Journal of Population Therapeutics & Clinical Pharmacology

RESEARCH ARTICLE
DOI: 10.53555/90e51m39

PREGNANCY OUTCOMES IN PATIENTS PRESENTING WITH ANTEPARTUM ECLAMPSIA AT A TERTIARY CARE HOSPITAL IN KARACHI

Dr Kainat Sultan[1*], Dr Saba Khan[2], Dr Sadia,[1] Dr Mahrukh Manzoor[1], Dr Komal[1], Dr Sidra Ali[1]

[1*]FCPS Resident, Department of Gynaecology and Obstetrics, JPMC Karachi, Pakistan
[2]Associate Professor, Department of Gynaecology and Obstetrics, JPMC Karachi, Pakistan

***Corresponding Author:** Dr Kainat Sultan
*Email: sultan_kainat@yahoo.com

Abstract

Objective:
To determine maternal and perinatal outcomes in patients with antepartum eclampsia in a tertiary care hospital.

Study Design:
Design Prospective observational study.

Place and Duration of Study:
Department of Obstetrics and Gynaecology, Jinnah Postgraduate Medical Centre (JPMC), Karachi from 1st October 2024 to 31st March 2025.

Methodology:
A cross-sectional study was conducted: 189 antepartum eclampsia diagnosed pregnant women were recruited through non -probability consecutive sampling. ICU admissions, length of ICU stay, maternal mortality and causes, recurrence of seizures after magnesium sulphate, fetal outcomes, Apgar scores and birthweight. Statistical analyses were conducted with SPSS version 25.

Results:
84% of 189 patients needed ICU admission. There was maternal mortality in 18% and cardiopulmonary failure (92.6%) was the main cause. There was a history of recurrent epileptic fits in 16% of patients. Stillbirths were 43.4%, neonatal deaths 13.8%, and Apgar score of <7 at 5-min were observed in 57.1% of neonates. Mean birthweight was 2.24 kg.

Conclusion:
Poor maternal and fetal outcomes are related to antepartum eclampsia. Early diagnosis, increasing the quality of antenatal care and consolidation of specialized intensive care must be provided to decrease mortality and improve the prognosis.

Keywords: Antepartum eclampsia, maternal mortality, perinatal outcome, magnesium sulphate, birthweight, ICU admission.

INTRODUCTION

Hypertensive disorders of pregnancy, and in particular preeclampsia and its evolution to eclampsia, continue to be an important cause of maternal and perinatal morbidity and mortality, especially in low- and middle-income countries (LMICs) such as Pakistan[1]. Eclampsia is new onset generalised

tonic–clonic seizures in a woman with preeclampsia, a life-threatening obstetric emergency in tertiary care settings[2]. Current national data points that 12–15% of maternal deaths are caused by preeclampsia/eclampsia in Pakistan3 with observed maternal mortality rates as high as 34% in some instances4.

Common maternal complications of eclampsia are pulmonary oedema, acute renal failure cerebrovascular accident, HELLP syndrome and multi-organ failure[5],[6]. Fetal and neonatal consequences are also worrisome, including intrauterine growth restriction (IUGR), preterm delivery, low APGAR scores, respiratory distress, high rate of NICU admissions, and high rates of perinatal mortality[7], [8]. In Pakistan, significant predictors for bad outcomes include primigravidity, non-booked antenatal status and delayed hospital arrival [9],[10]. A case–control study from Karachi on severe preeclampsia showed that antenatal surveillance can help in reducing complications. [11]

The reported risk factors for preeclampsia/eclampsia globally include chronic hypertension, obesity, primiparity, low socio-economic status, anaemia, and lack of antenatal care[12]. However, there is an absence of recent (up to-date) data regarding the outcomes of antepartum eclampsia from tertiary care hospitals in Karachi, which may restrict health care plans and policy development. This study is designed to assess maternal and fetal outcome of antepartum eclampsia cases treated in a tertiary care hospital in Karachi, to facilitate providing better medical services and proper allocation of resources.

METHODOLOGY

Jinnah Postgraduate Medical Centre (JPMC), Karachi during a period of six months from 1st October 2024 to 31st March 2025 after obtaining the extended permission from the College of Physician & Surgeons Pakistan (CPSP) and the Institution Review Board (IRB). Consecutive nonprobability sampling was used to recruit 189 patients in the study. The sample size was determined by WHO sample size calculator using 8.6% prevalence of low APGAR score (140/90 mmHg) and proteinuria (2+ on dipstick) without any other medical cause (i.e. epilepsy, known neurological disease) were enrolled in the study. All patients with seizure as a result of other identified medical causes and in n on pregnant women's were excluded. Detailed demographic and obstetric history such as maternal age, parity, gravida, gestational age, booking status, mode of delivery, and history of hypertensive disorders were collected.

All patients were clinically evaluated and treated according to the hospital's protocol. Information on maternal end points, including mode of delivery, ICU admission, seizure recurrence after magnesium sulphate was given, maternal death and causes of death were collected. These included birth weight, Apgar score at 5 minutes, live birth or stillbirth, and neonatal or perinatal death and the reasons of these.

All relevant findings were penned down in a predesigned, performa. Statistical analysis was carried out with SPSS 20. Quantitative data including maternal and gestational age were shown as mean ± standard deviation. Categorical variables, such as booking status, mode of delivery, and outcome, were expressed as frequencies and percentages. The confounders were age parity, gravida, booking status and time of gestation and stratified by potential effect modifiers to evaluate the influence on pregnancy outcomes. A post-stratification chi-square test was employed, with a $p<0.05$ deemed to be statistically significant

RESULTS

A total of 189 parturient who developed antepartum eclampsia were recruited in this prospective observational study. Most patients fell within 26–30-year age range where the incidence of hypertensive complications is higher.

Overall, 159 (84%) women were admitted to the ICU and 30 (16%) to general wards. With respect to the duration of ICU stay, 122 women (64.6%) were confirmed for 3–7 days, 34 patients (18%) for less than 3 days, and 33 patients (17.5%) for more than 7 days.

(Table 1; Figure 1, Figure 2)

There were 34 (18%) maternal deaths in all, indicating high maternal mortality load among antepartum eclamptic cases.

(Table 2; Figure 3)
The most common causes of death included cardiopulmonary failure in 31 cases (92.6%), acute renal failure, and cerebrovascular accidents in 9 patients (25.9%). Other infrequent etiologies comprised HELLP syndrome, pulmonary oedema, placenta previa, aspiration pneumonia, and hypoxic brain injury each with 3.7%.
(Table 3; Figure 7)
There were approximately 30 (16%) women who suffered a recurrence of seizures, not with standing early care that included magnesium sulphate treatment.
(Table 4; Figure 4)
Fetal outcomes included 82 (43.4%) stillbirths, 81 (42.9%) live births and 26 (13.8%) neonatal deaths.
(Table 5; Figure 5)
Regarding the Apgar score at 5 minutes for neonatal condition, %57.1 (n = 108) of the neonates had an Apgar score of less than 7, while %42.9 (n = 81) had a score of 7 or higher (which is healthier).
(Table 6; Figure 6)

Table 1: ICU Admission and Duration of Stay

ICU Admission Status	Number of Patients	Percentage (%)
Admitted to ICU	159	84.0
Not Admitted	30	16.0
ICU Stay Duration	Number of Patients	Percentage of ICU Patients (%)
< 3 days	34	18.0
3 - 7 days	122	64.6
> 7 days	33	17.5

Table 2: Maternal Mortality

Maternal Outcome	Number of Patients	Percentage (%)
Maternal Mortality	34	18.0
No Mortality	155	82.0

Table 3: Causes of Maternal Death

Cause of Death	Number of Cases	Percentage (%)
Cardiopulmonary Failure	31	92.6
Acute Renal Failure	9	25.9
Cerebrovascular Accidents	9	25.9
HELLP Syndrome	1	3.7
Pulmonary Edema	1	3.7
Placenta Previa	1	3.7
Aspiration Pneumonia	1	3.7
Hypoxic Brain Injury	1	3.7

Table 4: Recurrent Seizures After Magnesium Sulphate

Seizure Recurrence	Number of Patients	Percentage (%)
Yes	30	16.0
No	159	84.0

Table 5: Fetal Outcome at Birth

Fetal Outcome	Number of Neonates	Percentage (%)
Stillbirth	82	43.4
Live Birth	81	42.9
Neonatal Death	26	13.8

Table 6: Apgar Score at 5 Minutes

Apgar Score Category	Number of Neonates	Percentage (%)
< 7 (Sick)	108	57.1
≥ 7 (Healthy)	81	42.9

FIGURE 1: SUMMARY OF ADMITTED TO ICU

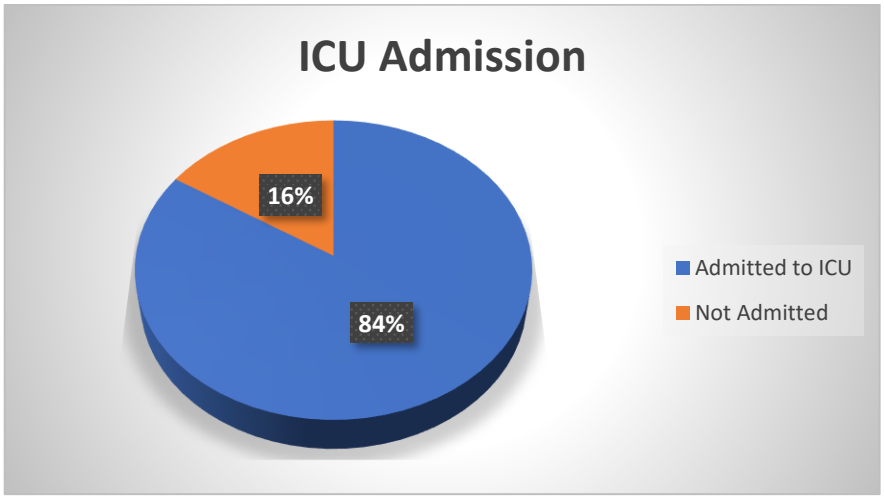


FIGURE 2: SUMMARY OF ICU STAY DURATION

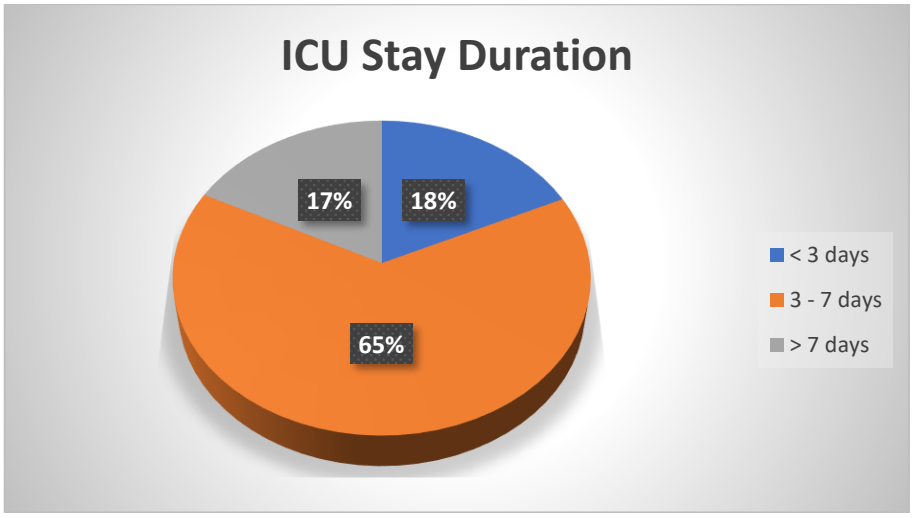


FIGURE 3: MATERNAL MORTALITY

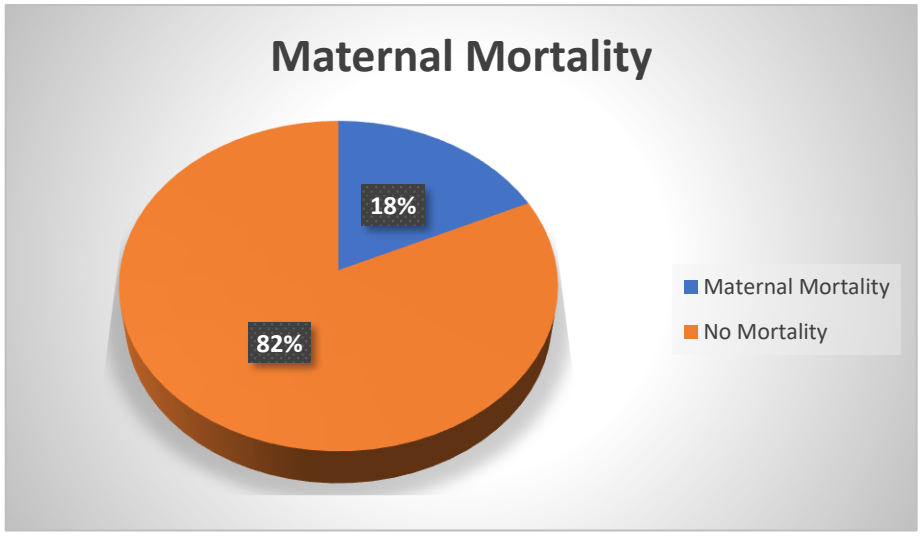


FIGURE 4: RECURRENTS FIT

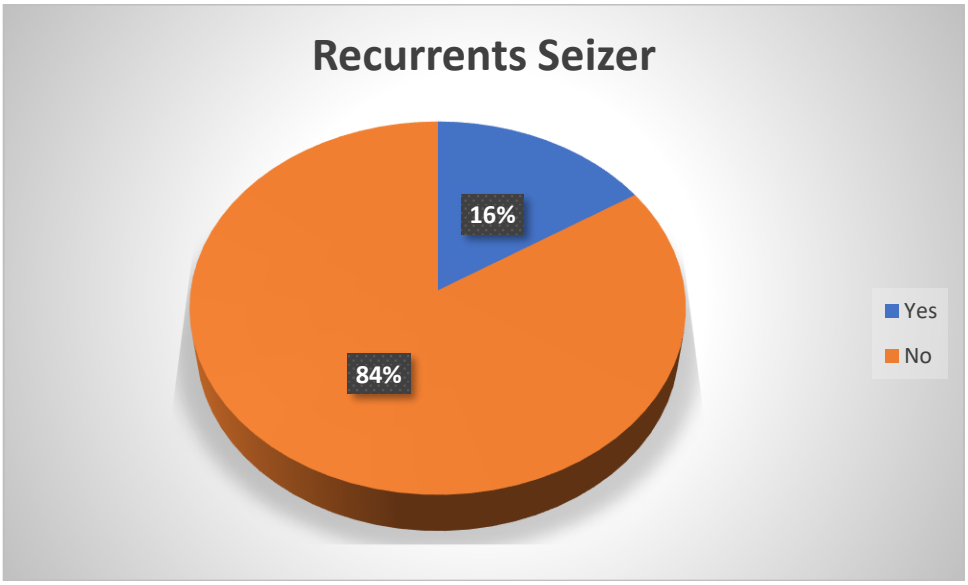


FIGURE 5: SUMMARY OF FETAL OUTCOME

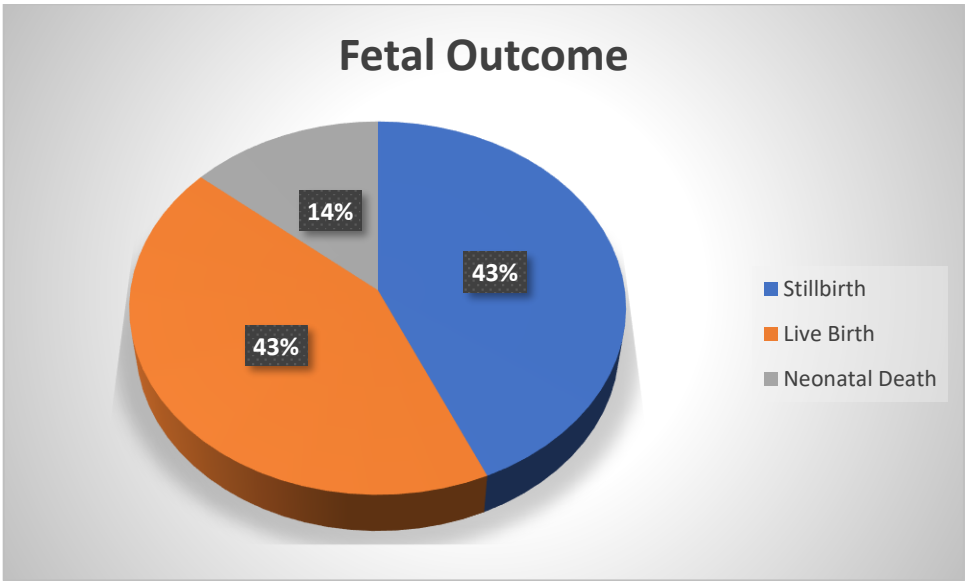


FIGURE 6: SUMMARY OF APGAR SCORE

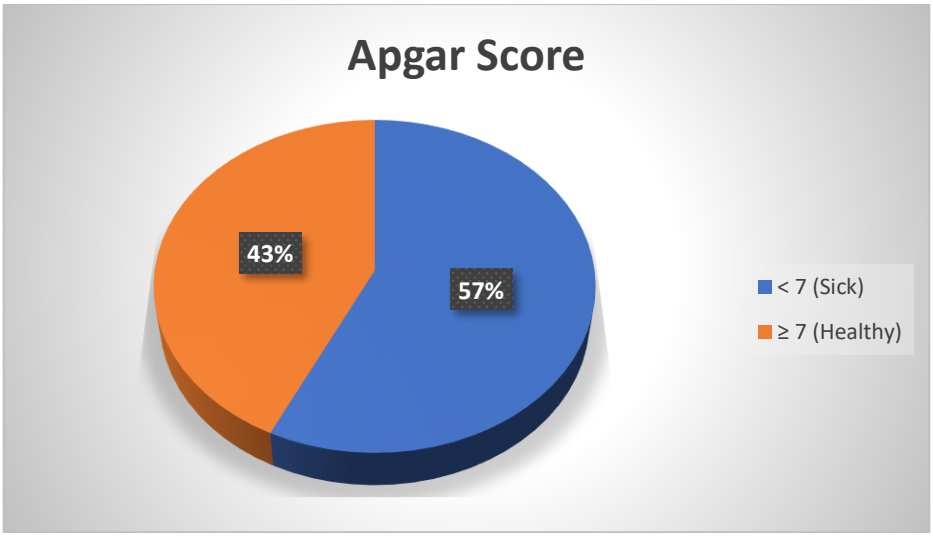
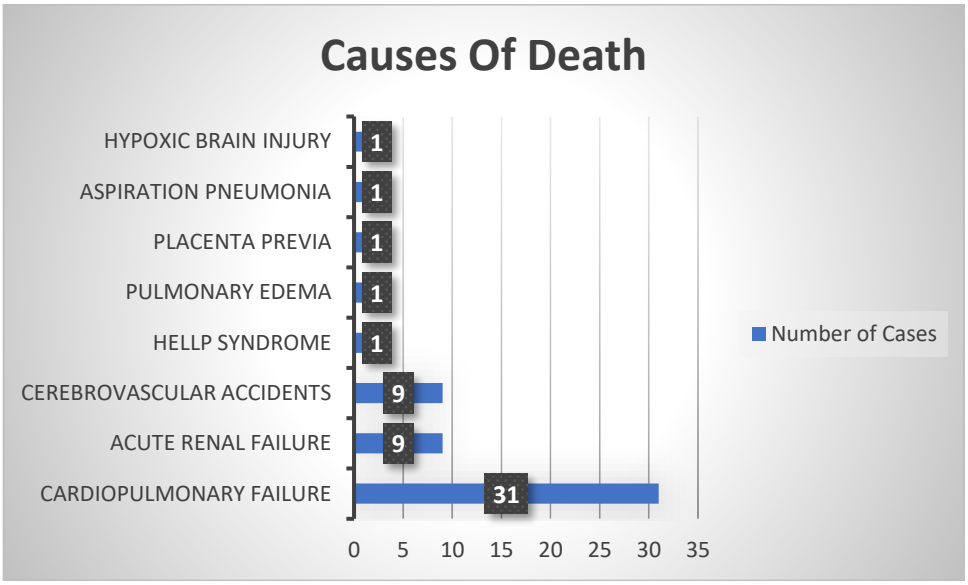


FIGURE 7: SUMMARY OF CAUSE OF DEATH



DISCUSSION

This prospective study lends credence to the fact that antepartum eclampsia is still a major causative agent of maternal and perinatal morbidity and mortality in Pakistani tertiary-care hospitals. ICU admission is common, and maternal deaths—mainly caused by cerebrovascular events and cardiopulmonary insufficiency—reflect those of regional studies[13],[14]. Timely Referral and Early Diagnosis of Case This is one of our data driven recommendations and an important intervention.

Both AN, CC Seizure recurrence was ~16%, and this seizure recurrence is also described in the global literature as being in the region of 15 – 26%, irrespective of the use of magnesium (1, 5⁻11). This highlights ongoing issues related to the availability and management of $MgSO_4$ in public hospitals in Pakistan — a challenge described as a structural problem of policy implementation and supply chains[15].

Perinatal outcome in our cohort was grim: stillbirths, early neonatal deaths, and low Apgar scores were associated with prematurity, placental insufficiency, and fetal distress. Perinatal mortality rates matching those in other comparable low-resource environments (≈25–48%) have been reported [13],[16]. Low Apgar and NICU admissions are common, indicating the importance of enhancing neonatal resuscitation services.

Magnesium sulphate regimens continue as part of the management of eclampsia. In programs operating in low-resource settings (e.g., Nigeria), there have been dramatic reductions in maternal case-fatality—from about 20% to about 2%—as well as perinatal mortality—from about 35% to about 12%—after training staff and providing medications[17].

Conclusion:

Antepartum eclampsia also continues to be a severe life-threatening obstetric emergency with high maternal/perinatal morbidity and mortality particularly in resource depleted environments. High ICU admission rates, maternal mortality, seizure recurrence, stillbirths and neonatal adverse events described in this paper all indicate the high burden of disease. The results highlight the importance of early identification and referral for HDP of pregnancy, standardised management including magnesium sulphate and access to appropriate ICU settings for both mothers and newborns. Reinforcing antenatal care and enhancing community enlightenment is important in curtailing the unfavourable impact associated with antepartum eclampsia. Additional multicenter studies are required to determine independent risk factors and to modify the national guidelines for both prevention and management.

.

REFERENCE

1. World Health Organization. Pre-eclampsia [Internet]. Geneva: WHO; 2025 [cited 2025 Jun 20]. Available from: https://www.who.int/news-room/fact-sheets/detail/pre-eclampsia
2. Bano E, Mahar T, Malhi P, Hashmi S, Soomro A, Khoso S. *Risk Factors of Eclampsia and Its Maternal and Perinatal Effects at a Tertiary Hospital*. Pakistan J Health Sci. 2022 Oct;3(5):194–202.
3. Siddiqi I, Shahid A, Rizvi J, Danish H, Imran M, Shakir M. Maternal deaths due to preeclampsia/eclampsia in Pakistan: A multicentre reproductive health audit. Reprod Health. 2020;17:143.
4. Soomro Q, Shaikh S, Abbasi M, Rajar A, Soomro R. Risk factors and outcomes of eclampsia in tertiary care centres in Sukkur and Islamabad. J Pak Med Assoc. 2023;73(1):45–9.
5. Shaikh F, Abbas S, Balouch I, Talpur S, Yousfani S, Hashmat F. Frequency and outcome of eclampsia. Gomal J Med Sci. 2016;14:200–2.
6. Mor S, Sirohiwal D, Hooda R. Eclampsia: maternal and perinatal outcomes in a tertiary care centre. Int J Reprod Contracept Obstet Gynecol. 2015;4(3):1–5.
7. Rippon HA, Nisa A, Khan N, Sheikh S. Maternal and perinatal outcomes among women with eclampsia in Hyderabad, Pakistan. Int J Gynaecol Obstet. 2013;123(3):247–8.
8. Kansal S, Tambe VS. Maternal and fetal effects of severe preeclampsia/eclampsia: Tertiary hospital data. Int J Obstet Gynecol. 2024;148(1):12–8.
9. Ali S, Agha A, Afridi B. Community-level perceptions of pre-eclampsia and eclampsia in Sindh, Pakistan. Reprod Health. 2016;13:119.
10. Farah D, Nasrullah F. Frequency of pre-eclampsia and eclampsia in un-booked patients at Civil Hospital Karachi. Med Forum. 2022;33(2):134–9.
11. Rashid S, Izhar S, Kadri S, Ghafoor S, Abdullah A. Pre-eclampsia and pregnancy outcome in Karachi: a case–control study. Med Forum. 2021;32(6):104–8.
12. Bilano VL, Ota E, Ganchimeg T, Mori R, Souza JP. Risk factors of pre-eclampsia/eclampsia and its adverse outcomes in low- and middle-income countries: WHO secondary analysis of the WHO Multicountry Survey on Maternal and Newborn Health. PLoS One. 2014;9(3):e91198.
13. Rehman A, Fatima N, Jabeen S. Maternal and perinatal outcomes in eclampsia: Experience at tertiary care hospital in Pakistan. Rawal Med J. 2020;45(3):673–6.
14. Afridi B, Ali S, Begum N. Eclampsia and its outcome at a teaching hospital. J Ayub Med Coll Abbottabad. 2019;31(4):563–6.
15. Tahir S, Khan S, Mahmood T. Magnesium sulfate for eclampsia: efficacy and challenges in a low-resource setting. J Coll Physicians Surg Pak. 2021;31(1):35–9.
16. Singh D, Mehta R. Perinatal outcome in hypertensive disorders of pregnancy: A study in a tertiary care hospital in India. Int J Reprod Contracept Obstet Gynecol. 2022;11(5):1280–4.
17. Okereke E, Ahonsi B, Tukur J, et al. Reducing maternal and perinatal mortality in Nigeria through training and availability of magnesium sulphate. BMC Res Notes. 2012;5:522.