

## Original Article



# Fetomaternal Outcome of Eclampsia

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### Abstract

**Background:** Eclampsia is a leading cause of maternal mortality and morbidity and adverse neonatal outcome. Healthcare system must be enhance to improve fetomaternal outcome. **Objective:** To find out the proportion and fetomaternal outcome of eclampsia. **Materials and Methods:** A cross sectional descriptive study was conducted to assess the fetomaternal outcome of eclampsia. The study was carried out at the Eclampsia unit, Dhaka Medical College Hospital, Dhaka over a period of six months from 1<sup>st</sup> July 2008 to 31<sup>st</sup> December 2008. A total of 48 patients with diagnosis of antepartum and intrapartum eclampsia were consecutively taken in the study. The test statistics used to analyse the data were descriptive statistics. **Results:** About 7% of patients developed acute renal failure, 16.7% CVA, 14.6% HELLP syndrome and 39.6% pulmonary oedema. The mean hospital stay was  $9.5 \pm 3.3$  days. Majority (93.8%) of the patients recovered while 6.3% died. Twenty-seven (54.2%) neonates had to be referred to neonatal intensive care unit for better management. Of them 24 recovered following resuscitation. The mean weight of baby was  $2.2 \pm 0.3$  kg. **Conclusion:** Eclampsia is still a major cause of maternal mortality and morbidity in Bangladesh. Monitoring of high-risk patients may reduce the complication rate.

**Key words:** Eclampsia, Fetomaternal outcome.

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### Introduction

Eclampsia is defined as seizure activity or coma unrelated to other cerebral condition in an obstetrical patients with preeclampsia.<sup>1</sup> Eclampsia 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, accounting for about 50,000 death worldwide.<sup>2</sup> In developing countries the prevalence of eclampsia varies widely, from 1 in 100 to 1 in 1700.<sup>3-6</sup> The incidence of eclampsia is high in Bangladesh-7.9% according to results of house to house survey.<sup>7</sup> For the period of 1998 to 2000 the rate of maternal death from eclampsia was 8.6%.<sup>8</sup> In Bangladesh, only 2.3% women end their pregnancy under medical supervision (whether it be abortion or delivery);<sup>9-10</sup> the rest have no obstetric care. As a result most preeclampsia cases remains unrecognized until severe complication, such as eclampsia. Because Dhaka Medical College and Hospital has a special unit and is the largest tertiary referral Govt. hospital in the country, the incidence of

eclampsia is higher in this hospital setting at 9%.<sup>8</sup> Eclampsia is associated with increased perinatal mortality and morbidity. The different studies in Bangladesh showed perinatal death due to eclampsia was 28%,<sup>11</sup> 32.8%,<sup>12</sup> and 29% respectively.<sup>13</sup> It is a common problem in developing countries because illiteracy, lack of health awareness, poverty superstitious belief prevents women from seeking medical advice during pregnancy. Besides poor communication facilities is also an important factor. In Bangladesh about 80% population live in rural areas, where facilities do not exist to deal with patients with eclampsia, many of these patients come to referral hospital from distant place. Among the referral hospitals, DMCH is dealing with highest number of eclampsia patients.

Eclampsia is the third major cause of maternal death in Bangladesh (16%)<sup>14</sup> preceded by HGE and sepsis. In developing country death from HGE and infection have been almost disappeared and eclampsia become the prime killer, indicating that death from eclampsia is particularly difficult to

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prevent.<sup>15</sup> Maternal complication like pulmonary oedema, intracranial haemorrhage, DIC, aspiration pneumonitis, acute renal failure etc. are serious factor causing maternal mortality and morbidity<sup>16-18</sup>. The most common cause of fetal death is prematurity and birth asphyxia.<sup>19</sup> This paper will present maternal and fetal outcome of eclampsia including predisposing factor. This study will hopefully give us some guide to take the strategies in improving maternal and perinatal outcome.

### Material and Methods

The study was a cross sectional descriptive study conducted in Eclampsia unit of Dhaka Medical College and Hospital over a period of 6 months from 1st July 2008 to 31<sup>st</sup> December 2008. Total 48 patients were included in the study. Inclusion criteria were patients with diagnosis of antepartum eclampsia and intrapartumeclampsia. Exclusion criteria were all cases other than clinically confirmed eclampsia, postpartum eclampsia and preeclampsia. A consecutive sampling was done to include required number of patients. The demographic, anthropometric, obstetric and clinical variable, management, complication, fetal outcome, cause of referral and perinatal outcome were included in the study.

Prior permission was taken from Ethical review committee, DMCH to conduct the study. Keeping compliance with Helsinki Declaration for medical research involving Human subjects 1964, the study subjects were informed verbally about the study design, the purpose of the study and their right from with drawing themselves from the project at any time, for any reason, what so ever.

To manage convulsion anticonvulsants were used. Inj. MgSO4 where patelar reflexes were present, respiratory rate was > 16 br/min and urine output > 30ml/hour. If these criteria were not met, then other anticonvulsant like diazepam was used.

A structured data collection form was developed containing all the variables of interest which was finalized following pretesting. Data were collected by interview, observation and clinical examination. Data were processed and analyzed using SPSS (Statistical Package for Social Sciences). The test statistics used to analyze the data were descriptive statistics. The summarized data were presented in the form of tables and charts.

### Result

The age of 39.6% patient was below 20 year of age, 43.8% between 20-25 years and the remaining 16.7% of patient was 25 year or above. The mean age of patient was 20.6 =4.4 years and the lowest & highest ages were 15 and 32 years respectively (Table I). Over three quarter 77.1% of patient was house wife, 18.8% garments worker and rest 4.1% day labourer by occupation (Figure 1). Table II demonstrate that nearly 20% of patients was urban resident, 31.3% suburban, 41.6% rural and 8.3% slum. Figure 2 shows the socioeconomic status of the patient. Two-third 67%)of the patients was poor and rest 33% belonged to lower middle class. Table III shows twenty seven 56.3% of 48 patients were illiterate. About 30% was primary level and 14.6% secondary level educated. Table IV showed mode of delivery. About

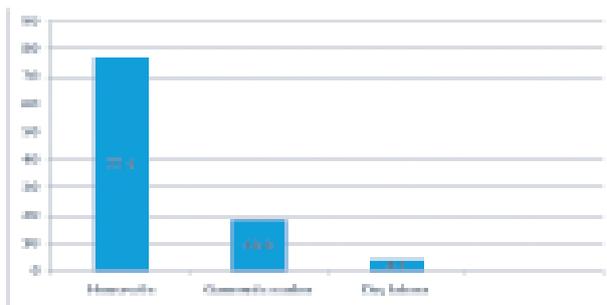
38% of patients underwent vaginal and 62.5% caesarean delivery. Table V showed about 57% of mothers were remained unconscious due to cerebral irritation, 39.6% had high temperature, and 70.8% had raised blood pressure and 27.1% persistent proteinuria. Table VI demonstrate that 6.3% developed acute renal failure, 16.7% CVA, 14.6% HELLP syndrome, 39.6% pulmonary oedema. Mean hospital stay was 9.5 ± 3.3 days. Majority 93.8% of the patients recovered and 6.3% died due to pulmonary oedema, cerebrovascular accident. Table VII shows fetal outcome which demonstrate three-quarter of baby was born alive, 25% stillborn due to intrauterine asphyxia. The mean weight of baby was 2.2 ± 0.3 kg. Twenty six 54.2% neonate were referred to neonatal intensive care unit. Table VIII shows cause of referral. About 70.4% of baby referred for prematurity, followed by 63% for feeding problem, 44.4% for ventilator support and 7.4% for jaundice. Table IX shows perinatal morbidity which demonstrate that 41.7% of babies had jaundice, 2.1% septicaemia, 6.3% convulsion, 33.3% respiratory distress. The man duration of stay in NICU was 4.7± 1.6 days. About two-third 65% of babies recovered and 35% died. Cause of death was asphyxia and prematurity.

**Table I:** shows the age distribution of patient by age (n=48)

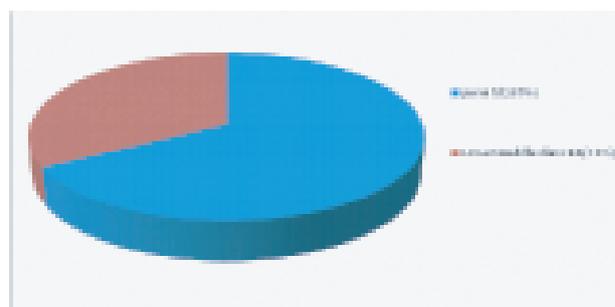
Age (years)	Frequency	Percentage
<20	19	39.6
20-25	21	43.8
25	08	16.7

\***Mean age**= (20.6±4.4) years; **range**= (15-32) years

**Fig.1:** Distribution of patients by occupation (n=48)



**Fig.2:** Distribution of patients by socioeconomic status (n=48)



**Table III.** Distribution of patients by level of education (n=48)

Level of Education	Frequency	Percentage
Illiterate	27	56.3
Primary	14	29.2
Secondary	07	14.6

**Table IV:** Distribution of patients by mode of delivery (n=48)

Mode of delivery	Frequency	Percentage
Vaginal	18	37.5
Caesarean	30	62.5

**Table V:** Distribution of patients by postpartum morbidity (n=48)

Postpartum morbidi	Frequency	Percentage
Unconscious	27	56.3
High Temperature	19	39.6
Raised BP	34	70.8
Persistent Proteinuria	13	27.1

**Table VI:** Complication developed of the patients (n=48)

Complication	Frequency	Percentage	Mean ±SD
Acute Renal Failure	03	6.3	-
CVA	08	16.7	-
HEELP Syndrome	07	14.6	-
Pulmonary Oedema	19	39.6	-
Hospital Stay	-	-	9.5±3.3
Condition of mother			
Recovered	45	93.8	-
Died	03	6.3	-

**Table VII:** Distribution of patients by foetal outcome (n=48)

Foetal Outcome	Frequency	Percentage	Mean ±SD
Baby born	48		
Alive	36	75.0	-
Still-born	12	25.0	
Weight of Baby			2.2±0.3 kg
Referred to NICU	27	56.3	

**Table VIII:** Distribution of patients by causes of referral (n=27)

Causes of referral	Frequency	Percentage
Prematurity	19	70.4
Jaundice	02	7.4
Feeding Problem	17	63.0
Ventilatory support	12	44.4

**Table IX:** Distribution of patients by Perinatal morbidity

Perinatal morbidity	Frequency	Percentage	Mean ± SD
Jaundice	20	41.7	-
Septicemia	01	2.1	-
Convulsion	03	6.3	-
Respiratory distre	16	33.3	-
Duration stay in Hospital	-	-	4.7± 1.6

### Discussion

The results of the current study demonstrated that the mean age of the patients was 20.6±4.4 years, and the minimum and maximum ages were 15 and 32 years respectively. Onuh<sup>3</sup> reported that the mean age of the study subjects were 27.1±5.6 years. Low<sup>5</sup> also demonstrated the patients' ages to range from 16 to 45 years.

In the present study, over three-quarters 77.1% of patients were housewives, 18% were garments workers and the remaining 4.1% were day labour. Nearly 20% of the patients were urban residents, 31.1% were suburban, 41.6% were rural and 8.3% were slum dwellers. Two-thirds 67% of the patients were poo, and the remaining 33% belonged to the lower-middle class. Twenty-seven 56.3% out of the 48 patients were illiterate. About 30% of the patients were educated up to primary level, and 14.6% were up to secondary level. Dare<sup>10</sup> in a similar study reported that majority of the patients 86.7% were from the low socio-economic class or of low educational status keeping consistency with findings of the present study.

In this study, 34 7.8% patients had less than 5 convulsions before being admitted into the hospital and 29.2% or more than 5 convulsions. Antepartum eclampsia accounted for majority 85% of patients and intrapartum eclampsia for 15%. Lopez<sup>20</sup> conducted a similar study and reported that 97.4% of the patients with antepartum eclampsia. Ikechebelu<sup>21</sup> also noted intrapartum eclampsia in majority 82.4% of the cases. The mean gestational age was 34.6±2.4 weeks, and the minimum and maximum ages were 28 and 40 weeks respectively. Majority 83.3% of the patients were primipara and 16.7% were multiparas. About 5% of patients received infrequent and 10.4% regular antenatal care during pregnancy. Begum<sup>8</sup> reported that the mean gestational age (±SD) was

30.65±2.38 weeks, and the range was 24-34 weeks which is almost consistent with our study. Chen<sup>22</sup> observed that 27% of the patients received regular ANC during pregnancy.

In present study, over 70% of the patients were unconscious and 29.2% were conscious. The mean diastolic blood pressure was 111.0±9.0 mmHg. Over half 52.1% of the patients were clear and 47.9% had crepitations. Approximately 5% of the patients had urine protein "++", 22.9% "+++" and 79.2% "++++". Begum<sup>8</sup> and her associates observed that the mean diastolic pressure was 109.06±11.61 mmHg. Odum<sup>23</sup> reported 57% of the patients to be unconscious and mean diastolic blood pressure 108.0±9.0 mmHg which is almost similar to the present study. Majority 87% of the patients used MsSO<sub>4</sub> and 13% used other anticonvulsant. Twenty seven 56.3% of patients delivered within 10 hours of first convulsion and 43.8% 10 hours of convulsion. About 38% of patients experienced vaginal delivery and 62.5% required caesarean. About 57% of patients were unconscious, 39.6% and high body temperature, 70.8% raised blood pressure and 27.1% persistent proteinuria. Chen<sup>22</sup> observed that 8.1% patients required assisted vaginal deliveries and 12.9% had normal deliveries. Peterson-Brown<sup>23</sup> also reported unconsciousness 49%, high temperature 38%, raised blood pressure 68% almost similar to our study. Coetzee<sup>24</sup> recognized the superiority of Magnesium Sulfate in the control of eclamptic fits and improvement of feto-maternal outcome.

About 7% of patients had acute renal failure, 16.7% CVA, 14.6% HELLP syndrome, and 39.6% pulmonary oedema. The mean hospital stay was 9.5±3.3 days. Majority 93.8% of the mothers recovered and 6.3% died. Katz<sup>25</sup> reported that acute renal failure was 5-9%, pulmonary oedema 3-5%, DIC 3-5%, HELLP syndrome 10-1%, and death 0.5-2%. Fugate<sup>1</sup> reported maternal complications of acute renal failure 14.7%, aspiration pneumonitis 9.6% and cerebro-vascular accident 2.2%.

Three-quarters of babies were born alive and the mean weight was 2.2±0.3 kg. Over half 56.3% of the babies were referred to neonatal intensive care unit. The reason of referral was prematurity 71% followed by feeding problem 63%, ventilator support 44.4% and jaundice 7.4%. The mean duration of stay in intensive care unit was 4.7±1.6 days. Half 50% of neonates recovered following resuscitation. Begum<sup>8</sup> observed that 32 babies 62.7% with birth weight 2.02±45 kg were born alive. Six of them 18.75% weighing between 1.0 and 1.5 kg a birth were referred to the intensive care unit, and 1 3.13% weighing at 1 kg died within 5 minutes after birth.

## Conclusion

Eclampsia is still a major cause of maternal and fetal mortality and morbidity in Bangladesh. Most of the patients were from the low socio-economic class, and/or illiterate. The data thus indicates that socio-economic condition and literacy will raise awareness among the pregnant women to take proper care during antenatal period which will go a long way in preventing the development of eclampsia. Raising awareness will also

motivate the patient's relatives and attendance to take their patients to nearby hospitals for receiving emergency obstetric care as soon as convulsion arises. Besides these steps, monitoring of high-risk patients and making Magnesium Sulfate available in the treatment regimen of eclampsia will reduce the maternal and neonatal mortality, and morbidity.

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