Original Article

Eclampsia: Still A Dreadful Situation

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ABSTRACT

Objective: To study the prevalence of eclampsia, its related maternal morbidity, mortality and perinatal outcome.
Study Design: Observational Study.
Place and Duration of Study: This study was conducted in the Department of Obstetrics & Gynaecology at Peoples Medical College Nawabshah from 1st January 2009 to 31st December 2009.
Materials and Methods: All the patients admitted with eclampsia were included in this study and they were analyzed according to their age, parity, duration of gestation, timing of convulsions, mode of delivery, complications and feto-maternal outcome.
Results: 107 patients of eclampsia presented during the study period, giving a frequency of 2.43 %. Mean age group involved was 15 – 24 years (47.7 %) and 25 – 34 years (44.9 %) while 7.5 % were > 35 years. Majority of the patients belong to 15 – 24 years age group and found to be statistically significant (p–0.000). Primi gravida (65 %) were highly effected population. 57 % (62) patients had fits in antenatal period while 9.3 % (10) patients had intrapartum and 32 % (35) patients had postpartum fits.
Vaginal was the commonest mode of delivery 49 (45.5 %). Assisted vaginal delivery in 21 (19.6 %), while cesarean section was performed in 37 (34.6 %) patients. 39 (36.44 %) maternal deaths occurred during study period, while 7 materanl deaths were attributed to eclampsia. Regarding the neonatal outcome, 64.5 % (69) were born alive, 20.6 % (22) were IUD and 15 % (16) were died during neonatal period mostly due to prematurity (75.7 %).
Conclusion: Eclampsia is a big challenge in obstetrics, it can lead to very high maternal and perinatal mortality and morbidity. It is a 3rd commonest cause of maternal death in developing countries.
Community health education coupled with availability of emergency obstetric and neonatal care service at doorstep would reduce the incidence of eclampsia and its associated morbidity and mortality in Pakistan.
Keywords: Eclampsia, maternal morbidity and mortality, fetal outcome.

INTRODUCTION

Eclampsia is an unpredictable multi-organ disorder, unique to human pregnancy, characterized by occurrence of generalized convulsions in women with signs and symptoms of pre-eclampsia[1].
It is a potentially fatal disorder of pregnant woman that has been prevalent since the time of Hippocrates. It remains an important cause of maternal mortality throughout the world. It accounts for about 50,000 deaths annually worldwide[2,3].
In Pakistan where the mortality rate is 500/100000, eclampsia is the 3rd leading cause of the maternal death[4].
Hypertensive disorders complicates 10 – 15 % of pregnancies, eclampsia occur in 1.3 % of pregnancies.
In Pakistan and other developing countries, the incidence of eclampsia and its related morbidity and mortality are quite high because of poverty, illiteracy, lack of health awareness and superstitious believes prevents the woman from seeking the medical advises during pregnancy[5]. Incidence of gestational hypertension are also increased in patients with twins (25.9 %) and in patients who had gestational hypertension in previous pregnancy[6].
The risk to the mother and fetus from eclampsia appear to be more related to degree of pre-eclampsia pre-existing the convulsions and number of convulsions prior to the admission[7].
Inspite of its importance for public health, the etiology of this disorder is unknown. It is a multisystemic disorder with various forms and which are believed to result from a failure of the normal invasion of trophoblastic cell, leading to mal-adaptation of maternal spiral arteries[8].
It can also be associated with the hyperplacentation disorder such as diabetes, hydatidiform mole and multiple pregnancies. Nutritional, environmental and genetic factors play a role in maternal systemic reaction that produces the clinical signs and symptoms of the disorder[9].
Objective of our study was to determine the frequency of eclampsia in our setup and observe its maternal and fetal outcome.

MATERIALS AND METHODS

This was a descriptive study of proposive cohort carried out in the Department of Obstetrics & Gynaecology at Peoples Medical College Nawabshah from 1st January of 2009 to 31st December 2009.

Eligible patients included women admitted during the study period with diagnosis of eclampsia and unexplained convulsions occurring during antepartum, intra partum and post partum period.
Exclusion criteria were diagnosed cases of epilepsy and fits due to known other medical disorders.
Patients were analyzed according to their age, parity, duration of gestation, time of convulsions, mode of delivery, complications and fetomaternal outcome.
Physical examination was performed for level of consciousness, assessment of the blood pressure and for any sign of cardio-pulmonary compromise. Abdominal examination was carried out to assess the uterine size in comparisons with gestational age, fetal presentation, fetal viability and for uterine contraction. Vaginal examination was performed to assess the Bishop score and adequacy of pelvis.
Necessary investigations like complete blood count, liver function test, renal function test, coagulation studies, urine detailed report and ultrasound were carried out in all patients. In selected cases CT scan was performed to assess the neurological damage.
All the patients were managed in ward according to hospital protocol and patients with serious complications were shifted to ICU. Pregnancy was terminated after maternal stabilization, patients monitored regularly till they become conscious and ambulant. Maternal outcome were measured in term of death or complications like cerebrovascular accident, cardio pulmonary compromise and heamatological disorders (HELLP syndrome). Perinatal morbidity (Preterms, low birth weight, IUGR) and mortality (still birth and neo natal death) were all recorded.
Data was entered in a pre-designed proforma and analysed through SPSS Software version 10.0. For quantitative variables like age, mean value and standard deviations were calculated and for qualitative variables (gravidity, parity, maternal complications and fetal outcome).

RESULT

Over a period of one year, out of the total 4395 deliveries, 107 (2.43 %) patients were diagnosed as eclamptic and were recruited for further study. Their mean age with ± SD was 29 ± 6.61 years. Women between the ages of 15 – 24 years were 47.7 % (51), 25 – 34 years 44.9 % (48) and 7.5 % (8) were > 35 years. Primigravida were 60.7 % (65), Para 2 – 5 were15 % (16) and para > 5 were 24.3 % (26) respectively.
Antepartum eclampsia was seen in 57.9 % (62) cases, 9.34 % (10) and 32 % (35) were intrapartum and postpartum respectively. Majority 47.7 % (51) cases were seen of age group 15 – 24 years and that was found statistically significant (p-0.000) and primigravida (60 %) were seemed to be at highest risk for developing eclampsia. Vaginal was the mode of delivery in 45.5 % (49), 19.6 % (21) were delivered through assisted vaginal delivery while C-section was performed in 34.6 % (37) cases.

Out of 107, the deranged liver function was found in 16 (15 %) cases, abruptio placentae in 10 (9.3 %), renal failure in 3 (2.8 %), temporary blindness in 2 (1.9 %) cases, HELLP syndrome was found in 2 (1.9 %) cases, pulmonary edema in 3 (2.8 %) cases and CVA in 2 (1.9%) cases. Out of 107 patients, 7 (6.5 %) were died due to one or more than one complication (Table No.1). The cause of death was pulmonary edema 3 (42 %) cases, cardiac arrest in 1 (14.29 %) case, CVA in 2 (28.57 %) cases and renal failure in 1 (14.29 %) case, remaining 93.5 % (100) cases recovered with time.
Total number of maternal deaths during the study period were 38 and eclampsia contributes 18 % of it. Regarding the fetal outcome 64.5 % (69) patients were born alive, 20.6 % (22) were IUDs and neonatal death was noted in 15 % (16) cases and it was mostly due to prematurity 75.7 % (81) (Table No. 2).

Table No.1: Maternal complications seen with eclampsia. (n=107)

Complications	Number N (%)	Final outcome Recovered/expired
Deranged LFT	16 (15 %)	All are Recovered
Abruptio Placentae	10 (9.3 %)	All are Recovered
Renal Failure	3 (2.8 %)	2 Recovered 1 (14.29 %) Expired
CVA	2 (1.9 %)	Both expired (28.57%)
Pulmonary edema	3 (2.8 %)	All expired (42.85%)
Temporary Blindness	2 (1.9 %)	All are Recovered
HELLP Syndrome	2 (1.9 %)	All are Recovered
Cardiac Arrest	1 (0.9 %)	Expired (14.29%)
	107 (100 %)	Mortality 6.5 % (7 Expired) Recovered 93.5 % (100 Pts)

Table No.2: Fatal Outcome

Outcome	No	Percentage %
Alive Baby	69	64.5
IUD	22	20.6
Neonatal Death	16	15
	107	100

DISCUSSION

Eclampsia and Pre-eclampsia accounts for significant maternal and perinatal mortality.
The incidence of eclampsia in Western countries is about 1/16000 pregnancies[10]. In our study, the frequency of eclampsia was 24/1000 pregnancies. Talat

Naz et al reported the frequency of eclampsia 11.5/1000 pregnancies[5], Naseeruddin indicates the prevalence of eclampsia 18/1000 pregnancies[11], while another study at Lahore revealed the frequency of eclampsia 10/1000 pregnancies. The high frequency in our study probably indicate illiteracy, low socioeconomic status, lack of antenatal care, poor healthcare system and late referral of patients by healthcare providers.

Eclampsia has been found more common in third trimester of pregnancy as the term approached[12]. Approximately 50 % of the cases developed fits before the delivery, the remaining 50 % are divided equally between the intrapartum and postpartum period[6]. In our study, the occurrence of eclampsia in antepartum period was 57.9 %.

Ikechebelu JI, Okoli, in their study at Nnewi in Nigeria showed the incidence of antepartum eclampsia was 55.8 %[13]. There is another study conducted by Jamelli RN at JPMC Karachi, she also found the occurrence of eclampsia more in the antenatal period (54.3 %)[14].

Eclampsia is more common in primi gravida and in grand multipara. In our study, the frequency of eclampsia in primi gravida was 59.8 % and in grand multipara 26 %. Sultana et al in her study at Ayub teachong hospital Abbottabad also mentioned more frequency in primi (46 %) and grand multipara (38%)[12].

Control of the convulsions and prevention of further fit is the first goal of management. Magnesium sulphate was used as an anticonvulsant in almost all the patients except in those who were deeply unconscious having respiratory depression, slow reflexes and urine output < 300 ml in 24 hours. Many randomized control trial showed that the efficacy of magnesium sulphate for the control of the fit and prevention of the further fit superior to the diazepam.

Mst Rashida Begum, in her study shows the control of the convulsion and prevention of further fits is good with magnesium sulphate as compared to phenytoin and diazepam[3].

In another study conducted at Dhaka by Begum and Begum, she showed the only loading dose of magnesium sulphate is adequate to control the fits and prevention of the further fits.

The Magpie trial showed that preventive magnesium sulphate for all severe cases pre-eclampsia can reduce the risk of development of eclamspia and maternal death by 58 % and 45 % respectively[16].

Khedun S.M et al, in their study at South Africa also shows the good response in control of convulsion by magnesium sulphate as compared to the diazepam[17].

Control of the hypertension is the second goal after controlling the convulsions to prevent the complications such as cerebrovascular accident, renal failure and placental abruption. Choice is very wide depends upon the availability of drug and the personal experience. We use methyldopa and nifidipine as the first line treatment as the hydraliazine is not available in our setup. Mst Rashida Begum, in her study at Bangladesh used hyraliazine in acute stage followed by oral nifidipine and methyldopa alone or in combination. Similar regimen has been adopted by Khedun S.M in South Africa[17].

In Pakistan, where the maternal mortality rate is 500/100000, eclampsia is the 3rd leading cause of maternal death. Jamelli Rana found 8 % fatality rate during her 5-year study period. We also have the maternal mortality 5.6 % and perinatal mortality 35.5 % due to eclampsia. Similar situation has been observed in many studies in Pakistan.

Bashir et al reported 8.35 to 10.3 % maternal mortality and 55.7 % perinatal mortality in his study at Faisalabad in 1991 – 93[18].

The most common cause of maternal death in our study was pulmonary oedema, while the second commonest cause was cerebrovascular accident. Other causes were renal failure and cardiac failure.

Regarding the perinatal mortality, the most important reason for neonatal death was prematurity related problems.

CONCLUSION

Eclampsia is a big challenge in obstetric and still a major cause of maternal and perinatal mortality & morbidity.

Community based health education, timely referrals of high risk patients coupled with availability of emergency obstetric care and neonatal care services would reduce the incidence of eclampsia and its associated morbidity and mortality in Pakistan.

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