Fetomaternal Outcome of Eclampsia in Shaheed Suhrawardy Medical College and Hospital, Dhaka, Bangladesh

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ABSTRACT

Background: Eclampsia is an important cause of maternal and perinatal morbidity and mortality. The incidence varies widely from country to country. This study is carried to detect the prevalence and fetomaternal outcome of Eclamptic patients admitted in Obstetrics and gynaecology department of ShSMCH.

Methods: This Cross sectional prospective study done from Dec'2014 to May'2015. 100 cases were taken for study. The data was analyzed by computer software SPSS.

Results: Among 3482 Obstetric admission, the Eclampsia patient was 382. The incidence of Eclampsia is 7.03%. 67% patient were primi, 82% between 15 to 25 years of age, 75% were illiterate or had only primary education. 52% came from low socio economic group and 56% Patients had convulsion after 37 weeks of pregnancy. At the time of admission 63% were unconscious. 60 patients were delivered by LSCS. 6% patients expired and 13% patients had developed pulmonary oedema, HELLP syndrome, DIC, renal failure and obstetric shock. Among the perinatal death, 28% were stillbirth and 9% were early neonatal death. Maternal age <20 years, primigravida without antenatal care and number of convulsions >10 were associated with higher stillbirth rate.

Conclusion: Eclampsia is one of the major causes of maternal death in Bangladesh. Poor social status, lack of education and lack of maternal care are the main factors. It can be prevented by regular antenatal care, early diagnosis and management of pre-Eclampsia and hypertensive disease. Health education and creating general public awareness can decrease the incidence of Eclampsia and its complications.

Key words: Eclampsia, Still birth, Convulsion, HELLP syndrome, DIC.

1. INTRODUCTION

When pre-eclampsia is complicated by convulsion is called eclampsia. remains an important cause of maternal and perinatal mortality and morbidity. The incidence varies widely in different countries and even in the different zones of the same country. The incidence of eclampsia in developed countries approximately 1 in 2000 deliveries [1]. In developing countries, it is between 1 in 100 to 1 in 1700 [2,3,4]. More than 5 lac women die of pregnancy related causes in each year and 99% deaths occur in the developing countries [5,6]. Among them 50,000 maternal deaths occur due to eclampsia every year [7]. In Bangladesh, about 4500 women die due to eclampsia which contributes 16% of the maternal mortality in one year [8].

At present, the perinatal mortality rate in Bangladesh is 65 per 1,000 live birth [9]. Eclampsia is associated with increased rates of perinatal mortality and morbidity. Two different studies in Bangladesh perinatal mortality rate due to Eclampsia was 28% and 32% [10,11]. The cause behind the high incidence of maternal and perinatal mortality and morbidity are lack of antenatal care, low socio-economic status, illiteracy, ignorant of disease, sub-standard care,

shyness and religious belief etc. Besides poor communication facilities and social superstation are also important factors.

In Bangladesh, around 80% of the people live in rural area where services do not exist to manage the patients of eclampsia. Many of those patients were referred from other hospitals from a distance. Maternal complications like pulmonary edema, intracerebral hemorrhage, disseminated intravascular coagulopathy (DIC), acute rental failures etc are serious reasons causing maternal mortality and morbidity [12-17]. The most common cause of foetal deaths are pre-maturity and birth asphyxia.18 Our research showed the maternal and foetal outcome of Eclampsia in ShSMCH including the influencing factors. This research will give some guideline to yield the plans in improving maternal and perinatal outcome and will create some interest for further research.

2. MATERIALS AND METHODS

This Cross-sectional prospective study done in Eclampsia ward of Obstetrics and Gynaecology department of ShSMCH. During study period (Dec'2014-May'2015) total 5,428 patients were admitted in Obstetrics & Gynaecology Department of ShSMCH. Among them 382 eclamptic patients were admitted.

Out of them 100 cases were taken for study by considering the prevalence of Eclampsia as 7% of ShSMCH. Sample size was calculated from the formula, n=Z2pq/d2. Simple Random Sampling is used to take the cases. Detailed history, thorough general & systemic examination, finding of performed investigations were recorded carefully, treatment modalities and their outcome was noted. Semi structured questionnaire will be used for data collection in the Eclamptic ward by face-to-face interview. All the patients and their baby were observed with the help of a standard data record form containing relevant information about the study topic.

Patient with diagnosis of Eclampsia were included in this study. All cases of convulsion during pregnancy other than clinically confirmed Eclampsia were excluded.

The data was analyzed by computer software SPSS. P value <0.05 was taken as significant.

3. RESULTS

This cross-sectional prospective study was done on eclamptic patient in Shaheed Suhrawardy Medical college Hospital from 1st December 2014 to 30th may 2015.

Among 3482 Obstetric admissions, the patient of eclampsia was 382. The incidence of Eclampsia was 7.03%. Among them 67% patient were primi and 33% patient were multigravida. 82% patients were in between 15 to 25 years of age, about 56% patients came at >37 weeks of pregnancy, 32% patients came between 33-37 weeks of pregnancy and 10% patients came between 28-32weeks of pregnancy.

75% were illiterate or had only primary education. 52% came from low socio-economic group and 46% patients had <4 times convulsion at home, 44% had 4-10 convulsion and 10% had >10 convulsions before admission in Hospital. At the time of admission 63% were unconscious.42% patients had diastolic blood pressure 90-109 mm of Hg and58% patients diastolic blood pressure>110 mm of Hg. 27% patients had 4+ urinary albumin, 26% patients had 3+ albumin, 24% had 2+ albumin, 11% had 1+ and 12% had no urinary albumin.96% patients were treated by MgSo4 and 4% patients were treated by Diazepum. 60 patients were delivered by LSCS. 6% patients expired and 13% patients had developed pulmonary oedema, HELLP syndrome, DIC, renal failure and obstetric shock. Among the perinatal death, 28% were stillbirth and 9% were early neonatal death.33% newborn need NICU. Maternal age <20 years, primigravida without antenatal care and number of convulsions >10 was associated with higher stillbirth rate.26% baby born with weight >2.5 kg, 24% had weight 1.6-2.4 kg, 13% baby had weight 1-1.5 kg and 1% baby had weight 1 kg.

Table 1: Distribution of patient according to type of eclampsia (n=100)

Type	Number	Percentage
Antepartum Eclampsia	73	73
Intrapartum Eclampsia	15	15
Postpartum Eclampsia	12	12

Table 1 showed that 73 patients (73%) came with antepartum Eclampsia, 15 patients (15%) had intrapartum Eclampsia and 12 patients (12%) had postpartum Eclampsia on admission.

Table 2: Age distribution of study subjects. (n=100)

Age group (Years)	Number of patients	Percentage
15-20	54	54
21-25	28	28
26-30	12	12
>30	6	06

Table 2 showed that 54% of the patients were between the age group 15-20 years. 28% patients were between 21-25 years, Maximum patients (82%) were below the age of 25 years only 6% were above 30 years.

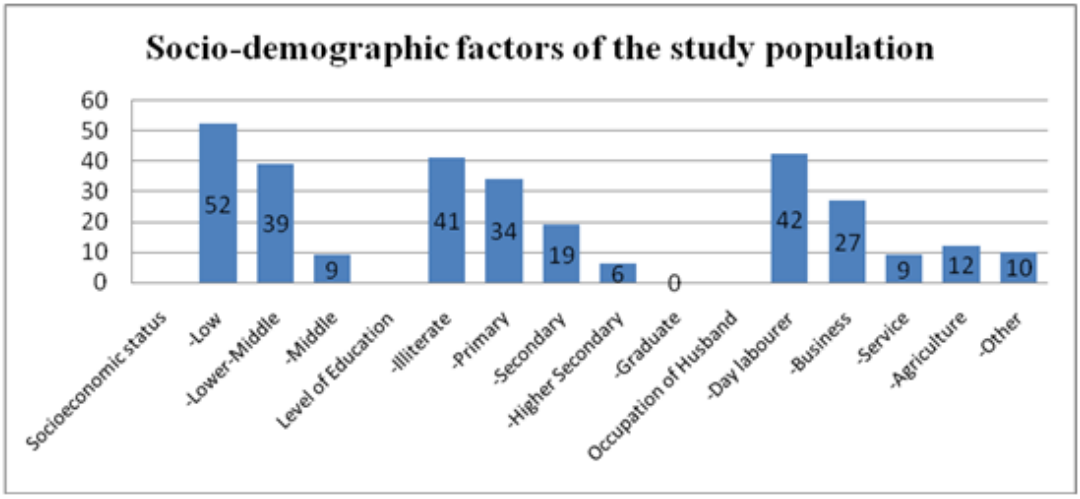

Figure 1: Distribution of Socio-demographic factors of the study population (n=100)

Figure 1 is showing most of the patient (52%) were from low socio-economic status, and their husband were day labor (42%) Maximum number of patient 41% was illiterate and 34% had primary education. None of the patients were graduate.

Table 3: Distribution of study subjects according to parity .(n=100)

Parity	Number of patients	Percentage
0	67	67
1	16	16
2	7	7
3	1	1
>3	9	9

Table 3 showed that 67% of the patients were primigravida and only 9% of the patients had more than three children.

Table 4: Distribution of study subjects according to gestational age (n=100)

Gestational Age (Weeks)	Number of patients	percentage
<28	02	2
28-32	10	10
33-37	32	32
>37	56	56

Table 4 showed 56% Eclampsia patient had gestational age more than 37 weeks.32% patients came between 33-37 weeks of pregnancy and 10% patients came between 28-32weeks of pregnancy. Only 2% was below 28 Weeks of pregnancy.

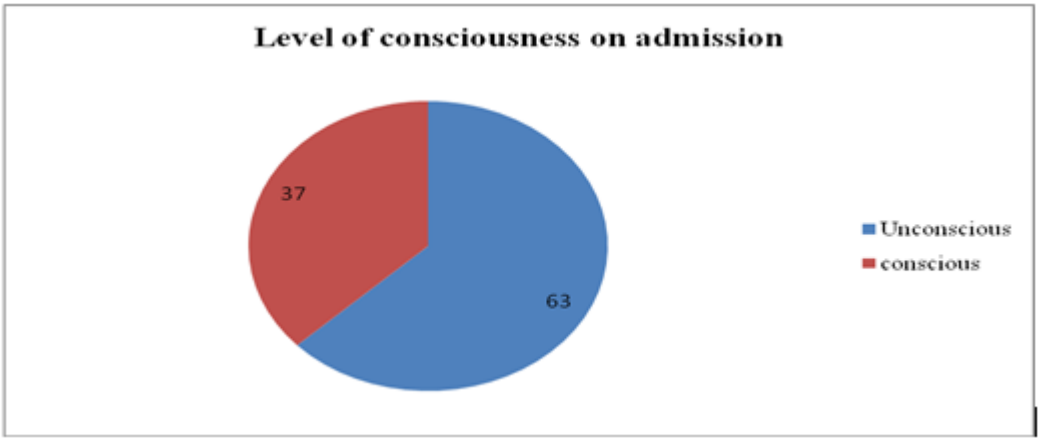

Figure-2: Distribution of study population according to level of consciousness on admission

Figure 2 showed that 63% Patient were unconscious and 37% were conscious at the time of admission.

Table 5: Distribution of study subjects according to type of anti-convulsant used (n=100)

Anti-convulsant	Number of patients	P value (Z-test)
MgSO4	96(96%)	<0.001***
Diazepam	04(4%)	

Table 5 showed that MgSO4 was used as anticonvulsant in 96% patients. In the remaining 4% due to some contraindications, diazepam was used. The test is highly significant as P value was <.001.

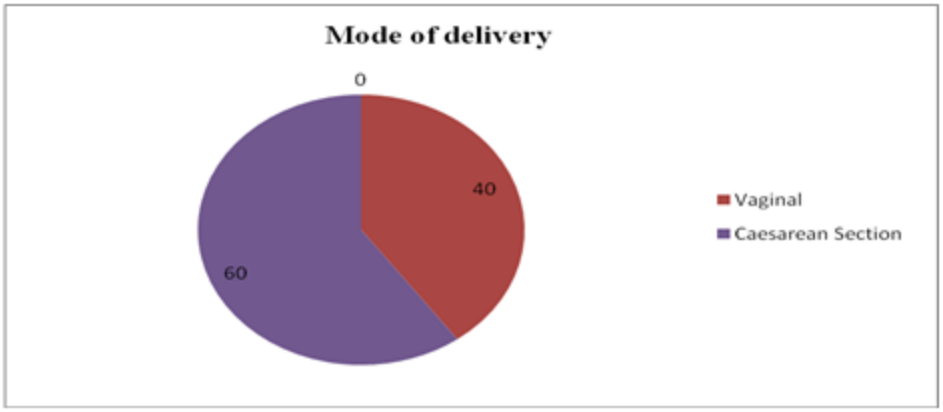

Figure 3: Distribution of study population according to mode of delivery (n=100)

Figure 3 showed that vaginal delivery needed in 40% cases and 60% cases required LUCS.

Table 6: Distribution of study subjects according to complications. (n=100)

Complications	Number of Patient	Percentage
None	81	81
pulmonary edema	05	5
HELLP Syndrome	03	3
Coagulopathy (DIC)	0	0
Renal failure	03	3
Obstetric Shock	02	2
Death	06	6

Table 6 showed that 13% developed complications and among them pulmonary oedema was the highest (5%), HELLP syndrome (3%), renal failure (3%), Obstetric Shock (2%).

Table 7: Distribution of study subjects according to maternal outcome (n=100)

Parameter	Patient No	Percentage
Final outcome		
Recovered	94	94
Expired	06	06

Grave complications		
Pulmonary edema	05	05
DIC	00	00
Renal failure	03	03
Obstetric shock	02	02
HELP syndrome	03	03

Table 7 showed that 06 (6%) patients were expired and 94 (94%) were discharged healthy.

Table 8: Distributions of study subjects according to fetal outcome.

Parameters	Number of patients	Percentage
Pregnancy outcome (n=100)		
Live birth	72	72
Stillborn (SB)	28	28
Neonatal outcome (n=72)		
Referral to NICU	33	45.83%
-Early neonatal death	09	27.27%
-Recovered	24	72.72%
Final outcome (n=100)		
-Live birth	63	63%
-perinatal death (SB+END)	37	37%

Table 8 showed that among 100 patients 28(28%) were stillbirth and 72% live birth. Among 72 liveborn baby, 33 newborn needed NICU. From NICU 24(72.72%) were discharge healthy and 09 (27.27%) early neonatal death.

Table 9: Distribution of study subjects according to weight of baby (n=64)

Weight (kg)	Number of patients	Percentage
<1	01	1.50
1.0-1.5	13	20.31
1.6-2.4	24	37.50
≥2.5	26	40.60

Table 9 showed that 40.60% neonates had birth weight 2.5kg or more and 60% neonates had birth weight less than 2.5kg , among them about 14% had extreme prematurity (<1.5 kg)

Table 10: Distribution of study subjects in Relations to Maternal factors with perinatal death.

Parameter	Total patient (n=100)	Number of perinatal death (n=45)	Percentage
Age (year)			
15-20	54	27	54%
21-25	28	09	28%
26-30	12	04	12%
>30	06	05	06%
Parity			
0	67	29	67%
1	16	08	16%
2	07	04	07%
3	01	00	01%
>3	09	04	04%
Antenatal care			
-None	56	25	56%
-Irregular	26	15	26%
-Regular	18	05	18%
Duration of Gestation (Weeks)			
<28	02	04	02%
28-32	10	07	10%
33-37	32	15	32%
>37	56	19	56%
No. of convulsion before Admission			
<4	46	18	46%
4-10	44	19	44%
>10	10	08	10%

Table 10 showed that 54% patients were below the age of 20 years and only 06% were above the age of 30 years, 67% patients were primi gravida. 56% patients had no antenatal care. Most of the patients had their gestational age more than 32 weeks. Maximum had less than 10 convulsions before their admission.

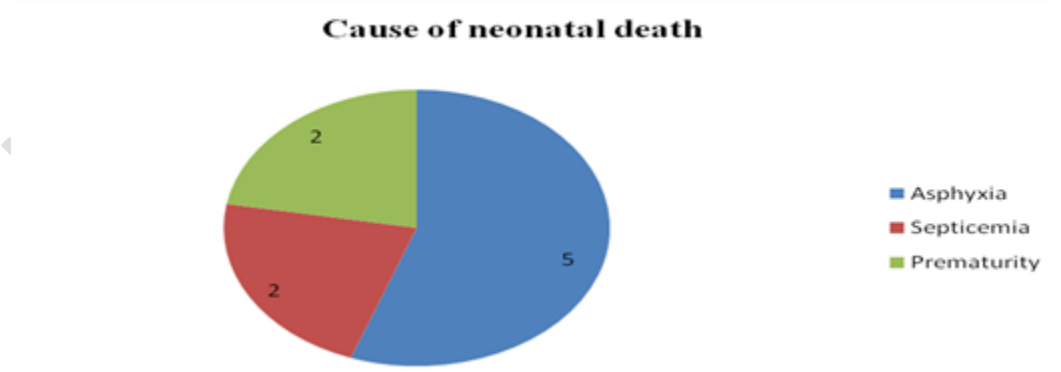

Figure 4: Distribution of study population according to cause of neonatal death (n=9)

Figure 4 showed that 55.60% neonates died due to birth asphyxia, 22.20% due to septicemia and 22.20% due to prematurity

4. DISCUSSION

Regarding hospital incidence, age group, socio-economic status, and our study showed similar result with the studies of Sabera and Taner [19,20]. Bugalho's in his study showed that maternal age below 18 years is one of the risk factors of eclampsia [21]. In this study, most of the eclamptic patients (54%) were below 20 years of age. Level of education, occupation and Socio-economic factors have a significant influence on the quality of patient's nutrition and antenatal care. In this study 75% patients were either illiterate or got primary education only. Mostly they were day labor and belonged to poor socio- economic status. These are comparable with other's studies [19, 21].

In this study 67% of the patients were primigravida. Various studies also showed lower percentage of primigravida, i.e 61.03% and 56% [18, 23] in this study 73% patient developed convulsion before delivery. In Sibai's study 71% and Taner's study 89.41% patient had convulsion before delivery [20,22]. In present study 63% patients were unconscious at the time of admission, 53% patients had 3+ or more proteinuria, patients with poor outcome having convulsion delivery interval more than 12 hours (59%) and diastolic blood pressure equal or more than 110 mm of Hg (58%). The incidence of caesarean in ShSMCH in 6 months was 60% of total delivery; among them 09.72% were due to Eclampsia. In this study 60% had LUCS and 40% vaginal delivery. The section rate in my study group is very close to that in other reports [13, 16].

In this study, the stillbirth was 28% and death within one week was 9%, so perinatal death was 37%; rest 63% was discharged healthy from the hospital. In two different studies in Bangladesh, perinatal death was found to be 32.10% and 28% [12,18]. In a review of four different studies presented at the first international conference of Obstetrics and Gynaecology held in Bangladesh, perinatal mortality in Eclampsia patient was shown from 31%-41% [24]. In this study, perinatal death is 37%. primigravida, age less than 20 years, poor or no antenatal cheek up, had more perinatal death. Ikechebelu J.I, 2002 May, in their study found that perinatal mortality rate is significantly higher among those who had inadequate antenatal care than those who had adequate antenatal cheek up [25].
In Shahabuddin's study (Rangpur Medical College Hospital) stillbitrth was 24.50% and neonatal death was 8.40% [11].They found gestational age at delivery and number of fits before delivery significantly influenced perinatal mortality rate. In this study birth weight in 40.60% babies are found equal or more than 2.5kg and 59.40% were less than 2.5 kg. Irin's study at DMCH showed birth weight of 31% of babies were equal or more than 2.5kg and 70% were low birth weight (less than 2.5 kg) [18]. Shamsuddin's study in Bangladesh showed that 49.05% babies who died had weight equal or more than 2.5kg [10]. All studies showed perinatal deaths were higher in low-birth-weight babies [10,18]. In the present study, among the babies, who were alive at birth (n=72), 33 were referred to neonatal ICU. Among the neonatal complications 24.24% babies had respiratory distress, 21.21% had jaundice, and 3.03% had septicaemia. Regarding the cause of neonatal death, 55.60% was due to birth asphyxia, 22.20% was septicemia, and 22.20% was due to prematurity. In Eclampsia, feotus suffers from hypoxia and there may be intrauterine death of the foetus. Irin's Study showed that the common causes of foetal deaths are birth asphyxia and prematurity [18]. In ShSMCH as we did not have prompt bio-chemical, bacteriological and cardiographic facilities, the exact cause of asphyxia, infections and septicaemia could not be identified and the diagnosis of early neonatal death was clinical. In shahabuddin's study, carried in Bangladesh, asphyxia was a major cause of neonatal loss with or without prematurity [11].

In our study, maternal mortality was 6% and 94% patient were discharged healthy. The present study showed that maternal condition on admission and associated maternal complications had the major determinant outcome. Among those patients who developed

complication, 82% had no or infrequent antenatal visit, 72% came from more than 17Km distant and 66% arrived hospital <12 hours after the first convulsion. In different studies maternal mortality varies, 9.46%, 4%, 9.3% [20,23,25]. All studies showed that maternal mortality was increased in those patients who came from distant rural area, took long time between first convulsion and hospital arrival, had no or very infrequent antenatal checkup.

5. CONCLUSION

Eclampsia is still a major cause of maternal mortality in Bangladesh. It is recorded in most part of the world having incidence of Eclampsia between 0.15% and 2.2% of the pregnant women. High mortality is due to poor socio-economic condition, lack of education and inadequate care. Though pre-eclampsia is not completely preventable, Eclampsia is mostly preventable by early diagnosis and management of pre-eclampsia and hypertensive disease. Health education and creating general public awareness can decrease the incidence of Eclampsia and its complications. Stillbirth is one of the tragic perinatal outcomes. Use of MgSO4, early referral of patients, good transportation, better obstetric management and improved neonatal management facilities will improve the maternal and foetal outcome of Eclampsia.

COMPETING INTERESTS DISCLAIMER:

Authors have declared that no competing interests exist. The products used for this research are commonly and predominantly use products in our area of research and country. There is absolutely no conflict of interest between the authors and producers of the products because we do not intend to use these products as an avenue for any litigation but for the advancement of knowledge. Also, the research was not funded by the producing company rather it was funded by personal efforts of the authors.

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