Original Research Article

Obstetric Outcomes of Pregnant Women with Eclampsia

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Abstract

***Introduction*:** Over half a million women die each year from pregnancy-related causes, 99% in low and middle-income countries. In many low-income countries, complications of pregnancy and childbirth are the leading cause of death amongst women of reproductive years. Overall, 10% to 15% of direct maternal deaths are associated with pre-eclampsia and eclampsia, where maternal mortality is high; most deaths are attributable to eclampsia, rather than pre- eclampsia. This study aimed to analyze the obstetric outcomes of pregnant women with eclampsia. ***Methods*:** This prospective study was conducted at the Department of Obstetrics & Gynecology in Uttara Adhunik Medical College & Hospital, Dhaka, Bangladesh for 6 months; from June 2019- November 2019. A total of 50 subjects were included in this study. Informed written consent was taken from the study subjects. Data was collected using a pre-formed data sheet. Data processing and analysis were done by using SPSS version 17. All patients underwent necessary investigations. All information was kept confidential and used only for this study purpose. The ethical Clearance Certificate was obtained from Bangladesh Medical College. ***Result*:** In this study, most of the patients (30, 60.0%) belong to the age group of 18- 25 years, followed by 12 patients (24.0%) were from the>35 years age group and the rest 08 (16.0%) patients belonged to 26-35 years, age group. Most of the patients (35, 70.0%) were nulliparous followed by multiparous (15, 30.0%). Maximum respondents (26, 52.0%) developed seizures at the antepartum stage, followed by 18 patients (36.0%) at the intrapartum stage and the rest 03 (6.0%) patients developed seizures at the postpartum stage. Concerning complications, maximum patients (08, 16.0%) suffered from hemorrhage, followed by anemia (7, 14.0%), abruptio placenta (6, 12.0%), sepsis (5, 10.0%), obstructed labor (4, 8.0%). Regarding maternal and fetal outcomes in eclampsia, this study revealed satisfactory outcomes in 37 (74.0%) patients with prompt actions taken during the condition. However, perinatal death occurred in 2 (4.0%) cases, and maternal death occurred in 1 (2.0%) case. Preterm delivery was done on 10 (20.0%) patients. ***Conclusion*:** Obstetric outcome was somewhat satisfactory in this study due to immediate diagnosis and actions taken during eclampsia, however, perinatal death occurred in 2 (4.0%) cases and maternal death occurred in 1 (2.0%) case and 10 (20.0%) cases underwent preterm delivery.
Keywords: Eclampsia, Pre-eclampsia, Seizure, Nulliparous.

INTRODUCTION

Hypertensive disorders of pregnancy (HDP) are important causes of maternal mortality. They account for nearly 18% of all maternal deaths worldwide, with an estimated 62,000 to 77,000 deaths per year [1]. Pre-eclampsia is characterized by new-onset hypertension and proteinuria at ≥20 weeks of gestation. In the absence of proteinuria, hypertension together with evidence of systemic disease (such as thrombocytopenia or elevated levels of liver transaminases) is required for diagnosis. This disorder targets several organs, including the kidneys, liver, and brain, and is a leading cause of maternal and perinatal morbidity and mortality, and the association of seizure with those features is eclampsia [2]. The pathogenesis of eclamptic convulsions remains unknown. Cerebral imaging suggests that cerebral abnormalities in eclampsia (mostly vasogenic edema) are similar to those found in hypertensive encephalopathy. However, cerebral imaging is not necessary for the diagnosis or management of most women with eclampsia. The onset

of eclamptic convulsions can be antepartum (38–53%), intrapartum (18–36%), or postpartum (11–44%) [3]. When left untreated, pre-eclampsia can be lethal, and in low-resource settings, this disorder is one of the main causes of maternal and child mortality. In the absence of curative treatment, the management of pre-eclampsia involves stabilization of the mother and fetus, followed by delivery at an optimal time [4]. Pre-eclampsia remains a leading cause of maternal and perinatal mortality and morbidity. It is a pregnancy-specific disease characterized by de-novo development of concurrent hypertension and proteinuria, sometimes progressing into a multiorgan cluster of varying clinical features [5]. Pregnancies complicated by chronic hypertension are at risk for increased adverse maternal and neonatal outcomes including superimposed preeclampsia, fetal growth restriction, placental abruption, and perinatal death. Mainstays of management include blood pressure control, close monitoring for the development of superimposed preeclampsia, serial ultrasound assessment of fetal growth, and antenatal testing after 32 weeks [6]. Many studies showed, these conditions are associated with high maternal and perinatal mortalities and morbidities, and survivors may face long- term consequences. The pathophysiologic abnormalities in many of these disorders include vasospasm, platelet activation or destruction, microvascular thrombosis, endothelial cell dysfunction, and reduced tissue perfusion. Some of these disorders include acute fatty liver of pregnancy, thrombotic (idiopathic) thrombocytopenic purpura, hemolytic uremic syndrome, acute exacerbation of systemic lupus erythematosus, and disseminated herpes simplex and sepsis syndromes. Differential diagnosis may be difficult due to the overlap of several clinical and laboratory findings of these syndromes [7]. When left untreated, pre-eclampsia can be lethal, and in low-resource settings, this disorder is one of the main causes of maternal and child mortality [8]. This study aimed to analyze obstetric outcomes in patients with eclampsia.

OBJECTIVE
General Objective
- To analyze obstetric outcomes of Pregnant Women with eclampsia.

Specific Objective
- To know the socio-demographic characteristics of women with eclampsia.
- To determine the parity status of the study subjects.
- To observe the occurrence of the seizure in the study subjects.
- To identify the complications of Pregnant Women with eclampsia.
- To determine the obstetric outcomes of Pregnant Women with eclampsia.

METHODS
This prospective observational study was conducted at the Department of Obstetrics & Gynecology in Uttara Adhunik Medical College & Hospital, Dhaka, Bangladesh for 6 months; from June 2019- November 2019. A total of 50 subjects were included in this study. Informed written consent was taken from the study subjects. Data were collected using a pre-formed data sheet. The current guideline for the management of pre-eclampsia and eclampsia was followed in this study. Data processing and analysis were done by using SPSS version 17. All patients underwent necessary investigations. All information was kept confidential and used only for this study purpose. The Ethical Clearance Certificate was obtained from Bangladesh Medical College.

Inclusion Criteria
- Patients with clinical features of eclampsia.
- Patients who had given consent to participate in the study.

Exclusion Criteria
- Patients who did not give consent to participate in the study.
- Patients with other chronic diseases.

RESULTS

Table 1: Age distribution of study subjects (N=50)

Age (years)	N	%
18-25	30	60.0
26-35	08	16.0
>35	12	24.0

In this study, most of the patients (30, 60.0%) belong to the age group of 18-25 years, followed by 12 patients (24.0%) who were from the>35 years age group and the rest 08 (16.0%) patients belonged to 26-35 years age group [Table 1].

Table 2: Distribution of subjects according to parity (N=50)

Parity	N	%
Nulliparous	35	70.0
Multiparous	15	30.0

Most of the patients (35, 70.0%) were nulliparous followed by multiparous (15, 30.0%) [Table 2].

Table 3: Distribution of subjects according to the occurrence of the seizure (N=50)

Seizure	N	%
Antepartum	26	52.0
Intrapartum	18	36.0
Postpartum	03	6.0

Maximum respondents (26, 52.0%) developed seizures at the antepartum stage, followed by 18 patients (36.0%) at the intrapartum stage and the rest 03 (6.0%) patients developed seizures at the postpartum stage [Table 3].
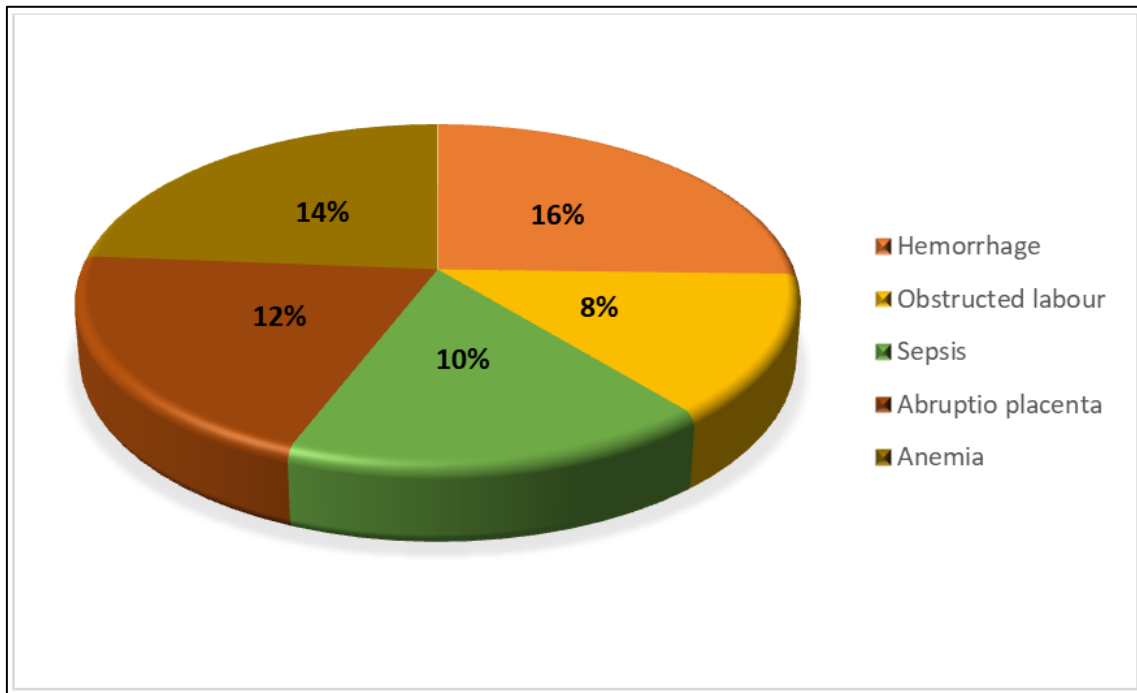

Figure 1: Distribution of patients according to complication (N=50)

Concerning complications, maximum patients (08, 16.0%) suffered from hemorrhage, followed by anemia (7, 14.0%), abruptio placenta (6, 12.0%), sepsis (5, 10.0%), obstructed labor (4, 8.0%) [Figure 1].

Table 4: Distribution of respondents according to feto-maternal outcome (N=50)

Outcome	N	%
Maternal death	01	2.0
Perinatal death	02	4.0
Pre-term delivery	10	20.0
Satisfactory outcome after prompt management	37	74.0

Regarding maternal and fetal outcomes in eclampsia, this study revealed satisfactory outcomes in 37 (74.0%) patients with prompt actions taken during the condition however, perinatal death occurred in 2 (4.0%) cases and maternal death occurred in 1 (2.0%) case. Preterm delivery was done on 10 (20.0%) patients [Table 4].

DISCUSSION

In this study, most of the patients (30, 60.0%) belong to the age group of 18-25 years, followed by 12 patients (24.0%) who were from the>35 years age group and the rest 08 (16.0%) patients belonged to 26-35 years age group. The mean age of the patients was 23·5 years in a study [9]. According to a study, women of the extremes of maternal age have the greatest risk of pre-eclampsia [10]. Another study revealed the mean age of the women was 27.1±5.6 years [11]. Most of the patients (35, 70.0%) were nulliparous followed by multiparous (15, 30.0%) in the present study. A study showed one hundred eighty-one cases were nulliparous (40.77%) [12]. According to another study, nulliparous teenagers were the most commonly affected women consisted 60.4% [13]. A study showed, hypertensive diseases of pregnancy remain a leading cause of direct maternal deaths in the United Kingdom; pre-eclamptic conditions represent one in three cases of severe obstetric morbidity; hypertension and/or proteinuria is the leading single identifiable risk factor in pregnancy associated with stillbirth (one in five stillbirths in otherwise viable babies); and pre-eclampsia is strongly associated with fetal growth restriction, low birth weight, preterm delivery, respiratory distress syndrome, and admission to neonatal intensive care [14]. The reported incidence of eclampsia is 1.6 to 10 per 10,000 deliveries in developed countries, whereas it is 50 to 151 per 10,000 deliveries in developing countries. In addition, low-resource countries have substantially higher rates of maternal and perinatal mortalities and morbidities [15]. According to a study, the rate of stillbirths and neonatal deaths was 22.2/1000 and 34.1/1000, respectively. Preterm eclampsia occurred

more commonly antepartum and was associated with more maternal complications and fetuses that were small for gestational age, as well as with higher rates of stillbirth and neonatal mortality. Antepartum eclampsia, which was more likely to occur preterm, was associated with a higher rate of maternal complications and higher neonatal mortality. Both factors (gestational prematurity and antepartum occurrence) contributed independently to the severity of the outcome [16]. Maximum respondents (26, 52.0%) developed seizures at the antepartum stage, followed by 18 patients (36.0%) at the intrapartum stage and the rest 03 (6.0%) patients developed seizures at the postpartum stage in this study. Regarding maternal and fetal outcomes in eclampsia, this study revealed satisfactory outcomes in 37 (74.0%) patients with prompt actions taken during the condition. However, perinatal death occurred in 2 (4.0%) cases and maternal death occurred in 1 (2.0%) case. Preterm delivery was done on 10 (20.0%) patients. A study from India showed that, maternal death rate varied 2.2-9% which was similar to this study [17]. Perinatal mortality was 8.0% in eclampsia that was statistically significant according to another study [18]. Another study stated eclampsia was more associated with preterm delivery, cesarean section, low birth weight babies, and maternal and perinatal mortality [19].

Limitations of Study
The study was conducted in a single hospital with a small sample size. So, the results may not represent the whole community.

CONCLUSION
Pre-eclampsia affects 3–5% of pregnancies and is traditionally diagnosed by the combined presentation of high blood pressure and proteinuria. This study concluded that obstetric outcome was somewhat satisfactory due to immediate diagnosis and actions taken during eclampsia, however perinatal death occurred in 2 (4.0%) cases and maternal death occurred in 1 (2.0%) case. Preterm delivery was done on 10 (20.0%) patients.

RECOMMENDATION
Immediate diagnosis of this condition and prompt actions with magnesium sulfate play a vital role in reducing the rate of eclampsia developing intrapartum and immediately postpartum. Moreover, the pathogenesis of eclamptic convulsions remains unknown, so further studies should be conducted involving a large sample size and multiple centers regarding the pathogenesis and minimization of complications in this regard.

REFERENCES
1. Abalos, E., Cuesta, C., Grosso, A. L., Chou, D., & Say, L. (2013). Global and regional estimates of preeclampsia and eclampsia: a systematic review. *European journal of obstetrics & gynecology and reproductive biology*, 170(1), 1-7.
2. Chaiworapongsa, T., Chaemsaithong, P., Yeo, L., & Romero, R. (2014). Pre-eclampsia part 1: current understanding of its pathophysiology. *Nature Reviews Nephrology*, 10(8), 466-80.
3. Sibai, B. M. (2005). Diagnosis, prevention, and management of eclampsia. *Obstetrics & Gynecology,* 105(2), 402-10.
4. Mol, B. W., Roberts, C. T., Thangaratinam, S., Magee, L. A., De Groot, C. J., & Hofmeyr, G. J. (2016). Pre-eclampsia. *The Lancet*, 387(10022), 999-1011.
5. Steegers, E. A., Von Dadelszen, P., Duvekot, J. J., & Pijnenborg, R. (2010). Pre-eclampsia. *The Lancet,* 376(9741), 631-44.
6. Ankumah, N. A., & Sibai, B. M. (2017). Chronic hypertension in pregnancy: diagnosis, management, and outcomes. *Clinical obstetrics and gynecology*, 60(1), 206-14.
7. Sibai, B. M. (2009). Imitators of severe pre-eclampsia. In *Seminars in perinatology*, (Vol. 33, No. 3, pp. 196-205). WB Saunders.
8. Mol, B. W., Roberts, C. T., Thangaratinam, S., Magee, L. A., De Groot, C. J., & Hofmeyr, G. J. (2016). Pre-eclampsia. *The Lancet*, 387(10022), 999-1011.
9. Ikechebelu, J. I., & Okoli, C. C. (2002). Review of eclampsia at the Nnamdi Azikiwe University teaching hospital, Nnewi (January 1996-December 2000). *Journal of Obstetrics and Gynaecology,* 22(3), 287-90.
10. Ananth, C. V., Keyes, K. M., & Wapner, R. J. (2013). Pre-eclampsia rates in the United States, 1980-2010: age-period-cohort analysis. *Bmj,* 347.
11. Onuh, S. O., & Aisien, A. O. (2004). Maternal and fetal outcome in eclamptic patients in Benin City, Nigeria. *Journal of Obstetrics and Gynaecology*, 24(7) 765-8.
12. Taner, C. E., Hakverdi, A. U., Aban, M., Erden, A. C., & Özelbaykal, U. (1996). Prevalence, management and outcome in eclampsia. *International Journal of Gynecology & Obstetrics*, *53*(1), 11-15.
13. Eke, A. C., Ezebialu, I. U., & Okafor, C. (2011). Presentation and outcome of eclampsia at a tertiary center in South East Nigeria–a 6-year review. *Hypertension in Pregnancy*, *30*(2), 125-132.
14. Milne, F., Redman, C., Walker, J., Baker, P., Bradley, J., Cooper, C., ... & Waugh, J. (2005). The pre-eclampsia community guideline (PRECOG): how to screen for and detect onset of pre-eclampsia in the community. *Bmj*, *330*(7491), 576-580.

15. Bartal, M. F., & Sibai, B. M. (2020). Eclampsia in the 21st century. *American journal of obstetrics and gynecology*.

16. Douglas, K. A., & Redman, C. W. (1994). Eclampsia in the united kingdom. *Bmj*, 309(6966), 1395-400.

17. Nobis, P. N., & Hajong, A. (2016). Eclampsia in India through the decades. *The Journal of Obstetrics and Gynecology of India*, 66(1), 172-6.

18. Gul, A., Cebeci, A., Aslan, H., Polat, I., Ozdemir, A., & Ceylan, Y. (2005). Perinatal outcomes in severe preeclampsia-eclampsia with and without HELLP syndrome. *Gynecologic and obstetric investigation*, *59*(2), 113-118.

19. Ajah, L. O., Ozonu, N. C., Ezeonu, P. O., Lawani, L. O., Obuna, J. A., & Onwe, E. O. (2016). The feto-maternal outcome of preeclampsia with severe features and eclampsia in Abakaliki, South-East Nigeria. *Journal of clinical and diagnostic research: JCDR*, *10*(9), QC18.