

“Socio-economic, Demographic and Clinical Presentation of Eclampsia: Study in a district hospital, Jamalpur, Bangladesh.

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Abstract: The aim of this study was to assess Socio-economic, Demographic and Clinical Presentation of eclampsia patients in a district hospital, Jamalpur, Bangladesh. A cross-sectional study was conducted in the department of Obstetrics & Gynecology of 250 bedded General Hospital, Jamalpur, Bangladesh during the period from January 2017 to December 2017. A total 40 eclamptic women included in the study. Among the participants 57.5% were aged <20 years, gestational age >37 weeks were in 52.5 % patients, lower socio-economic status were in 62.5% and Primi-gravida were in 77.5% of the participants. Anti-natal checkup were irregular in 65%, urine albumin were mild (++) in 35% and unconsciousness were in 35% of the participants. Mean \pm SD of Systolic blood pressure were 161.9 ± 22.8 with a range of 120-230 and mean \pm SD of diastolic blood pressure were 100.7 ± 11.25 with a range of 79-129. Low birth weight of the neonates were in 47.5%, APGAR score at 1st minute, <2 were in 60% and at 5th minute were in 12.5 % of the study participants. In the study, Forty five (45%) declared no complications but among the complication (55%) group, most of the participants (27.27%) suffered with Haematuria followed by Pulmonary Oedema (18.18%), CVA (18.18%), Renal failure (13.62%), Abruptio Placenta (13.62%) and Obstetric Shock (9.09%) respectively. Among the participants, 60% delivered live birth, among live birth 62.5% were asphyxiated and among asphyxiated neonates 66.66% referred to ICU. This study findings can help policy makers and doctors to address this issue more effectively. We are also recommending further case control study with large sample to know more about eclampsia in Bangladesh.

Key words: Clinical presentation, Eclampsia, Neonate, convulsion

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I. Introduction

Pre-eclampsia when complicated with generalized tonic-clonic convulsions and/ or coma is called ¹eclampsia. It is an acute and life-threatening complication of pregnancy associated with elevated maternal and fetal morbidity and mortality. Approximately 1 in 2000 deliveries is complicated by eclampsia in developed countries, whereas the incidence in developing countries varies from 1 in 100 to 1 in 21700 cases. In the baseline survey of Emergency Obstetric Care (EOC) in Bangladesh, 5% of total obstetric admissions in health facilities were due to pre-eclampsia and eclampsia. Eclampsia contributes to 20% of maternal mortality on a national basis². Eclampsia is the term used to describe the clinical condition of convulsion associated with pregnancy complicated by preeclampsia and may occur before, during or after labour³. Though the incidence has been reduced to 0.2-0.5 percent of all deliveries³, but in Bangladesh the incidence is 5 percent of total pregnancies⁴. In spite of the different preventive approaches to improve obstetric care in Bangladesh, eclampsia still contributes 16 percent of maternal mortality on a natural basis. Pre-eclampsia is a multisystem disorder that is usually associated with hypertension and proteinuria³. In Bangladesh though maternal mortality rate (MMR) declined significantly around 40% in the past decade, still eclampsia accounts for 20% of maternal death⁵. The incidence of eclampsia is high (7.9%) according to the results of a house to house survey⁴. Though rare in developed countries, it is a common problem in developing countries because illiteracy, lack of health awareness and education, poverty, superstition and prevent women from seeking medical advice during pregnancy. Still eclampsia is one of the leading causes of maternal death in Bangladesh⁵. Eclampsia is a multisystem disorder, and the pathophysiology is thought to involve cerebral vasospasm leading to ischemia and cerebral edema. Until recently, the treatment of eclampsia varied throughout the world. The basic principles of management are: (a) control of convulsion, (b) control of hypertension, (c) initiation of steps to effective delivery, and (d) general nursing care. The first goal of management of eclampsia is control of convulsions and stabilization of the patient's basic cardiovascular status. Administration of magnesium sulphate by an

established protocol is considered to be the most rapid, efficient and safe pharmacologic approach for accomplishing this goal⁷. High blood pressure is controlled by injection of hydralazine intravenously followed by oral nifedipine or methyldopa or atenolol. Eclampsia is uniquely a disease of pregnancy, and the only cure is delivery regardless of gestational age. A national therapy for general management, management of hypertension and convulsion has been established in our setup by ‘The Eclampsia Working Group of Bangladesh’, but controversy exists regarding the obstetric management⁷. As we do not have adequate facilities for intrapartum management, cesarean section is preferred in many cases, particularly when the fetus is alive, considering the fact that patients and the fetuses may not tolerate the stress of labor. In Bangladesh, many researchers have worked on eclampsia, but most of the works are related to efficacy, dose and frequency of use of magnesium sulphate. There are only a few works on obstetric management of eclampsia. Several studies were conducted in Bangladesh regarding the issue but very few studies tried to assess reliable conditions of the patients with eclampsia. So, our study will contribute to the doctors to treat those patients more effectively.

II. Objectives

General Objective:

1. To assess Socio-economic, Demographic and Clinical Presentation of eclampsia patients in Bangladesh

Specific objectives:

1. To observe the conditions of Eclampsia patients in Bangladesh

III. Materials and Methods

A cross-sectional study was conducted in the department of Obstetrics & Gynecology of 250 bedded General Hospital, Jamalpur, Bangladesh during the period from January 2017 to December 2017. A total 40 women with term pregnancy, live fetus were included in the study. Diagnostic criteria of eclampsia were high blood pressure (>140/90 mm of Hg), significant proteinuria and convulsion associated with pregnancy more than 20 weeks of gestation. The purpose and procedure of the study was explained to the subjects who fulfilled the enrollment criteria. After taking informed written consent from the guardians of the patients, history was taken carefully and a thorough clinical examination was done. Then urine was tested (heat coagulation method) for protein. Convulsions were controlled by magnesium sulphate (MgSO₄) if not contraindicated and blood pressure was controlled by hydralazine, nifedipine or methyldopa. After initial management, decision for termination of pregnancy was taken by the senior obstetrician of the unit. The mode of delivery was carefully noted and the patients were followed-up till discharge or death. Parameters for fetal and neonatal outcomes were birth weight, APGAR score, live or still births and any complication. Hematuria, pulmonary edema, Cerebrovascular accident (CVA), renal failure, obstetric shock, abruptio placenta and postpartum hemorrhage (PPH) were considered as maternal complications. All the relevant data for each patient were recorded in a predesigned data collection sheet. Collected data were compiled and appropriate statistical analyses (Chi-square and unpaired Student’s t tests) were done using computer based software, SPSS version 16.0. P value <0.05 was taken as minimum level of significance.

IV. Results

In this study, 57.5% were aged <20 years, gestational age >37 weeks were in 52.5% patients, lower socio-economic status were in 62.5% and Primi-gravida were 77.5%. Anti-natal checkup were irregular in 65%, Urine Albumin were mild (++) in 35% and unconsciousness were in 35% of the participants. Mean \pm SD of Systolic blood pressure were 161.9 ± 22.8 with a range of 120-230 and mean \pm SD of diastolic blood pressure were 100.7 ± 11.25 with a range of 79-129. Low birth weight of the neonates were in 47.5%, APGAR score at 1st minute, <2 were in 60% and at 5th minute were in 12.5%. Among the participants, 60% delivered live birth, among live birth 62.5% were asphyxiated and among asphyxiated neonates 66.66% referred to ICU. Forty five (45%) declared no complications but among the complication (55%) group, most of the participants (27.27%) suffered with Haematuria followed by Pulmonary Oedema (18.18%), CVA (18.18%), Renal failure (13.62%), Abruptio Placenta (13.62%) and Obstetric Shock (9.09%) respectively.

Table I: Socio-economic and demographic conditions among the participants. (n=40)

Parameter	N	%
Age (in years)		
< 20	23	57.5
21--25	7	15.5
26--30	8	20
>30	2	5
Mean \pm SD	22 \pm 4.23	
Range	17--35	

Gestational age (weeks)		
< 37	19	47.5
>37	21	52.5
Mean ± SD	37.01 ± 1.22	
Range	37--40	
Socioeconomic condition		
Lower	25	62.5
Middle	15	37.5
Gravida		
Primi	31	77.5
Multi	9	22.5

Table 2: Clinical characteristics of the participants. (n=40)

Antenatal check-up	N	%
Regular	10	25
Irregular	26	65
None	4	10
Urine albumin		
Trace (+)	11	18.0
Mild (++)	15	37.5
Moderate (+++)	8	20.0
Severe (++++)	10	30.0
Consciousness on admission		
Conscious	08	22.0
Unconscious	12	32.0
Semiconscious	20	46.0

Table 3: Level of blood pressure of the study participants. (n=40)

Parameters	Measurement
Systolic blood pressure (mm Hg)	
Mean ± SD	161.9 ± 22.8
Range	120--230
Diastolic blood pressure (mm Hg)	
Mean ± SD	100.7 ± 11.25
Range	79--129

Table 4. Neonatal parameters of the study participants. (n=80)

Birth weight (kg)	n	%
Low birth weight	19	47.5
Normal	21	52.5
Mean ± SD	2.42 ± 0.36	
Range	1.75 --3.6	
APGAR score		
At 1 st minute		
< 2	24	60.0
>2	16	40.0
Mean ± SD	3.82 ± 2.62	
Range	2--8	
At 5 th minute		
< 2	5	12.5
>2	35	87.5
Mean ± SD	6.84 ± 2.39	
Range	4--10	

Table 5: Maternal complications after delivery and their types (n=80)

Complications	n	%
No Complication	18	45
Complication Occurred	22	65
Type of complications(n=22)		
Haematuria	6	27.27
Pulmonary Oedema	4	18.18
CVA	4	18.18
Renal Failure	3	13.62
Obstetric Shock	2	9.09
Abruptio Placenta	3	13.62

Table 5: Fetal outcome among the participants. (n=40)

Parameter	n	%
Fetal outcome		
Live birth	24	60.0
Stillbirth	16	40.0
Among live births (n=24)		
Asphyxiated	15	62.5
None	9	38.5
Referred to ICU		
Among asphyxiated babies (n=15)		
Yes	10	66.66
No	5	33.34

V. Discussion

Eclampsia is a well-recognized major cause of maternal and perinatal morbidity and mortality. Though the incidence has fallen considerably in the developed countries, its incidence, morbidity and mortality are still very high in Bangladesh⁶. In Bangladesh, among the causes of death in women of reproductive age, maternal death contributes 14% and eclampsia accounts for 20% of maternal death⁵. Control of convulsion and management of hypertension are two important parts of the management of eclampsia. There is now conclusive evidence that magnesium sulphate (MgSO₄) is the best available drug for management of convulsion⁷ and is widely used in different centers of Bangladesh. Once the convulsions are under control, there is universal agreement to deliver the patient regardless of gestational age. The mode is determined by gestational age, condition of the cervix and fetal condition¹. The chances of successful induction of labor are low in primigravide with an unfavorable cervix at <34 weeks gestation. Even if induction is successful in this group, emergency cesarean section becomes necessary in up to 45% of cases because of fetal intolerance of labor. A high proportion of such cases are, therefore, delivered by cesarean section without attempt to induction, particularly when delivery needs to be expedited quickly because of concerns about maternal condition¹. In our study, most of the patients at term had a meangestational age of 38 weeks. This corresponds with the other studies.^{10,12} In our study, 57.5% were aged <20 years, gestational age >37 weeks were in 52.5 % patients and Primi-gravida were in 77.5%, Anti-natal checkup were irregular in 65%, Urine Albumin were mild (++) 35% and unconsciousness were 35% of the participants. Mean =SD of Systolic blood pressure were 161.9 ± 22.8 with a range of 120-230 and mean=SD of diastolic blood pressure were 100.7 ± 11.25 with a range of 79-129. Low birth weight of the neonates were in 47.5%, APGAR score at 1st minute, <7 were in 60% and at 5th minute were in 12.5%. Among the participants, 60% delivered live birth, among live birth 62.5% were asphyxiated and among asphyxiated neonates 66.66% referred to ICU. In our study has shown that 62.5% patients belonged to low socioeconomic group and 73.5% of patients in the study of El-Nafaty et al.¹¹ On an average, 10% of patients in our study did not receive any antenatal care which was 35.57% in the Khanam et al⁹ study and 69.2% in the El-Nafaty series.¹¹ Most of the patients of both groups presented with antepartur eclampsia in unconscious or semiconscious state, which is similar to another study.⁹ This is similar to the findings of Ikechebelu and Okoli.¹⁵ Convulsions occurred in 55.8% patients after the 37th week in the study of Khanam et al.¹⁰ Ikechebelu and Okoli¹⁵ have reported in their series a high cesarean section rate of 85.7 percent among eclamptic patients. In the study, Forty five (45%) declared no complications but among the complication (55%) group, most of the participants (27.27%) suffered with Haematuria followed by Pulmonary Oedema(18.18%), CVA(18.18%), Renal failure (13.62%), Abruptio Placenta

(13.62%) and Obstetric Shock (09.09%) respectively. Our study results are similar with the study conducted in Bangladesh. Many studies have suggested that there is higher risk of preterm delivery and low birth weight in eclampsia along with increased rate of fetal death.^{16,17,18,19}

Limitations of the study

The present study was conducted in a short period of time with sample size. Therefore, in future further study may be under taken with large sample size.

VI. Conclusion & Recommendations

This study was undertaken to assess Socio-economic, Demographic and Clinical Presentation of eclampsia patients in Bangladesh. Observing maternal and fetal conditions in our study we can recommend to policy makers and health care provider to give more attention to reduce the burden of eclampsia from the society.

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