Maternal and Perinatal Outcomes in Eclampsia and Severe Preeclampsia at ≥34 Weeks: A Retrospective Case Series with Risk Factor Analysis

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ABSTRACT

Background
Eclampsia remains one of the most severe complications of hypertensive disorders of pregnancy and continues to contribute significantly to maternal and perinatal morbidity, particularly in low- and middle-income countries. Although outcomes are known to improve with advancing gestational age, data focusing on women presenting with eclampsia or severe preeclampsia at ≥34 weeks are limited.

Objectives
To evaluate maternal and perinatal outcomes in women with eclampsia and severe preeclampsia at ≥34 weeks of gestation and to analyze associated clinical risk factors influencing outcomes.

Methods
This retrospective observational case series was conducted at a tertiary care teaching hospital. Women diagnosed with eclampsia or severe preeclampsia at ≥34 weeks of gestation were included. Maternal demographics, parity, gestational age, mode of delivery, ICU admission, maternal complications, and perinatal outcomes were analyzed. Risk factor analysis was performed using descriptive comparisons.

Results
A total of 27 women were included. The mean maternal age was 24.9 years and the mean gestational age was 36.3 weeks. Caesarean section was performed in 55.6% of cases. ICU admission was required in 25.9%. HELLP syndrome and abruptio placentae were the most common maternal complications. NICU admission was required in 22.2% of neonates. There was no maternal or perinatal mortality.

Conclusion
Eclampsia and severe preeclampsia at ≥34 weeks continue to be associated with significant maternal and neonatal morbidity. However, timely obstetric intervention and comprehensive intensive care result in excellent survival outcomes.

Keywords: Eclampsia, severe preeclampsia, maternal outcome, perinatal outcome, ICU admission

I. INTRODUCTION

Hypertensive disorders of pregnancy remain a leading cause of maternal and perinatal morbidity and mortality worldwide [1,2]. Among these, eclampsia represents the most severe manifestation, characterized by new-onset seizures in women with preeclampsia in the absence of other neurological causes [3]. Despite advances

in antenatal surveillance and obstetric care, eclampsia continues to pose a major challenge in developing countries due to delayed presentation, inadequate antenatal care, and limited access to tertiary healthcare facilities [4].

Advancing gestational age is associated with improved perinatal outcomes; however, maternal morbidity may remain significant even at term or near-term gestation [5]. Women presenting with eclampsia or severe preeclampsia at ≥34 weeks frequently require urgent termination of pregnancy and multidisciplinary management [6].

Literature focusing specifically on this subgroup is limited, particularly from low-resource settings. This study aims to evaluate maternal and perinatal outcomes in this cohort and to analyze associated clinical risk factors influencing morbidity.

II. MATERIALS AND METHODS

Study Design and Setting

This retrospective observational case series was conducted in the Department of Obstetrics and Gynaecology at a tertiary care teaching hospital.

Study Population

Women admitted with a diagnosis of eclampsia or severe preeclampsia at ≥34 completed weeks of gestation were included.

Inclusion Criteria:

1)Antepartum, intrapartum, or postpartum eclampsia
2)Severe preeclampsia
3)Gestational age ≥34 weeks

Exclusion Criteria:

1)Gestational age <34 weeks
2)Seizures due to causes other than hypertensive disorders of pregnancy
3)Incomplete medical records

Sample Size

A total of 27 women fulfilled the inclusion criteria and were included in the study.

Data Collection

Data were obtained from labour room registers, inpatient case records, and ICU charts. Maternal variables included age, parity, gestational age, mode of delivery, ICU admission, and maternal complications. Perinatal variables included NICU admission and perinatal mortality.

Statistical Analysis

Data were entered into Microsoft Excel and analyzed using descriptive statistics. Continuous variables were expressed as means and categorical variables as frequencies and percentages. Risk factor analysis was performed using comparative descriptive evaluation.

III. RESULTS

Maternal Demographic and Clinical Characteristics

Table 1. Maternal demographic and clinical profile (n = 27)

Variable	Number (n)	Percentage (%)
Mean maternal age (years)	24.9	—
Mean gestational age (weeks)	36.3	—
Primigravida	13	48.1
Multigravida	14	51.9
Gestational age 34–36^{+6} weeks	15	55.6
Gestational age ≥37 weeks	12	44.4

Mode of Delivery and Maternal Outcomes

Table 2. Mode of delivery and maternal outcomes

Variable	Number (n)	Percentage (%)
Vaginal delivery	12	44.4
Caesarean section	15	55.6
ICU admission	7	25.9
HELLP syndrome	4	14.8
Abruptio placentae	3	11.1
Pulmonary edema	2	7.4
Renal/hepatic dysfunction	2	7.4
Postpartum hemorrhage	2	7.4
Maternal mortality	0	0

Perinatal Outcomes

Table 3. Perinatal outcomes

Outcome	Number (n)	Percentage (%)
Live births	27	100
NICU admission	6	22.2
Stillbirth	0	0
Early neonatal death	0	0
Perinatal mortality	0	0

Risk Factor Analysis

Table 4. Risk factors associated with increased maternal and neonatal morbidity

Risk factor	Observed association
Caesarean delivery	Higher maternal morbidity
ICU admission	Increased maternal and neonatal morbidity
HELLP syndrome	Increased NICU admission
Abruptio placentae	Increased maternal complications
Severe maternal complications	Higher neonatal morbidity

IV. DISCUSSION

The present study evaluates maternal and perinatal outcomes in women with eclampsia and severe preeclampsia at ≥34 weeks of gestation and demonstrates that, despite substantial maternal morbidity, favorable survival outcomes can be achieved with timely intervention. The mean maternal age and parity distribution in this cohort are comparable to findings from other Indian and LMIC studies, where eclampsia predominantly affects young women in their first or second pregnancies [7,8].

Caesarean section was the most common mode of delivery in the present study (55.6%), reflecting the need for expedited delivery in women with uncontrolled hypertension or maternal instability. Similar findings have been reported by Sibai and others, who emphasize that operative delivery is frequently required in severe hypertensive disorders to prevent further maternal and fetal compromise [5,6,9]. These findings are consistent with ACOG Practice Bulletin No. 222, which recommends delivery after maternal stabilization in cases of severe disease [6].

Despite ICU admission being required in nearly one-fourth of patients, no maternal mortality was observed. This contrasts with earlier reports from resource-limited settings where eclampsia continues to be associated with high maternal mortality [4,10]. The absence of maternal deaths in this study likely reflects early seizure control, prompt delivery, and availability of intensive care services [9,10].

HELLP syndrome and abruptio placentae were the most common maternal complications, consistent with previous literature identifying these as major contributors to maternal morbidity in severe preeclampsia and eclampsia [5,7]. Neonatal outcomes were favorable, with no perinatal mortality. NICU admission was required in 22.2% of neonates, comparable to other studies where delivery occurred at or beyond 34 weeks, highlighting the protective role of advancing gestational age [5,8,10].

Risk factor analysis demonstrated that operative delivery, ICU admission, HELLP syndrome, and abruptio placentae were associated with increased maternal and neonatal morbidity, reinforcing the importance of early referral and multidisciplinary management in tertiary care settings [6,9].

Limitations

- Retrospective study design
- Small sample size
- Single-center experience

V. CONCLUSION

Eclampsia and severe preeclampsia at ≥34 weeks remain associated with significant maternal and neonatal morbidity. However, with timely diagnosis, prompt obstetric intervention, and comprehensive maternal and neonatal intensive care, favorable survival outcomes can be achieved. Strengthening referral systems and ensuring institutional delivery remain crucial to improving outcomes of hypertensive disorders of pregnancy.

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Conflict of interest:
None declared.

Ethical Approval:

This study was approved by Institutional Ethics Committee.

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