ORIGINAL ARTICLE

Feto Maternal Outcome in Patients with Eclampsia at a Tertiary Care Hospital

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ABSTRACT

Objective: To see fetomaternal outcome in patients with Eclampsia.
Methodology: This study was conducted at Lady Willingdon Hospital/K. E. Medical University from January 2009 to December 2009. In this descriptive case series a total 100 patients of Eclampsia were included through non probability convenience sampling. The inclusion criteria was defined clearly and all those diagnosed cases of Eclampsia after 24 completed weeks of gestation and who were delivered through caesarean section were included in the study, whereas all those patients having multiple pregnancies, with anomalous babies were excluded.
Results: In current study main presenting complains in the study group were body swellings & loss of conscious level in 92(92%) patients and 88% had blood pressure along with convulsions. Seizures were preceded by headache, blurring of vision in all 100 patients, 98% of patients complained of vomiting, with epigastric pain in 3%, 4% had jaundice and in 98(98%) of the eclamptic patients were found to have proteinuria. Ten of these eclamptic mothers (10%) died, of these 7 because of pulmonary edema, 2 due to DIC and another 1 had renal failure. Thirty eclamptic mothers (30%) developed complications like, pulmonary edema (11%), CVA in (2%), renal failure (2%), DIC (4%), and 11% had deranged LFT's including one case of HELLP syndrome. As far as fetal outcome is concerned alive born babies were 80%, of these 39% were term and 61% preterm while 20% were stillbirths out of which 17(17%) were preterm and 3(3%) were full term babies. APGAR score in 60% babies was less than 4 at birth and 13% had less than 4 score at 5 minutes after delivery.
Conclusion: It can be stated that our health care system contains inadequate facilities to provide satisfactory antenatal service to our pregnant mothers.
Keywords: Eclampsia, feto-maternal outcome

INTRODUCTION

Eclampsia is commonly understood as tonic colonic fits that occur during second half of pregnancy and are excluded from categories of epilepsy or other convulsive disorders. Typically, Eclampsia occurs in primigravidae as some protection is offered by previous pregnancies.

The epidemiological figures of Eclampsia are not consistent worldwide, in fact the incidence of Eclampsia varies geographically according to the standard antenatal care facilities provided in that area. It is 4.9/10000 with maternal mortality of 1.8% in United Kingdom whereas incidence in Pakistan is around 1.6% with maternal mortality ranging from 16.9 -27.5% as indicated in some local studies. Also studies reveal that mostly 6.24-47.4% of the babies of eclamptic mothers do not survive[1,2,3].

Mostly Eclampsia is preceded by pre-Eclampsia but in 15-20 percent of the cases it may arise without any symptoms of pre-Eclampsia too. Eclampsia needs an immediate management; otherwise it may become an inevitable consequence of disease progression of pregnancy induced hypertension (PIH). But it may not be taken in perception that it will necessarily occur in every patient of PIH. The incidence of Eclampsia increase towards term and up to ten days postpartum. It is reported that 44% of fits may occur in postpartum, 38% ante partum and 18% intra partum[1].

High risk of developing Eclampsia exists at lower extreme of reproductive age group, with central obesity, essential hypertension, diabetes mellitus (DM), hypothyroidism, connective tissue disorders, asthma and migraine[2]. Other conditions which can cause tonic colonic fits include epilepsy, intracranial hemorrhage, thrombosis, meningitis, encephalitis, cerebral tumors and hyperventilation syndrome. It is recommended to make a diagnosis of Eclampsia for possible existence, in patients who present with convulsions during pregnancy, labour or puerperium[4]. Some clinical causes of maternal deaths that are followed after Eclampsia are cardiopulmonary failure, acute renal failure, cerebrovascular accident(CVA), elevated liver enzymes , hemolysis and premature

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separation of placenta[5]. Laboratory findings in eclamptic patients are very much analogous to those with pre-Eclampsia of varying degrees.

Reasons like iatrogenic prematurity, respiratory distress syndrome (RDS), intrauterine asphyxia, intrauterine growth restriction (IUGR) and intrauterine death (IUD) are mostly attributed for poor fetal outcome. Additionally at later stages of life, IUGR may result in neurodevelopmental defects in children[6].

Communicating public awareness effectively and providing integrated antenatal care system can help greatly in prevention of this pregnancy related complication i.e., Eclampsia and these steps have already shown effective results in most of the developed as well as developing countries[7]. However in our system, where basic health care facilities are not adequate, Eclampsia remains to be a major cause of maternal mortality and poor perinatal outcome[8].

Eclampsia is also a common cause of maternal deaths and great morbidity in our hospital which is tertiary centre of Obstetrics and Gynecology. Hence through this study, we aim to elaborate various facts related to this preventable complication so that significance of control of hypertensive disorders of pregnancy and deficiency of facilities to manage these can be highlighted.

SUBJECTS AND METHODS

This study was conducted at Lady Willingdon Hospital, King Edward Medical University, Lahore from January 2009 to Dec 2009. In this descriptive case series a total of One hundred patients of Eclampsia were included through non probability convenience sampling. The inclusion criteria was defined clearly and all those diagnosed cases of Eclampsia (based on clinical signs & symptoms) after 24 completed weeks of gestation and who were delivered through caesarean section were included in the study, whereas all those patients having Multiple pregnancies, with anomalous babies or those Eclamptic patients having any complication of anesthesia were excluded from the study. Confounding variables which were medical disorders like diabetes mellitus, hypothyroidism, asthma, connective tissue disorders, chronic hypertension and infections were controlled by matching. Maternal outcome variables were assessed by conscious level of mother, pulmonary edema, renal output, jaundice, DIC and maternal mortality. Fetal outcome variables were preterm delivery, birth weight, APGAR score, asphyxia neonatorum, intrauterine death or early neonatal death. Relevant investigations which were CBC, platelet count, urine albumin, LFT's, RFT's, PT, APTT and serum fibrinogen were carried out. Patients were followed up from admission up to discharge. Data analysis was performed using soft ware SPSS 10.0. Maternal variables under study (age, parity, booked/ unbooked status, duration of pregnancy, high blood pressure, proteinuria, headache, blurring of vision, epigastric pain, jaundice, body swellings, maternal mortality, pulmonary edema, CVA, DIC, renal failure, deranged LFT's & duration of hospital stay) and foetal outcome variables(intrauterine death, premature delivery, birth weight, APGAR score, resuscitation required, admission in NNU, asphyxia neonatorum and early neonatal death) were presented as percentages and frequencies. Mean and standard deviation of quantitative data which were age, duration of pregnancy, duration of hospital stay and fetal birth weights were calculated. Investigations were described as negative or positive.

RESULTS

Total 100 patients with Eclampsia were enrolled in the study. Analysis of their booking status showed that only 3 (3.0%) of the cases were booked and remaining 97(97.0%) had no preparation for upcoming event indicating lack of antenatal care indirectly. The mean age of patients was 25.17$\pm$4.9 years ranging from 18 to 40 years. The maximum number of patients (58%) was between 20-25 years, while (26%) were having age of 26-30 years. Age of 7% patients was less than 20 years and only 9% were between 31-40 years.

In current study most of the cases (63%) were primigravidae, 28% had parity in the range of 2-4, while 6% were P5 – P7 and only 3% had a parity of more than 7. It was observed that 39% of the patients presented at gestational age of 31-36 weeks, while 39% had gestational age of 37 weeks or above. Those who were at 24-30 weeks of gestation constituted 22% mean gestational age was 33.7±4.28 weeks. Main presenting complains in the study group were body swellings & loss of conscious level in 92(92%) patients and 88% had blood pressure along with convulsions. Seizures were preceded by headache, blurring of vision in all 100 patients, 98% of patients complained of vomiting, with epigastric pain in 3%, 4% had jaundice and in 98(98%) of the eclamptic patients were found to have proteinuria.

Ten of these eclamptic mothers (10%) died, of these 7 because of pulmonary edema, 2 due to DIC and another 1 had renal failure. Thirty eclamptic mothers (30%) developed complications like, pulmonary edema (11%), CVA in (2%), renal failure (20%), DIC (4%), and 11% had deranged LFT's including one case of HELLP syndrome. Average hospital stay was 8.4 days±2.60, in which 44(44%) stayed for 5-7 days, 36% for 8-10 days and 18% for

more than 10 days in hospital.

Table 1: Fetomaternal characteristics and outcome

	Frequency
Maternal age (years)	
<20	7
20-25	58
26-30	26
31-40	9
Mean age	25.17±4.9 years
Mode of presentation	
Booked cases	3
Unbooked cases	97
Parity	
Primi grauidae	63
P2- P4	28
P5- P7	6
Gestational age (weeks)	
24-30	22
31-36	39
37-40	39
Mean gestational age	33.7±4.28
Head ach	100
Blurring of Vision	100
Vomiting	98
Body Swellings	94
Epigastria Pain	3
Clinical signs	
High Blood Pressure	88
Proteinuria	98
Body Edema	98
Unconsciousness	92
Jaundice	4
Epigastric Tenderness	3
Maternal outcome	
Maternal Mortality	10
Maternal Complications	30
No maternal complication	60
Maternal complications	
Acute respiratory distress syndrome/Pulmonary edema	11
Cardiovascular accident	2
Disseminated intravascular coagulation	4
Renal failure	2
Deranged liver function tests	10
HELLP Syndrome	1
Duration of hospital stay (days)	
5-7	44
8-10	36
>10	18
Mean hospital stay	8.42±2.60days
Fetal outcome (alive born)	
Preterm	44
Term	36
Fetal outcome (dead born)	
Preterm	17
Term	3
APGAR (at birth)	
<4	13
4-7	63
>7	4
Weight of babies (Kg)	
< 1.0	3
1.0 - 1.5	25
1.6 - 2.4	43
2.5	24
Fetal complications	
Resuscitation	75
Admission In NNU	63
IUGR	10
Asphyxia Neonatorm	60
Early neonatal death	22

As far as fetal outcome is concerned alive born babies were 80%, of these 39% were term and 61% preterm while 20% were stillbirths out of which 17(17%) were preterm and 3(3%) were full term babies.

APGAR score in 60% babies was less than 4 at birth and 13% had less than 4 score at 5 minutes after delivery. Twenty babies (20%) had a score between 4 to 7 at birth and 63% babies had APGAR between 4-7 at 5 minutes after birth. Only 4% of the babies were those who had APGAR score more than 7 at 5 minute after birth.

The observations regarding birth weights of newborn babies were recorded for 95 subjects as 5 mothers died before their delivery. Three babies were of extreme low birth weight (1kg) while 25.05% were having very low birth weight (1.0-1.5). 43% of babies had low birth weight (1.6-2.4kg) and only 25% had a birth weight of> 2.4kg (mean:1.95$\pm$0.63).

The observed fetal morbidity was also high, as 15% babies were IUGR, 75(75%) babies required resuscitation at birth and 63% neonates were shifted to neonatal intensive care unit, 60% developed respiratory problem mainly because of pre-maturity and asphyxia and 22% died within 7 days of their lives in NNU.

DISCUSSION

Hypertension is a leading problem that may complicate and result in additional disorders during pregnancy. One such complication is Eclampsia which causes devastating results, though it is preventable. This disorder is one of the leading causes of maternal mortality worldwide which varies from 1.8–27.5%. Almost 1/3rd of the patients suffer from complications[9,10]. In current study 10% eclamptic mothers expired and 30% developed complications like pulmonary edema in 11%, DIC in 4%, renal failure 2%, CVA in 2% and 11% of the patients had deranged LFT's including one case of HELLP syndrome thus establishing the morbid danger of Eclampsia which must be prevented by timely referral and early management.

Often time, Eclampsia is presented after pre-eclampsia, it is therefore recommended to address at pre-eclamptic stage to prevent any worse results[1]. 97% of the patients in this study were un-booked, only 3% received some kind of antenatal care which indicates a high risk of Eclampsia among those not receiving any antenatal care. It is therefore important to ensure the effectiveness of antenatal care system.

Literature shows that some protection is offered by previous pregnancies from Eclampsia and pre-Eclampsia and often it is confined to a disease of primigravidity[2]. Data collected in current study shows that 63% of the women with Eclampsia were primigravidae depicting the fact that primigravidae patients are particularly at risk and for that reason

they must be screened by more frequent antenatal visits. Furthermore, most of the patients in our study i.e., 84% were between 20–30 years although incidence of Eclampsia is reported 3 fold higher in women under 19 years of age[11]. This contradiction in results may somehow be surmounted by a larger sample size; however it was not possible to collect more than 100 patients of Eclampsia who were delivered through C-sections in one year of study.

Current study showed that 68% of the patients presented during third trimester, that stresses requirement of more vigilant monitoring of high risk patients during third trimester because the incidence becomes greater towards the end of pregnancy. This may further reduce the mortality and morbidity by early interventions. The results of our study were also validated by another research that showed the risk of Eclampsia is increased towards term[11].

Pre-Eclampsia is a major setting in which Eclampsia occurs and constitutes 85-90% of the patients with this course of progression, the rest of 10-15% though may present Eclampsia without any pre-eclamptic signs[12]. In our study, 88% of the patients who presented with Eclampsia had high blood pressure and 96% were having proteinuria. Prodromal symptoms which occurred in most of the cases included headache, visual disturbance, vomiting and epigastric pain. Patients classically present with proteinuric hypertension and altered conscious level after convulsions[13]. All 100 patients in this study had headache & blurring of vision and 98% had vomiting before the onset of fits. 94% presented with body swellings and 92% were unconscious.

Significant association of Eclampsia is reported with high perinatal mortality and morbidity. Perinatal mortality is published around 432.6/1000 with prematurity where IUGR remains the main culprit and is considered to be responsible for most of the complications[14,15]. Perinatal mortality was 42% in current study, which was contributed by 20% of stillbirths and 22% of early neonatal deaths. 61% of the total babies were preterm, 76% required resuscitation at birth, 63% of newborns were admitted to neonatal care unit and 60% of all developed asphyxia neonatorum. Only 25% of the babies were having normal birth weight and 75% were of low birth weight, either because of prematurity or due to intrauterine growth restriction. At least 15% of the babies were estimated to have IUGR as exact incidence of IUGR was difficult to calculate. The reason behind is that most of the patients were unconscious or not sure about their last menstrual period plus they were not having any ultrasound records, so it was really difficult to say about how many of them were IUGR with certainty. As this is an established fact that early deliveries reduce maternal mortality and morbidity however expose the babies to the risks of prematurity.

CONCLUSION

Maternal mortality is high in eclamptic mothers and accompanies increased risk of complications. Perinatal mortality is a commonly observed (42%) phenomenon in eclamptic patients and risk factors like poor antenatal care and proteinuric hypertension are frequent. Pulmonary edema and prematurity seem to be the main culprits for high maternal and foetal mortality & morbidity respectively. Thus, it can be stated that our health care system contains inadequate facilities to provide satisfactory antenatal service to our pregnant mothers.

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