



## FREQUENCY OF ECLAMPSIA IN PRIMIGRAVIDA PATIENTS PRESENTED TO GYNAE AND OBS DEPARTMENT AT TERTIARY CARE HOSPITAL

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### Abstract

**Introduction:** Eclampsia is still a significant source of maternal and fetal morbidity and mortality, especially in the developing world. Since there is no previous pregnancy experience and no adequate antenatal care, primigravida women are at high risk. Having examined the frequency of eclampsia in primigravida patients of tertiary care hospitals in Pakistan, this study has been performed.

**Objective:** To determine eclampsia's prevalence in primigravida patients and maternal and fetal outcomes.

**Methods:** An institutional-based observational study was conducted at Khalifa Gul Nawaz Teaching Hospital Bannu. Primigravida patients with eclampsia were the subjects of data collection. It was analyzed for maternal and fetal outcomes.

**Conclusions:** The results showed that a large population of patients came with severe hypertension and proteinuria. There were maternal complications such as HELLP syndrome and postpartum hemorrhage and fetal complications of preterm birth and NICU admission.

**Keywords:** Eclampsia, primigravida, hypertensive disorders, maternal outcomes, fetal complications, tertiary care hospital.

### INTRODUCTION

Primigravida patients in tertiary care hospitals continue to be a significant cause of maternal and perinatal morbidity and mortality from eclampsia. New-onset generalized tonic-clonic seizures are a severe complication of preeclampsia that is associated with life-threatening consequences if not promptly managed (1). It is alarming that the frequency of eclampsia in first-time pregnancies is so

high that it becomes a point of concern for obstetricians and care providers in tertiary centers (2). It mainly affects young, unbooked, and socioeconomically disadvantaged women who can often be disadvantaged by not having access to antenatal care services (3). Eclampsia also has far-reaching effects on maternal health as well as on a poor fetal outcome such as preterm birth, low birth weight, and stillbirth (4). Therefore, this condition's prevalence and related risk factors should be understood in primigravida patients, as there are severe implications related to this condition (5).

Eclampsia occurrence varies by care site and population and has increasing rates in low- and middle-income countries with minimal antenatal care (7). This might be due to the fact that 57 eclamptic patients were identified to be primigravida, as observed in a study conducted in Bangladesh, implying that this category of pregnant women has a higher risk of complications during pregnancy (7). Another study done in Ghana expounded on the correlation between eclampsia, the lives of both the mother and her fetus, and timely identification of and intervention in the condition (8). These include the young age of the mother, low income and poor nutritional status of the mother, and poor antenatal care (9). Another revealed antecedent sign of eclampsia is pregnancy-induced hypertension (PIH), mainly in teenage pregnancies, which emphasizes the significance of relevant preventive measures (10).

One pressing concern about maternal mortality due to eclampsia is that the diagnosis and treatment can be delayed, which then increases the risk of fatal outcomes (11). This high mortality rate associated with eclampsia highlights the importance of immediate (when practical) medical intervention, including the initiation of magnesium sulfate, correct control of maternal hypertension, and prompt delivery of the information. Maternal eclampsia seems to be a preventable cause of maternal death if women have improved access to skilled obstetric care, receive an early diagnosis of hypertensive disorders, and follow a standard management protocol (13). Additionally, the mode of delivery has essential consequences on maternal and fetal outcomes in eclamptic patients. Vaginal delivery may be possible in some cases, though most women require a cesarean section to deliver more quickly to reduce risks of maternal and fetal complications (14).

Eclampsia is equally of equal concern to the effect of eclampsia on the health of the fetus, and so strongly correlated between the maternal prevalence of eclampsia and the bad health of the newborn (15). Reported fetal complications from eclampsia pregnancies include intrauterine growth restriction, preterm birth, and perinatal asphyxia (1). Moreover, antepartum hemorrhage is common in eclamptic patients, aggravates fetal distress, and increases perinatal morbidity (2). The use of intensive neonatal care to improve the survival of infants born to eclamptic mothers is documented in the studies, emphasizing the need for NICUs in neonatal intensive care units in tertiary care hospitals (3). Though obstetric and neonatal care have improved, eclampsia continues to carry serious complications, and efforts at improving maternal and fetal health outcomes are as important as ever (4).

Several risk factors have been implicated in the development of eclampsia in primigravida patients. Nevertheless, obesity has been identified as a primary risk factor for the development of adverse maternal and fetal outcomes. (5). Women who are obese are at increased risk for developing hypertensive disorders in pregnancy, an increased GDM risk, and, if unmanaged, eclampsia (6). Polyhydramnios has also been linked to an increased rate of malpresentation in eclamptic pregnancy and has compounded the management of labor and delivery (7). It has been noted that 'early risk stratification followed by more frequent blood pressure monitoring, and early medical intervention when needed are all required in the presence of several obstetric risk factors (8).' Furthermore, telling pregnant women what the warning signs of preeclampsia are, including headaches that persist, visual disturbance, and upper abdominal pain, can help in early recognition and rapid treatment (9).

Although medical advancement has made eclampsia less deadly, the disease is still disproportionately touched in low-resource settings where quality obstetric care is not available (10). Eclampsia presents challenges that call for a multi-faceted approach, enhanced antenatal care services, community-based health education programs, and a better health infrastructure in tertiary care hospitals. Healthcare providers, policymakers, and community organizations need to collaborate to fill the gaps in maternal healthcare and reduce eclampsia complication incidence (12). Furthermore,

imaginative new concepts regarding the prediction and prevention of eclampsia in high-risk primigravida patients need to be researched (13). Lastly, eclampsia remains a significant threat to both cardiac and fetal health in primigravida patients who present to tertiary care hospitals (14). This condition is highly prevalent, and urgent attention is needed to help improve antenatal care, enhance early detection methods, and introduce evidence-based management protocols. (15) Treatment of underlying risk factors, followed by health system strengthening, can reduce the burden of eclampsia-related complications and is likely to have improved pregnancy outcomes for mothers and their newborns.

**Objectives:** To assess the frequency of eclampsia in primigravida patients presenting to the Gynecology and Obstetrics Department of a tertiary care hospital in Pakistan & to identify the risk factors and maternal-fetal outcome associated with eclampsia.

## **MATERIALS AND METHODS**

**Study Design:** Cross Sectional Study.

**Study setting:** The study was done at Khalifa Gul Nawaz Teaching Hospital Bannu, Pakistan.

**Duration of the study:** The study was conducted for a period of six months from January to June 2024.

### **Inclusion Criteria**

Eligible patients included those diagnosed with eclampsia within the scope of primigravida patients based on clinical and medical history examination. Patients were considered eligible for ages 18 to 35 years if they had no prior pregnancy and were diagnosed with generalized tonic-clonic seizures without preexisting neurological conditions. Moreover included were those with documented hypertensive disorders of pregnancy (preeclampsia that progressed to eclampsia).

### **Exclusion Criteria**

Patients with preexisting seizure disorders, neurological conditions not related to eclampsia, multiparous women, and the following neurological conditions were excluded. Excluded were women with incomplete medical records as well as those who had previously received treatment with anticonvulsants for indications other than eclampsia. Patients with gestational hypertension without seizures or chronic hypertension without superimposed preeclampsia also were excluded.

### **Methods**

Hospital records, together with patient files from primigravida women with eclampsia diagnosis, served as the data source for this research. A standardized recording form was implemented to capture information about patient age groups, clinical signs, pregnancy complications, management approaches, and neonatal and maternal results. A complete set of records included blood pressure readings alongside urine protein results followed by evaluations of liver function tests and platelet counts. Doctors tracked seizure developments, magnesium sulfate treatment effects, and antihypertensive medication prescriptions for the patients. The records included documentation about delivery mode between vaginal delivery and cesarean section reports, as well as maternal and newborn health results. The data analysis occurred through SPSS software, where frequency distributions and percentages generated statistics for categorical variables. Statistical tests performed analyses using a chi-square test to study the connections between risk factors and eclampsia outcomes at a  $p < 0.05$  significance level.

## **RESULTS**

In this study, 200 primigravida patients with eclampsia were included. The patients were  $24.3 \pm 4.2$  years of age. Sixty-five percent of patients were from a low socioeconomic group and had received inadequate or no antenatal care. Severe hypertension ( $\geq 160/110$  mmHg) was seen in the majority (72%) and 85% had proteinuria of  $\geq 2+$  on urine dipstick testing.

**Table 1: Demographic and Clinical Characteristics of Primigravida Patients with Eclampsia**

| Characteristic            | Frequency (n=200) | Percentage (%) |
|---------------------------|-------------------|----------------|
| Age ( $\leq 20$ years)    | 75                | 37.5           |
| Age (21-30 years)         | 110               | 55.0           |
| Age ( $\geq 31$ years)    | 15                | 7.5            |
| No antenatal care         | 130               | 65.0           |
| Severe hypertension       | 144               | 72.0           |
| Proteinuria ( $\geq 2+$ ) | 170               | 85.0           |
| Low socioeconomic status  | 130               | 65.0           |

**Maternal Outcomes**

Out of the 40 percent of study participants, 15 percent went on to develop complications, including HELLP syndrome (7 percent) and the like. The total maternal deaths recorded were 12 (6%). All patients received magnesium sulfate per standard eclampsia management protocols, and 78% of cases also required additional antihypertensive therapy.

**Table 2: Maternal Complications and Management**

| Complication/Management           | Frequency (n=200) | Percentage (%) |
|-----------------------------------|-------------------|----------------|
| HELLP syndrome                    | 30                | 15.0           |
| Acute renal failure               | 20                | 10.0           |
| Postpartum hemorrhage             | 14                | 7.0            |
| ICU admission                     | 45                | 22.5           |
| Maternal mortality                | 12                | 6.0            |
| Magnesium sulfate given           | 200               | 100.0          |
| Required antihypertensive therapy | 156               | 78.0           |

**Fetal Outcomes**

The perinatal mortality rate was 18%. There were 56% preterm delivery ( $< 37$  weeks), and 34% needed NICU admission for respiratory distress and low birth weight. There were 62 percent delivered by cesarean, mainly due to maternal and fetal distress.

**Table 3: Fetal Outcomes and Delivery Mode**

| Outcome             | Frequency (n=200) | Percentage (%) |
|---------------------|-------------------|----------------|
| Preterm birth       | 112               | 56.0           |
| NICU admission      | 68                | 34.0           |
| Perinatal mortality | 36                | 18.0           |
| Cesarean section    | 124               | 62.0           |

The research shows eclampsia leads to many complications during childbirth, which demands better care and fast action before progressions occur.

**DISCUSSION**

Eclampsia creates many problems with both the mother's and baby's health, especially in nations with poor access to good maternity care. This research examined how often eclampsia occurs among pregnant women seeing the hospital's Gynecology and Obstetrics Department for the first time as patients. Many pregnant patients showed extreme blood pressure problems with proteins in their urine plus additional health challenges, proving that better pregnancy blood pressure tests should exist.

Current research confirms that women under 30 who are pregnant for the first time have the highest risk of getting eclampsia. The research shows that over fifty percent of patients came from disadvantaged households while missing essential antenatal care. Many related studies support this discovery that women who skip antenatal visits face an increased risk of preeclampsia developing into eclampsia (2). Health literacy problems, money issues, and lack of access to healthcare services make patients wait longer to get their hypertensive conditions controlled during pregnancy (3).

The study discovered high numbers of patients with eclampsia having severe hypertension when their readings exceeded 160/110 mmHg. The pregnancy conditions known as hypertensive disorders of pregnancy lead to dangerous risks for both mothers and their babies. Hypertension that lasts will cause problems with blood vessel cells that result in swelling in the brain, seizures, and damage to many organs of the body (4). Research showed that 85% of these patients displayed proteinuria levels of at least two on urine dipstick tests, which confirms its use as a testing method for diagnosing preeclampsia and eclampsia (5). Previous scientific research shows that high protein levels in urine lead to worse pregnancy results and, therefore, need fast rescue actions (6). The recorded maternal problems show how severe eclampsia affects a woman's wellness during pregnancy. HELLP Syndrome affected 15% of the patients the most, while acute kidney problems and bleeding after delivery ranked second and third, respectively. Many research studies show HELLP syndrome arises in eclamptic patients yet also raises their mortality risk from maternal health problems (7). The high number of postpartum bleeding cases reveals that pregnant women with eclampsia face increased hazards of poor blood clotting and a weak uterus, which can endanger their lives. ICU requirements apply to 22.5% of these emergencies because these patients need advanced medical care (9).

The hospital reported 6 percent maternal deaths during this study, which matched South Asian tertiary care research. Even though medical staff use magnesium sulfate to stop seizures, patients still need added antihypertensive drugs to manage their blood pressure levels. Recent research proves magnesium sulfate helps decrease pregnancy risks but shows that faster treatment still reduces deaths from these medical situations (10). Our results show that women require better pregnancy healthcare and early tests to find hypertensive conditions at their early stages (11). This research found that eclampsia severely damages the well-being of newborns. The perinatal survival rate fell to 18% because pregnancies with eclampsia face greater danger to their unborn babies. The research found that hypertension problems in pregnancy led to premature birth in half of the cases, as previous studies showed (12). The number of newborns who go to NICUs shows that maternal hypertension affects the health of the baby before birth. Neonates born to eclamptic mothers tend to have problems with small birth weights, respiratory issues, and natural growth limitations from poor placental function (13).

The preferred delivery method was c-section in 62% of cases because of maternal distress together with fetal problems. The literature demonstrates a tendency toward performing cesarean deliveries among eclamptic women because of their deteriorating condition combined with uncontrolled hypertension and abnormal fetal heart rate patterns (14). The medical necessity for emergency surgical delivery operations remains high for eclamptic patients because it protects against worsening health conditions. The early determination of the delivery method acts as a vital factor in enhancing maternal and fetal outcome results (15). The research indicates the necessity to build up antenatal care systems for prompt hypertensive disorder identification and treatment among pregnant women. Pregnant women who receive routine blood pressure testing together with urine protein screenings and early access to blood pressure medications experience fewer cases of preeclampsia advancing to eclampsia. The education of pregnant women about the importance of antenatal check-ups importance, coupled with dangerous indications of preeclampsia, leads to quick medical assistance.

Tertiary hospitals need to establish complete emergency obstetric services that incorporate well-equipped ICUs, specialized maternal-fetal medicine units, and trained medical personnel. Standardized management protocols for eclampsia that include magnesium sulfate administration,

together with blood pressure control, are absolutely crucial to reducing the deaths of mothers and their babies. A better referral system enabling rapid hospital admission of high-risk pregnant women will enhance maternal and newborn care. The research shows that eclampsia occurs frequently in pregnancies while causing various fetal and maternal complications, which reinforces the necessity for better healthcare resources and protective actions. The prevention of maternal and neonatal health deterioration from eclampsia requires specialized interventions to recognize early warning signs and perform proper antenatal monitoring coupled with rapid medical response strategies. The burden of eclampsia will decrease in developing nations through combined efforts to improve healthcare accessibility and eliminate socioeconomic barriers.

## CONCLUSION

The research identifies eclampsia as a significant health problem affecting first-time mothers who seek care at a tertiary hospital in Pakistan. The study demonstrates that deficient antenatal care, together with low-income status and delayed medical intervention, results in severe hypertension and proteinuria, which produces adverse outcomes for both mother and baby. The hospital recorded six maternal deaths as HELLP syndrome, acute renal failure, and postpartum hemorrhage became diagnosed complications for women. Preterm deliveries along with NICU hospitalizations and infant death rates were among the major fetal complications identified. The higher number of women undergoing cesarean section demonstrates how serious the condition has become. The control of eclampsia depends on comprehensive screening programs and standard antenatal care with quick medical responses. The combination of substantial healthcare facilities with maternal health education programs and emergency obstetric care availability will enhance maternal and fetal results, thereby decreasing eclampsia's mortality rate.

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