

## Clinical Study of Eclampsia Patients in Early Age Group of Women Admitted into DMCh between July 2023 to December 2023

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### Abstract

**Background:** Eclampsia, characterized by the onset of seizures in women with preeclampsia, is a significant cause of maternal and neonatal mortality, especially in low-resource settings like Bangladesh. Young women, particularly those in their teenage years, are especially vulnerable to this life-threatening condition due to socio-economic and health factors.

**Objective:** This study aims to assess the clinical outcomes of eclampsia patients aged 15 to 20 years admitted to Dhaka Medical College Hospital (DMCh) between July 2023 and December 2023. **Method:** A cross-sectional study was conducted at DMCh, focusing on young women diagnosed with eclampsia. Patients admitted with symptoms of preeclampsia or eclampsia after 20 weeks of gestation were included. Detailed clinical evaluations and sociodemographic data were collected, including obstetric history and predisposing factors. Diagnostic tests were performed, and management protocols were followed, including the administration of magnesium sulfate. Maternal and neonatal outcomes were monitored, including mode of delivery and complications. **Results:** The majority of eclampsia patients (39.13%) were aged 17-18 years, followed by 35% aged 15-16 years, with a significant proportion being primigravida (55%). Most cases occurred between 36-38 weeks of gestation (35%). Antepartum eclampsia accounted for 90% of cases, and 80% of deliveries were via cesarean section. Maternal outcomes revealed a 77% improvement rate, while neonatal outcomes showed an 80% survival rate, despite a 15% stillbirth rate. **Conclusion:** The findings indicate that eclampsia predominantly affects young, primigravida women in late gestation, with significant implications for maternal and neonatal health. The high incidence of cesarean deliveries and notable stillbirth rates highlight the need for improved prenatal care and postnatal monitoring in this vulnerable population. Addressing these gaps could help reduce the burden of eclampsia in young women in Bangladesh.

**Keywords:** Eclampsia, maternal health, neonatal outcomes, young women, Bangladesh, preeclampsia, clinical profile.

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### INTRODUCTION

Eclampsia, a severe complication of pregnancy characterized by the onset of seizures in women with preeclampsia, remains a significant cause of maternal and neonatal mortality, particularly in low-resource settings. In countries like Bangladesh, where access to adequate prenatal care and emergency obstetric services may be limited, the impact of eclampsia is profound. Among the affected populations, young women—often in their teenage years or early twenties—are particularly vulnerable due to several socio-economic and health factors. This study aims to explore the clinical profile of

eclampsia patients in the early age group of women in Bangladesh, shedding light on the patterns, risk factors, and outcomes associated with this life-threatening condition [1-3].

Bangladesh faces unique challenges regarding maternal health due to widespread poverty, limited healthcare infrastructure, and cultural practices that contribute to early marriage and teenage pregnancies. These factors often predispose younger women to complications such as preeclampsia and eclampsia, which, if not managed timely, can lead to severe

consequences for both the mother and the fetus. Understanding the clinical characteristics of eclampsia in this demographic is crucial for developing targeted interventions to improve maternal outcomes [4].

Several studies have indicated that younger women, especially those in rural areas, are at higher risk of developing eclampsia due to inadequate antenatal care, malnutrition, and a lack of education about pregnancy-related complications [5-9]. This study seeks to examine the clinical presentations, management practices, and outcomes of eclampsia in this age group. By analyzing data from various healthcare centers across Bangladesh, the study aims to provide a comprehensive overview of the burden of eclampsia among young women.

The study will also focus on the availability and effectiveness of treatment protocols for eclampsia in different healthcare settings in Bangladesh. While magnesium sulfate remains the gold standard for managing eclampsia, the accessibility of this treatment, along with other supportive care measures, often varies depending on geographic location and the level of healthcare facility. The findings of this research will help in identifying gaps in care and potential areas for improvement.

Additionally, the study will explore the outcomes for neonates born to mothers who experience eclampsia, as neonatal health is intricately linked to maternal well-being. Premature birth, low birth weight, and perinatal death are common among babies born to eclamptic mothers, further highlighting the importance of addressing this condition in young women. Understanding the broader impact of eclampsia on both maternal and neonatal health will contribute to formulating comprehensive maternal health strategies.

Moreover, this clinical study of eclampsia patients in the early age group of women in Bangladesh aims to provide a detailed examination of the condition's prevalence, risk factors, clinical management, and outcomes. The insights gained from this research will be valuable for healthcare providers, policymakers, and public health professionals in improving maternal and neonatal care and reducing the burden of eclampsia in Bangladesh's young female population.

## OBJECTIVE

To assess the clinical outcome of eclampsia patients in early age group of women admitted into DMCh between July 2023 to December 2023.

## METHODOLOGY

This study was conducted at Dhaka Medical College Hospital (DMCh) in Bangladesh from July 2023 to December 2023, focusing on young women diagnosed with eclampsia. The primary objective was to investigate the prevalence, risk factors, and outcomes—both

maternal and neonatal—among eclampsia patients aged 15 to 20 years. All patients admitted to the Obstetrics and Gynecology department of DMCh with more than 20 weeks of gestation and exhibiting symptoms of preeclampsia or eclampsia were included in the study.

The study methodology involved detailed clinical evaluations, including diagnosis, data collection, and case study observations. Each participant's sociodemographic information, such as age, family history, socioeconomic status, education level, and obstetric history, was collected through direct consultations and discussions with their attendants. Factors such as the number of pregnancies, previous pregnancy complications, and current symptoms were also recorded. Additionally, the research focused on identifying predisposing factors for eclampsia, including malnutrition, lack of prenatal care, and genetic predisposition.

Clinical assessments were thorough, involving blood pressure monitoring, urine protein tests, and Doppler ultrasounds to assess fetal health. Diagnostic tests included complete blood counts, coagulation profiles, liver and renal function tests, and 24-hour proteinuria measurements. All diagnostic procedures were performed under the supervision of obstetric specialists at DMCh, ensuring accuracy and consistency across patient care. A standardized protocol for managing eclampsia was implemented throughout the study, including magnesium sulfate administration for seizure control and blood pressure management.

The research also closely examined the labor and delivery process, recording whether labor was induced or spontaneous, and documenting the mode of delivery—whether cesarean section or vaginal birth. Postpartum maternal and neonatal outcomes were carefully monitored, with particular attention to complications such as postpartum hemorrhage, preterm birth, and neonatal asphyxia. Patients with severe comorbidities, such as cardiac disease, renal failure, or neurological disorders, were excluded from the study to maintain the focus on eclampsia.

Ethical approval for the study was obtained from the DMCh Ethics Committee, and informed oral consent was secured from all participants. The gathered data was analyzed to identify trends in eclampsia prevalence, associated risk factors, and outcomes in this vulnerable age group. The findings will contribute to improving clinical management strategies for eclampsia in young women in Bangladesh.

## RESULTS

The age distribution of the eclampsia patients shows that the majority (39.13%) were aged 18-19 years, followed by 35% of patients aged 16-17 years. Additionally, 25.87% of the patients were 20 years old. This data indicates that most eclampsia cases occurred in

late adolescence, with a smaller proportion of cases observed at age 20.

of eclampsia cases occurred in younger, adolescent women, particularly between the ages of 15 and 17.

**Table 1: Age distribution of the study group**

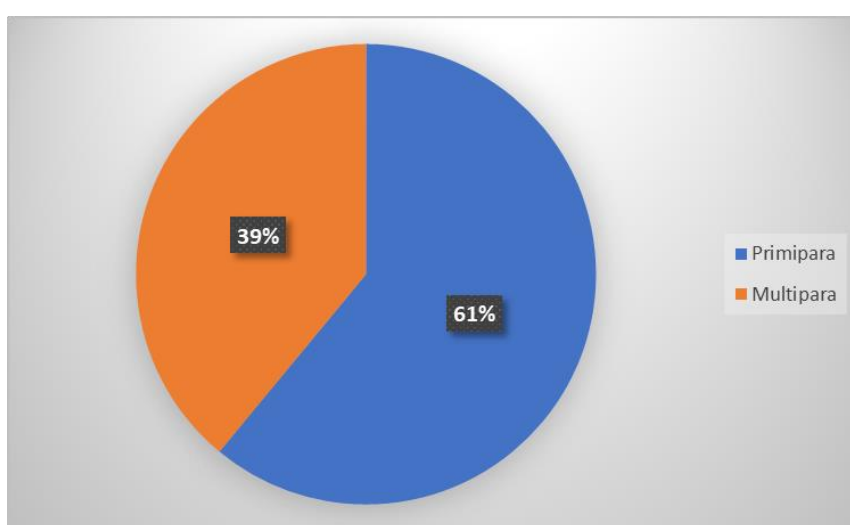
Age Group	n	%
15-16 years	40	35%
17-18 Years	45	39.13%
19-20 years	30	25.87%

The table illustrates the marital age distribution of eclampsia patients, with the highest percentage (39.13%) falling within the 17-18 years age group. Patients aged 15-16 years made up 37% of the study group, while those aged 19-20 years accounted for 24.35%. This data highlights that a significant proportion

**Table 2: Marital age in yrs**

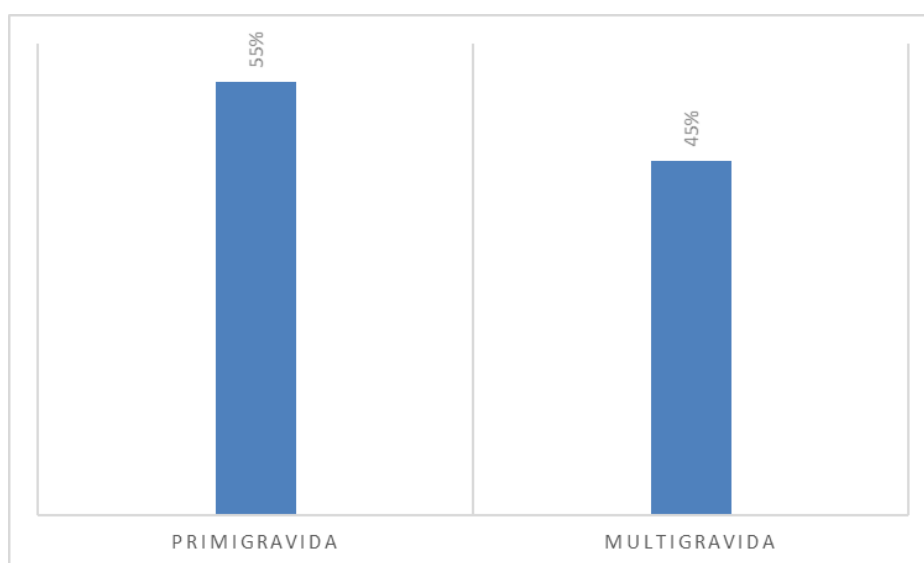
Age Group	n	%
15-16 years	42	37%
17-18 Years	45	39.13%
19-20 years	30	24.35%

The parity distribution of the eclampsia patients shows that 61% were primipara (having given birth once), and 39% were multipara (having given birth more than once). This indicates that the majority of eclampsia cases were found in women who were either in their first or second pregnancy, with a lower incidence among those with multiple previous deliveries.



**Figure 1: Parity Distribution**

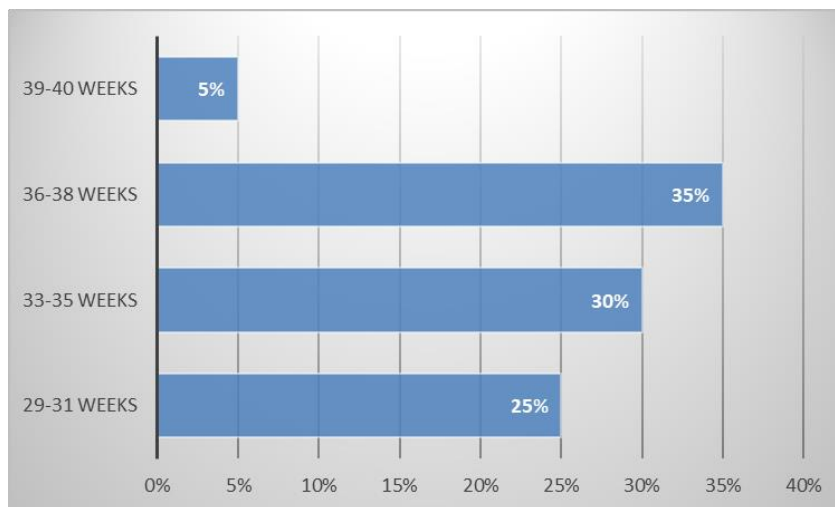
The data shows that 55% of the eclampsia patients were primigravida (experiencing their first pregnancy), while 45% were multigravida (had been pregnant more than once).



**Figure 2: Gravida distribution**

A majority, 35%, of the cases occurred between 36-38 weeks of gestation, followed by 30% between 33-35 weeks, and 25% between 29-31 weeks. Only 5% of the cases were observed at full-term, between 39-40

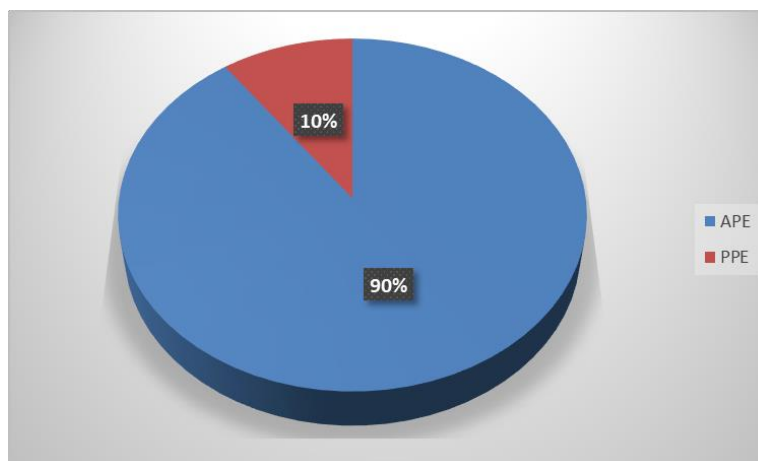
weeks, indicating that eclampsia predominantly affects patients in the later stages of pregnancy but often before reaching full-term.



**Figure 3: Gestational Age in Wks**

In this study, two types of preeclampsia were observed among the patients: Antepartum Eclampsia (APE), which accounted for 90% of cases, and

Postpartum Eclampsia (PPE), which comprised the remaining 10%.



**Figure 4: Type of Eclampsia**

**Table 3: Mode of delivery and maternal outcome**

<b>Mode of delivery</b>	<b>%</b>
Vaginal	20%
LSCS	80%
<b>Maternal Outcome</b>	<b>%</b>
Improved	77%
Dead	5%
ICU transferred	5%
PPE	8%
PPH	5%
<b>Neonatal Outcome</b>	<b>%</b>
Alive	80%
Still Born	15%
Admitted to NICU	5%

## DISCUSSION

The findings from our study, which focused on eclampsia patients admitted to Dhaka Medical College Hospital (DMCh), align with and differ from previous studies conducted in similar populations. In our study, the majority of eclampsia patients (39.13%) were aged 17-18 years, followed by 35% between 15-16 years, and 25.87% were 19-20 years old. This pattern is consistent with the findings from studies conducted in other South Asian countries, where the incidence of eclampsia is often highest among adolescent and early adult women [10]. For instance, research in Pakistan and India has similarly shown that eclampsia tends to be more prevalent in younger women, often between 15 and 20 years of age [11, 12]. These similarities underscore the vulnerability of young women in this region to hypertensive disorders of pregnancy, likely due to factors such as early marriage, teenage pregnancies, and limited access to prenatal care.

In contrast, studies conducted in high-income countries such as the United States or the United Kingdom report a higher incidence of eclampsia among women in their late twenties or thirties [13]. This difference could be attributed to higher average maternal ages in these countries, as women often delay childbearing due to career or educational pursuits. Additionally, the availability of comprehensive prenatal care and early detection of preeclampsia in these settings may reduce the incidence of severe cases in younger women. These discrepancies between low-resource and high-resource settings highlight the impact of socioeconomic and healthcare factors on the demographic profile of eclampsia patients.

Our study also found that 55% of the patients were primigravida, while 45% were multigravida, with primigravida women being more likely to develop eclampsia. This aligns with several other studies, including a large-scale study in Nigeria, where primigravida women were found to be at a significantly higher risk of eclampsia than multigravida women. Primigravida women are generally more susceptible to hypertensive disorders of pregnancy, possibly due to immune system factors and the body's response to pregnancy [14, 15]. However, a study conducted in the United States found a higher proportion of eclampsia in multigravida women, suggesting that other factors, such as underlying health conditions, might play a role in eclampsia risk in different populations.

The gestational age distribution in our study shows that 35% of cases occurred between 36-38 weeks, with a smaller percentage occurring after 39 weeks (5%). This is in line with the global trend that eclampsia often develops in the later stages of pregnancy, but typically before full term. Studies also reported the highest incidence of eclampsia between 34-38 weeks of gestation, suggesting a similar pattern in low- and middle-income countries. The rarity of eclampsia cases

at full-term highlights the need for vigilant monitoring of high-risk pregnancies in the late preterm phase to prevent adverse outcomes [10, 8].

Regarding the type of eclampsia, our study found that 90% of cases were antepartum eclampsia (APE) and 10% were postpartum eclampsia (PPE). This distribution is comparable to other studies, where antepartum eclampsia typically accounts for the majority of cases. However, the incidence of PPE in our study is lower than reported in some research, particularly in studies from high-income countries, where postpartum eclampsia may account for a larger proportion of cases due to better prenatal screening and management of antepartum eclampsia [3]. The lower PPE rates in our study suggest the need for postnatal monitoring in high-risk patients, even after delivery.

Lastly, the mode of delivery and outcomes in our study are also reflective of common trends. The high rate of cesarean deliveries (80%) among eclampsia patients is consistent with the practice of opting for cesarean sections to prevent further complications in cases of severe maternal distress. Similar results have been observed in studies where cesarean section is often preferred to expedite delivery and manage maternal complications [4, 5]. Maternal outcomes in our study showed a 77% improvement rate, which is encouraging, though the 5% maternal mortality rate highlights the severity of eclampsia in low-resource settings. Neonatal outcomes were also largely favorable, with 80% of babies born alive, though 15% stillbirths and 5% NICU admissions indicate the need for enhanced neonatal care services.

In conclusion, while our study shares similarities with other research on eclampsia in terms of age distribution, gestational timing, and risk factors, there are notable differences in maternal and neonatal outcomes, particularly between low- and high-resource settings. These findings emphasize the importance of improving prenatal care, timely intervention, and postnatal monitoring to reduce the burden of eclampsia, particularly among young and first-time mothers in Bangladesh.

## CONCLUSION

The findings indicate that eclampsia predominantly affects young, primigravida women in late gestation, with significant implications for maternal and neonatal health. The high incidence of cesarean deliveries and notable stillbirth rates highlight the need for improved prenatal care and postnatal monitoring in this vulnerable population. Addressing these gaps could help reduce the burden of eclampsia in young women in Bangladesh.

## REFERENCE

1. Rana, S., Lemoine, E., Granger, J. P., & Karumanchi, S. A. (2019). Preeclampsia:

- pathophysiology, challenges, and perspectives. *Circ Res*, 124, 1094–1112. [PubMed] [Google Scholar]
2. Filipek, A., & Jurewicz, E. (2018). Preeclampsia - a disease of pregnant women (Article in Polish). *Postepy Biochem*, 64, 232–229. [PubMed] [Google Scholar]
  3. Askie, L. M., Duley, L., Henderson-Smart, D. J., & Stewart, L. A. (2007). Antiplatelet agents for prevention of pre-eclampsia: a meta-analysis of individual patient data. *Lancet*, 369, 1791–1798. [PubMed] [Google Scholar]
  4. Ramos, J. G., Sass, N., & Costa, S. H. (2017). Preeclampsia. *Rev Bras Ginecol Obstet*, 39, 496–512. [PMC free article] [PubMed] [Google Scholar]
  5. Wu, C. T., Kuo, C. F., Lin, C. P., Huang, Y. T., Chen, S. W., Wu, H. M., & Chu, P. H. (2021). Association of family history with incidence and gestational hypertension outcomes of preeclampsia. *Int J Cardiol Hypertens*, 9, 100084. [PMC free article] [PubMed] [Google Scholar]
  6. Staff, A. C. (2019). The two-stage placental model of preeclampsia: an update. *J Reprod Immunol*, 134, 1–10. [PubMed] [Google Scholar]
  7. Weissgerber, T. L., & Mudd, L. M. (2015). Preeclampsia and diabetes. *Curr Diab Rep*, 15, 9. [PMC free article] [PubMed] [Google Scholar]
  8. Stubert, J., Reister, F., Hartmann, S., & Janni, W. (2018). The risks associated with obesity in pregnancy. *Dtsch Arztebl Int*, 115, 276–283. [PMC free article] [PubMed] [Google Scholar]
  9. Osungbade, K. O., & Ige, O. K. (2011). Public health perspectives of preeclampsia in developing countries: implication for health system strengthening. *J Pregnancy*, 2011, 481095. [PMC free article] [PubMed] [Google Scholar]
  10. Mou, A. D., Barman, Z., Hasan, M., Miah, R., Hafsa, J. M., Das Trisha, A., & Ali, N. (2021). Prevalence of preeclampsia and the associated risk factors among pregnant women in Bangladesh. *Sci Rep*, 11, 21339. [PMC free article] [PubMed] [Google Scholar]
  11. Yeo, S. (2010). Prenatal stretching exercise and autonomic responses: preliminary data and a model for reducing preeclampsia. *J Nurs Scholarsh*, 42, 113–121. [PMC free article] [PubMed] [Google Scholar]
  12. Soomro, S., Kumar, R., Lakhani, H., & Shaukat, F. (2019). Risk factors for pre-eclampsia and eclampsia disorders in tertiary care center in Sukkur, Pakistan. *Cureus*, 11, 0. [PMC free article] [PubMed] [Google Scholar]
  13. Belay, A. S., & Wudad, T. (2019). Prevalence and associated factors of pre-eclampsia among pregnant women attending anti-natal care at Mettu Karl Referral Hospital, Ethiopia: cross-sectional study. *Clin Hypertens*, 25, 14. [PMC free article] [PubMed] [Google Scholar]
  14. Wassie, A. Y., & Anmut, W. (2021). Prevalence of eclampsia and its maternal-fetal outcomes at Gandhi Memorial Hospital, Addis Ababa Ethiopia, 2019: retrospective study. *Int J Womens Health*, 13, 231–237. [PMC free article] [PubMed] [Google Scholar]
  15. Ugwu, E. O., Dim, C. C., Okonkwo, C. D., & Nwankwo, T. O. (2011). Maternal and perinatal outcome of severe pre-eclampsia in Enugu, Nigeria after introduction of magnesium sulfate. *Niger J Clin Pract*, 14, 418–421. [PubMed] [Google Scholar]