Original Article

Caesarean Section in Eclampsia and its Outcome in Bangladesh

Mazid M.A[1], Akter S[2]

Abstract

This prospective study was carried out on a total number of 58 eclamptic subjects during the period of July 2010 to June 2012 where 38 were undergone caesarean section (LUCS - Lower Uterine Caesarean Section) and 20 received conservative management. Mean (±SD) Age of the subjects who undergone Caesarean Section and conservative management (NVD) were 23.67±8.63 and 23.45±9.31 years respectively. Significant mean age difference was also present between these two groups. In 38 subjects of LUCS 34 subjects were recovered and rest 4 cases were died. Possible causes of death were due to heart failure and post partum pulmonary embolism. Among these 20 subjects who were treated conservatively 14 were recovered and 6 subjects were died. Causes of death in these groups were pulmonary embolism, Septic pneumonia, and HELLP syndrome. Significant difference was found between these two treatment options. It was observed that socio-demographic, economic status and BMI had significant effects on management outcome.

Key Words: *Eclampsia, Caesarean Section*

Introduction

Eclampsia is an acute and life-threatening complication of pregnancy, characterized by the appearance of tonic-clonic seizures, usually in a patient who had developed pre-eclampsia[1-4]. Gestational hypertension, pre-eclampsia, eclampsia, chronic hypertension either essential or due to renal disease or endocrine disease or other causes and chronic hypertension with superimposed preeclampsia or eclampsia are the hypertensive disorder in pregnancy. Eclampsia includes seizures and coma that happen during pregnancy but are not due to pre-existing or organic brain disorders[3,5-7]. Typically patients show signs of pregnancy-induced hypertension and proteinuria prior to the onset of the hallmark of eclampsia, the eclamptic convulsion. Other cerebral signs may proceed the convulsion such as nausea, vomiting, headache and visual disturbance. Advancement of the patho-phisiological process, other organ symptoms may be present-including abdominal pain, hepatic failure, signs of the HELLP syndrome, pulmonary oedema and oliguria[1-3]. The fetus may already been compromised by intrauterine growth retardation and with the toxaemic changes during eclampsia may suffer fetal distress. Placental bleeding due to placental abruption may occur. Eclampsia, like preeclampsia, tends to occur more commonly in first pregnancies and young mothers where it is thought that novel exposure to paternal antigens is involved. Further, woman with pre-existing vascular diseases (hypertension, diabetes and nephropathy) or thrombophilic diseases such as the antiphospholipid syndrome are at higher risk to develop pre-eclampsia and eclampsia. Hydatidiform mole also predisposes woman to pre-eclampsia and eclampsia. Further there is a genetic component, patients whose mother or sister had the condition are at higher risk[4]. Patients who have experienced eclampsia are at increased risk for pre-eclampsia/eclampsia in a later pregnancy. Seizures during pregnancy those are unrelated to pre-eclampsia need to be distinguished from eclampsia. Such disorders include seizure disorders as well as brain tumor, aneurysm of the brain, medication or drug related

1. Dr. M. A Mazid, Assistant Professor, (Obst & Gynae), North Bengal Medical College Hospital, Sirajgonj.
2. Dr. Shahida Akter, (MO), North Bengal Medical College Hospital, Sirajgonj.

seizures. Usually the presence of the signs of severe pre-eclampsia that proceed and accompany eclampsia facilitate the diagnosis. CBC, Renal function tests, Liver function tests, Coagulation profile, Serum uric acid level, Plasma red cell concentration, 24 hour urine analysis and Ultrasound are done for diagnosis[12,13]. The treatment of eclampsia requires prompt intervention and aims to prevent further convulsions, control the elevated blood pressure and immediately terminate the pregnancy. Invasive hemodynamic monitoring may be useful in eclamptic patients with severe cardiac disease, renal disease, refractory hypertension, pulmonary oedema and oliguria[3].

Methods & Materials

This prospective study was carried out on a total number of 58 eclamptic subjects during the period of July 2010 to June 2012 in North Bengal Medical College Hospital, Sirajgonj and subjects were from various places of rural areas (nine villages from three unions including different islands of Jamuna river). Among 58 subjects, 38 had undergone caesarean section (LUCS) and 20 received conservative management. Subjects were selected after taking brief history, general physical examination and relevant investigations, preliminary selection was done and the purpose of the study was explained in details to each subject. A data collection form was developed to obtain relevant information of demographic and socio-economic data such as age, educational status, occupation, family size, income and previous disease history. Then the subjects were followed up from the time of admission till discharge from the hospital. Data were expressed as mean ±SD for parametric values and median for non-parametric values. Comparisons between groups were done using Independent test, Z- test, ANOVA test and 2 test to compare means. All the statistical analysis was performed by the SPSS (version 19) data (SPSS Inc, Chicago, IL, USA).

Results

A group of 58 subjects were included in this study. Among them, 38 were treated by caesarean section and 20 were treated by conservative treatment. Majority of the study subjects were from middle class and most of the subjects were housewives. Majority (41.37%) subjects were from 18 to 24 years age groups. There was significant difference in the study subjects regarding age. Mean (±SD) age of the subjects who undergone caesarean section and conservative management were 23.67 ± 8.63 and 23.45 ± 9.31 years respectively. Significant mean age difference was also present between these two groups, (Table No-1).

Sociodemographic, economic status and BMI had significant effect on management outcome. (Table No - 2) In 38 subjects of LUCS, 34 were recovered after operation and 4 cases were died. Possible causes of death were due to Heart failure (in 2 subjects) and post partum pulmonary embolism (in 2 subjects). In those 20 subjects who were treated conservatively, 14 were recovered and 06 patients were died. Causes of death were pulmonary embolism (1 subject), Septic pneumonia (2 subjects), and HELLP syndrome (2 subjects) and in 1 case cause of death was not identified. Significant difference was found between these two treatment options (Table No-3).

Table No-1: Age distribution of the study subjects (n=58)

Age groups in years		N (%)	Test/p Value
18 - 24		24 (41.37)	10.13/ <.05
25 - 29		18 (31.03)	
30 - 34		10 (17.24)	
>= 35		06 (10.36)	
Treatment categorization	Caesarean section (means)	23.67 ± 8.63	10.57/ <.05
	Conservative (means)	23.45± 9.331	

Results were presented as mean±SD; ANOVA and independent t-test were done respectively as a test of significance. P<0.05 was considered as statistically significant.

Table No-2: Relation of types of management with various parameters of the study subjects:

Variables	Management (Caesarean section vs. Conservative management)	
	Test-Value	P-Value
Educational status	2.68	<0.05
Socio-economic status	1.99	<0.05
Occupation	1.87	<0.05
BMI (kg/m2)	2.15	<0.05

Proportional Z-test was performed for the analysis. P<0.05 was considered as statistically significant.

Table No-3: Outcome of the study subjects

Type of Management	Outcome		Statistical test	
	Recovery	Death	Test-Value	p-value
Caesarean section (n=38)	34	04	4.41	<0.05
Conservative management (n=20)	14	06		

Discussion

Eclampsia remains as major killer in Bangladesh. It is conventionally considered to be the end stage of pre-eclampsia. The etiology of pre-eclampsia is unknown, and the direct cause of eclamptic convulsions is also not known. Eclampsia is a multi-organ disorder, which presents as an interdisciplinary challenge to obstetricians and other physicians, who need to be familiar with pregnancy physiology and the current concepts in the pathogenesis and pathophysiology of severe pre-eclampsia and eclampsia. A team of obstetricians, other specialists such as cardiologists, nephrologists, and neurologists, an anaesthetist, and nurses with interest and experience are needed in an intensive care unit to protect eclamptic mothers from death.

A group of 58 subjects were included in this study where 38 were treated by caesarean section and 20 were treated by conservative treatment. Majority of the study subjects were from middle class and most of the subjects were housewives. Majority (41.37%) subjects were from 18 to 24 years age groups. There was significant difference in the study subjects regarding age. This finding was very much similar with the study conducted by Villar et al (2006)[11]. Significant mean age difference was also present between these two groups. Sociodemographic, economic status and BMI had significant effect on management outcome. Douglas et al (1992)[13] Leitch et al ((1997)[12] and Hjartardottir et al (2004)[10] observed the same result that socio-economic status affect treatment outcome of eclampsia. In 38 subjects of LUCS, 4 cases were died. Possible causes of death were due to Heart failure and Post partum pulmonary embolism. Prichard ET. et. al.[8] and Lu et al (2000)[9] had reported possible cause of death in eclampsia after operation might be pulmonary embolism and congestive cardiac failure. In those subjects who were treated conservatively 14 were recovered. Causes of death in this group were pulmonary embolism, septic pneumonia and HELLP syndrome. Significant difference was found between these two treatment options. This finding is also comparable with the study conducted by Rechards et al. (1988)[6] and Rozenberg et al (2006)[7].

Conclusion

Of course, this is not a well-designed controlled study. It is the description of the management and outcome of cases during a period of 2 years. Almost all of the patients came to the hospital after the development of convulsion. As a result, we could not record the cases as antepartum or intrapartum when they came with established labour. Most of the persons accompanying the patients were not so aware to mention clearly the regarding onset of convulsion and onset of labour. Most of the patients have not had an antenatal checkup, so we could not identify the severity of disease before the development of convulsion. Development of health awareness and implementation of antenatal care for all pregnant women may reduce the incidence of eclampsia. So an effort must be made to prevent the development of eclampsia and careful selection of treatment options must be applied.

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