

Eclampsia : A Major Cause of Feto – Maternal Mortality and Morbidity?

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Introduction: More than 50,000 women die of pre-eclampsia or eclampsia and 99% of these deaths occur in developing countries.

Objective: To enlist the feto-maternal deaths and maternal complications in order of frequency in patients of eclampsia.

Study Design: Descriptive study.

Subject and Settings: All 6000 patients who delivered in MTH Hospital Faisalabad during two years of study from September 2007 to September 2009 were considered to sort out patients with eclampsia. By purposive sampling technique patients who fulfilled the inclusion criteria were selected. A printed proforma was used to record information, descriptive statistics (χ^2 goodness of fit) applied and maternal morbidity and mortality & perinatal mortality recorded.

Results: Thirty four patients with eclampsia were enrolled in this study. Five patients (14.7%) and sixteen babies (47%) died. Overall 23% patients had at least one complication and remainder 67% had more than one complications. Ten patients (29.4%) had infection, DIC and acute renal failure. Eight patients (23.5%) had haemorrhage, cerebral oedema and same number had CVA. Six patients (17.6%) had pulmonary embolism. Four (11.7%) had abruptio – placentae and same number had HELLP syndrome. Three patients (8.82%) had the rare complication of temporary blindness while two patients (5.88%) had cerebral bleed and only one patient (2.94%) had myocardial infarction. All patients were un- booked and majority were primigravidas (65%) and presented with complications. Rate of surgical intervention was high (55%) with all of its consequences.

Conclusion: Eclampsia is a major cause of maternal morbidity and mortality in obstetric patients . Major bulk of the patients had multiple complications at the time of presentation. So emphasis must be laid on large scale nation wide programmes about health education, good antenatal care and simple screening measures.

Keywords: Eclampsia, Maternal mortality and morbidity, Perinatal mortality.

Introduction

Eclampsia is a serious complication of hypertensive disorders of pregnancy accounting for about 50,000 maternal deaths a year world wide.¹ It is defined as “ the occurrence of convulsions, not caused by any coincidental neurologic disease such as epilepsy, in a woman whose condition also meets the criteria of preeclampsia.² Like other developing countries, eclampsia remains amongst the commonest cause of maternal and perinatal death in Pakistan. Associated complications of eclampsia include HELLP Syndrome (3%), disseminated intravascular coagulation (DIC) (3%), renal failure (3%), cerebral haemorrhage or oedema, cardiac failure and adult respiratory distress syndrome (ARDS) (1%).³ Perinatal morbidity and mortality are increased with this disease often as a result of a iatrogenic premature delivery, intrauterine growth restriction, or placental accidents such as placental abruption. Following eclampsia, the risk of problems in future pregnancies have been estimated at around 20% for pre-eclampsia and around 2% each for recurrent eclampsia, abruption and perinatal death.⁴ In developed countries with effective antenatal screening programmes, improved diagnostic and therapeutic criteriae and extensive research the disease has become a rare complication of pregnancy. Unfortunately, such changes have not

occurred in developing countries and eclampsia continues to be common.⁵ The aim of this study was to determine the feto-maternal morbidity and mortality in patients of eclampsia.

Aims and Objectives

To enlist the feto-maternal deaths in patients of eclampsia and find the frequency of maternal complications in patients of eclampsia.

PATIENTS AND METHODS

It was a cross sectional study, performed at Madina Teaching Hospital Faisalabad during a two year period from September 2007 to September 2009. Patients with eclampsia were admitted through emergency. Inclusion criteria was the patients developing eclampsia in second half of pregnancy or within ten days after delivery; and exclusion criteria was patients with fits due to epilepsy, cerebral cause or any other metabolic cause and, patients presenting ten days or more after delivery.

A detailed history was taken from attendants or from patient (if conscious and well oriented in time and space), regarding gestational age, or timed passed after delivery, number of fits and their nature, history of raised blood

pressure, proteinuria, swelling of feet, headache, epigastric pain, visual disturbances, vomiting, urinary problem or bleeding per vaginam. A thorough general physical and systemic examination was performed, recording blood pressure, pulse, temperature, oedema, jaundice and pallor. Lungs and heart were auscultated to note any abnormalities. Reflexes were checked. Obstetrical examination included abdominal examination to determine lie and presentation of foetus, amount of liquor, any element of intrauterine growth retardation and fetal heart rate (if alive). Vaginal examination performed to note degree of cervical dilatation, effacement, station of presenting part and pelvic capacity in case of primigravida. Mode of delivery (vaginal / abdominal route) was decided according to the bishop score, patient's condition and fetal condition. After delivery patients were observed in intensive care unit for 24 – 48 hours and patients were followed up for complication for upto ten days. All of these informations were recorded on a proforma. Lab investigations included: Blood group and Rh factor, Blood complete examination, Platelet count, Serum electrolytes, Blood urea, Serum creatinine, Liver function tests, Serum fibrinogen, Complete urine analysis, 24 hours urinary protein estimation, and Ultrasonography. Data analysis was computer based using SPSS version 8 and χ^2 goodness of fit statistical test was used to analyze the data.

Results

The present study was a descriptive study done at MTH Hospital Faisalabad which is the third biggest city of Pakistan. Not only the population of Faisalabad, but patients from periphery also drain in this hospital. In the two years study period a total of 6000 patients were delivered in this hospital. Out of these patients a total of 34 patients were found to have eclampsia. All of these patients presented with fits and raised blood pressure. Other associated complaints were unconsciousness, irritability, coma, ARDS, abruptio-placentae, epigastric pain, vomiting, blurring of vision, headache, haemorrhage and oedema.

Out of these 34 patients 5 patients (14.70%) died due to some of its complication, and 16 babies (47.0%) died in utero or after delivery within seven days (Table 1). Out of these 5 maternal deaths, 2 were due to cerebral bleed, 2 were due to pulmonary embolism and 1 was due to myocardial infarction (Table 2).

Regarding complications, major bulk was contributed by infection, DIC and acute renal failure, with each occurring in 29.4% of cases. 2nd group was haemorrhage, cerebrovascular accidents, cerebral oedema and ARDS, presenting in 8 patients each (23.5%). Six patients had pulmonary embolism (17.6%), 4 patients had HELLP syndrome (11.76%) and same number had placental abruption. Three patients had temporary blindness (8.82%), two patients had cerebral bleed (5.88%) and only one patient had myocardial infarction (2.94%) (Table 3).

Perinatal mortality occurred in 16 cases (47%). Eighteen babies remained alive but had some of complications

i.e prematurity, IUGR, jaundice and RDS.

Table 1: *Maternal and Perinatal Mortality in Patients of Eclampsia.*

Mortality	No. of Deaths	% Age
Maternal	05	14.70
Perinatal	16	47.0

n = 34

Table 2: *Causes of Maternal Deaths in Patients of Eclampsia.*

Cause of Death	No. of Patients	Percentage (%)
Cerebral Bleed	2	5.88
Pulmonary Embolism	2	5.88
Myocardial Infarction	1	2.94
Total	5	14.70

n =34

Table 3: *Frequency of Major Complications in Patients of Eclampsia.*

Complications	Frequency	Percentage %
Infection	10	29.4
ARF	10	29.4
DIC	10	29.4
Haemorrhage	8	23.5
CVA	8	23.5
Cerebral Oedema	8	23.5
Pulmonary embolism	6	17.6
Death	5	14.70
Abruptio-placentae	4	11.7
HELLP Syndrome	4	11.76
Blindness	3	8.82
Cerebral bleed	2	5.88
Myocardial infarction	1	2.94

n=34

Discussion

Hypertensive disorders of pregnancy are a major cause of maternal and fetal morbidity and mortality all over the world.⁶ Eclampsia is a well recognized complication of hypertensive disorders of pregnancy. In the developing countries like, UK eclampsia is rare, complicating about one – in – two thousand pregnancies; But in developing countries the prevalence has been estimated to be up to 20 times higher.⁷⁻¹⁰

Of the estimated 600,000 women worldwide who die each year of pregnancy related causes, more than 50,000 die of pre-eclampsia or eclampsia,⁴ and 99% of these deaths occur in developing countries.

There is no hard evidence that the incidence of pre – eclampsia is higher in developing countries than in developed ones. But when it does occur it tends to be more severe and life - threatening for the following reasons: With little or no antenatal care available in developing countries, pre-eclampsia tends to remain undiagnosed until the condition has reached an advanced stage ; women in these countries tend to have underlying health and social problems which increase their risk of developing pre-eclampsia and worsen the outcome for them and their babies. These problems include hypertension, malnutrition, anaemia, chronic malaria and a tendency to have many babies, starting at a young age.^{7,8}

In these 34 patients 5 patients died (14.7%) and major causes of death were cereberovascular accident i.e cerebral bleed and pulmonary embolism (5.88% each). It favours the observation that maternal mortality is very high due to hypertensive disorders in developing countries.^{7,11,12}

This result is also favoured by a study done in Lady Willingdon Hospital Lahore in 2002 indicating eclampsia as one of the major causes of maternal deaths.¹³ Even, in developed countries like UK large no of maternal deaths are associated with eclampsia. World wide cereberal haemorrhage is the principal cause of maternal death, although in UK pulmonary complications have now superseded cereberal cause.^{7,14}

The last CEM D identified substandard care in 16 of 20 i.e 80% of deaths related to hypertensive disease.^{6,15,16} The major difference in the causes of maternal death between developed and developing countries are related to the availability of medical care.^{8,17} For example, deaths due to unsafe miscarriage account for an estimated 13% of maternal deaths in the world but are extremely rare in developed countries, where safe miscarriage services are widely available. Globally, obstructed labor accounts for an estimated 8% of maternal deaths, but such deaths are almost unknown in countries where cesarean delivery is available.¹⁸ That is why deaths due to complications of hypertensive disorders are less in developed countries when compared with developing countries. We should take measures to reduce this problem in our country by simple measures of education, early screening and provision of antenatal care to all.

Majority of patients belonged to low socio-economic

group and were illiterate . Most of them had never antenatal visit and presented late with complication of eclampsia. It favours the observation that education, good antenatal care, early referral to intensive care units for standard care can reduce its incidence and complications.¹⁹⁻²¹ Due to lack of awareness people do not seek medical advice at an early stage. As majority of masses belong to low socio – economic group they do not report to hospital even in late stage . It is therefore reasonable to assume that quite a large number of patients die at home without getting to hospital.

Regarding complications, it was observed that most common complications were infection, acute renal failure and DIC followed by cereberovascular accidents, ARDS, HELLP syndrome, abruption – placenta and blindness. The same results were seen in study in UK and Colombia. Study done in Colombia showed that 24% patients had atleast one complication and remainder had multiple complications.^{22,23} In a study in UK it was seen that 35% patients had at least single complication.⁶ In this study about 23% patients had atleast one complication and remainder had more than one complication. In this study about 56% patients had surgical intervention, showing high rate of surgery in these patients with its attendant consequences as shown by other studies in United Kingdom, USA and also in developing countries.^{6,11,12,19}

The perinatal deaths were 47% showing a high perinatal mortality in eclampsia, prematurity accounting for major bulk. This result is similar in other studies done in Brazil, Colombia, Ghana (24%), Uganda, India, South Africa (30%) and Zimbabwe (28%) showing high perinatal mortality in these patients.^{7,11,12,21}

The results of this study depict a pitiful and gloomy picture of our society. There is an alarming rise in the frequency of eclampsia and its complications. An aspect of major concern is that about 65% patients presented in late stage with major complications. The main contributory factors responsible for late presentation in most of the patients were lack of health awareness, financial handicap, and difficulties in access to trained medical staff.

To avoid these complications all national resources should be directed with full zeal and endeavour to increase the literacy rate and hence awareness among the population. The fight against eclampsia should include introduction of comprehensive programmes based upon local epidemiological studies, focusing attention on health education, a network of easily available medical facilities. Retraining of traditional birth attendants to identify the risk factors and early referral to tertiary care center is also necessary. Intensive care units should be available in every tertiary center for mother and baby. Medical staff should be trained for early detection, management and care of these patients. It is the only way, by which we can defeat this powerful enemy.

Conclusion

Eclampsia is responsible for considerable maternal and perinatal mortality as well as maternal morbidity. Maternal

morbidity includes severe bleeding from abruptio-placentae with its resulting coagulopathy, pulmonary oedema, aspiration pneumonia, acute renal failure, cerebrovascular haemorrhage, liver rupture and retinal detachment.

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