage was made. Maternal outcome was determined in terms of acute renal failure, prolong unconsciousness, coagulopathy, HELLP syndrome, pulmonary edema, and death. Fetal outcome was measured in terms of still births, birth asphyxia, Neonatal Intensive Care Unit admissions and Low birth weight. All the data was entered in a predesigned proforma.

The data was analyzed in SPSS 20.0. Mean and standard deviation was calculated for numerical data and frequencies and percentages were calculated for categorical variables. Data was presented in form of tables.

RESULTS:

A total of 8,654 obstetric admissions took place during the study period. Total number of deliveries was 7,553 and 113 patients presented with eclampsia in this time period, making the rate of eclampsia 1.5%. Antenatal eclampsia was seen in 63(55.7%), intrapartum in 21(18.5%) and 29(25.6%) postnatal eclampsia.

Patients were distributed into three age groups and it was observed that the most prevalent age group was 15- 25 years where 69(61%) of our patients fell, followed by 26 -35 years age group where we observed 26(23%) patients. Seventy(62%) women were primigravidas and 89(78.7%) cases were non booked. Mode of delivery in 59(52%) cases was cesarean section, 36(32%) ended in instrumental delivery and 18(16%) had normal vaginal delivery.(Table no.I)

Regarding the maternal complications, most common ones were acute renal failure and pulmonary edema seen in 8(7%) patients each, followed by cerebrovascular accidents in 7(6%), HELLP syndrome, coagulopathy and prolong unconsciousness was seen in 6(5%) each. Abruptio placentae was seen in 5(4%) cases. Fourteen (12%) patients died due to eclampsia. Fourteen women died showing case fatality rate of 12%.(Table no.II)

Fetal outcome in our study was measured in terms of stillbirths which were 23(20%), birth asphyxia which was seen in 37(33%), low birth weight in 26(23%), NICU admissions in 21(18.58%) and early neonatal deaths in 6(5.3%) cases. Perinatal mortality rate was 25.3%. (Table no. III)

TABLE NO.I: MATERNAL CHARACTERISTICS (n=113)

VARIABLE	FREQUENCY	PERCENTAGE
Age		
15- 25 years	69	61%
26- 35 years	26	23%
>35 years	18	16%
Parity		
Primigravidas	70	62%
Multigravidas	43	38%
Booking Status		
Booked	24	21%
Non booked	89	78.7%
Time Of Occurrence		
Antenatal	63	55.7%
Intrapartum	21	18.5%
Postpartum	29	25.6%
Mode Of Delivery		
Normal Vaginal Delivery	18	16%
Instrumental Delivery	36	32%
Cesarean Delivery	59	52%

TABLE NO.II: MATERNAL COMPLICATIONS (n=113)

MATERNAL COMPLICATION	FREQUENCY	PERCENTAGE
Acute Renal Failure	8	7%
Pulmonary Edema	8	7%
Cerebrovascular accident	7	6%
HELLP Syndrome	6	5%
Coagulopathy	6	5%
Prolonged Unconsciousness	6	5%
Abruptio Placentae	5	4%
Blindness	2	2%
Death	14	12%

TABLE NO. III: FETAL OUTCOME (n=113)

FETAL OUTCOME VARIABLE	FREQUENCY	PERCENTAGE
Birth Asphyxia	37	33%
Low Birth Weight	26	23%
Stillbirth	23	20%
NICU admission	21	18.58%
Early Neonatal Death	6	5.3%

DISCUSSION:

Eclampsia is one of the leading causes of perinatal mortality and morbidity worldwide, especially in the developing world. Eclamptic fits occur unexpectedly in majority of the patients and their occurrence cannot be predicted or foreseen.

We have seen through our study that the incidence of eclampsia in our hospital was 1.5%. Onuh SO et al in their study at Benin, Nigeria found the incidence of eclampsia as 1.32%[11], whereas a study at Nishtar Hospital, Multan reported this incidence as 1.8%[8].

In our study, we have observed that the most common age for the occurrence of eclamptic fits was 15 -25 years where 61% of our patients fell. Saxena N et al and Raji C et al in their study on outcome of eclampsia have reported same findings[12,22]. A study at Hayatabad Medical Complex, Peshawar has also supported our figures by saying that 63% eclamptic patients belong to this age range [13]. Eclampsia was more commonly seen in primigravidas in our study(62%). Abalos E et al in their study in 2014 on 875 eclamptic patients gave a very close result of 61.6% primigravidas being eclamptic in their study[14]. Likewise a number of other international studies are consistent with our findings[12,15,16]. According to our study, 78.7% eclamptic women didn't seek any antenatal care, which is quite a high figure. A number of other studies reported same findings [12,15].

We have come to know through the results of our study that 55.7% eclamptic women presented in the antenatal period. Umezurike CC et al reported same findings and two other international studies too[12,15]. Eighteen percent developed seizures in the intrapartum period, close figures of 19.6% and 20% were observed in two other studies [9,17]. Cesarean section was the commonly followed mode of delivery in our

study where 52% women delivered, followed by instrumental delivery for 36(32%) patients. Cesarean section was done in 58% eclamptic women in a local study [17], in addition to two other studies where it was a common mode of delivery [12,18]. Case fatality rate of 12% was seen, which is close to that observed by some national[19], as well as international studies[20]. Case fatality rate is an indicator showing quality of services regarding saving women's lives in that facility, its maximum recommendation is 1% by United Nations[21,23], which is a very low figure as compared to 12% in our study.

Acute renal failure and Pulmonary edema were the most commonly seen maternal complications in this study. Seven percent cases of each of these were observed, Abdullah A et al in their study at a hospital in Sukkur reported 6.8% cases of acute renal failure[17], and two other authors had same results[12,15]. Pulmoray edema was observed in 5% eclamptics by Jido et al[20]. In the same study cerebro vascular accidents were seen in 4.2% cases, close to our rate of 6%. HELLP syndrome, coagulopathy and prolonged unconsciousness was observed in 5% each in our study. Incomparison, Jido et al reported prolong unconsciousness in 10.5%[20], Abdullah A et al observed coagulopathy in 6.6%[17], and HELLP syndrome in 4.3% cases [20], whereas HELLP syndrome was seen as the most common complication in another study being observed in 9.1% women[24].

Regarding the fetal outcome, birth asphyxia was most commonly seen(33%). This figure was seen in 39% in one international study[20] and 37.5% in a local one [13].Twenty three percent babies were low birth weight in our study, as compared to 25.8% by Jido et al [20] and 27% by Abdullah A et al [13]. Twenty percent were stillbirth in our research, two other studies were consistent with our findings[9,20]. Eighteen percent neonates were admitted in NICU, compared to 15% in another study[20]. Perinatal mortality rate in our study was 25.3%, which is supported by a Pakistani study where they observed 24.4% perinatal mortality rate[13].

There were some limitations in our study. Firstly, the neonates were only followed for only one week after delivery. Their follow up beyond this period for three more weeks could have helped us in determing their outcome for at least their neonatal period. Secondly, only Khyber Teaching Hospital was taken as the study place, inclusion of other Hospitals from the same locality could have given better idea about outcomes of eclampsia in the whole area.

CONCLUSION:

Eclampsia is a challenge for the developed and underdeveloped world, its root causes are illiteracy, poverty, lack of antenatal care and women empowerment and disorganized obstetric health system. Active participation of community, doctors, government and non governmental organizations are required for combatting this major health problem. Strategies should be made for providing proper health education and perinatal care by implementing maternal and child care system, training of medical personnels for emergency care in eclampsia and timely referral to tertiary facilities when signs of imminant eclampsia are observed, through transport containing all necessary equipment for emergency situations. The earlier and closer we follow this pathway, the better will be the achievement.

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