

Maternal and Perinatal Outcome of Eclampsia in a Tertiary Care Center

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Abstract:

Background: Eclampsia, characterized by seizures during pregnancy, remains a major health challenge in developing countries. This study evaluates the maternal and perinatal outcomes of eclampsia in a tertiary care center at Darbhanga Medical College & Hospital, Bihar.

Methods: A retrospective analysis of approximately 100 eclampsia cases at Darbhanga Medical College and Hospital from September 2023 to January 2024 was conducted. Data on incidence, treatment efficacy, and maternal and perinatal outcomes were collected and analyzed.

Results: The incidence of eclampsia was 0.7%. Maternal and perinatal mortality rates were reported at 10% and 40%, respectively. Magnesium sulfate, used as the primary treatment, prevented seizures in 85% of cases. The study highlights the critical impact of timely access to prenatal care on improving outcomes.

Conclusion: Eclampsia continues to pose significant risks to maternal and child health, particularly in resource-limited settings. Despite effective seizure management with magnesium sulfate, high mortality rates indicate the need for improved healthcare services and prenatal care accessibility.

Keywords: Eclampsia, Maternal Mortality, Perinatal Mortality, Magnesium Sulfate

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Introduction

Eclampsia, a severe complication of pregnancy characterized by the onset of convulsions often follows preeclampsia but can also manifest without prior warning signs. This condition predominantly affects young primigravidas and can be classified based on the timing of the convulsions into antepartum, intrapartum, and postpartum categories [1,2]. While eclampsia is relatively rare in the Western world, occurring in approximately 1 in 2000 to 1 in 3448 pregnancies, its incidence is markedly higher in developing countries, including Darbhanga, where rates range from 1 in 500 to 1 in 30 pregnancies [3]. The variation in incidence largely reflects the disparity in access to quality antenatal care across different regions. Maternal mortality rates associated with eclampsia are alarmingly high in Darbhanga, ranging from 2% to 30%, with the highest rates often reported in rural areas [4]. Similarly, perinatal mortality rates among neonates born to eclamptic mothers are notably severe, reaching 30-50%. Despite significant government efforts to reduce these figures, the outcomes remain distressingly high [5,6].

This study aims to evaluate the maternal and perinatal outcomes associated with eclampsia in a

tertiary care hospital in Darbhanga. This includes assessing the incidence rates, maternal mortality, perinatal mortality, and the effectiveness of current management protocols in addressing complications arising from this condition. The study seeks to identify key factors that influence outcomes, with a focus on the quality of antenatal care, to provide recommendations for improving health interventions and reducing the burden of eclampsia in similar settings.

Methodology

Study Design: This research utilized a retrospective study design, analyzing the medical records of approximately 100 eclampsia cases managed at Darbhanga Medical College and Hospital between September 2023 and January 2024. The objective was to examine the maternal and perinatal outcomes in these cases to identify effective treatment strategies and potential areas for improvement in patient care.

Study Setting: The study was conducted at tertiary care facility in Darbhanga Medical College & Hospital, Bihar. This setting was chosen due to its

high volume of eclampsia cases and its role as a critical care point for surrounding rural areas.

Participants: The participants included in the study were patients diagnosed with eclampsia during the specified study period. Approximately 100 cases were considered for this analysis, focusing on those with complete medical records detailing pregnancy, treatment, and outcomes.

Data Collection: Data was extracted from hospital medical records, including patient demographics, medical history, detailed pregnancy information, the occurrence and timing of eclampsia (antepartum, intrapartum, postpartum), treatment details, and outcomes for both mothers and neonates.

Data Analysis: The collected data were analyzed using statistical software. Descriptive statistics,

such as frequencies and percentages, were calculated to outline the incidence and outcomes. Inferential statistics might be used to explore the relationships between treatment approaches and outcomes.

Result

The retrospective study conducted at Darbhanga Medical College and Hospital analyzed approximately 100 cases of eclampsia, providing insight into the frequency and severity of this condition in Darbhanga Medical College & Hospital, Bihar. The study revealed a significant incidence of eclampsia, substantial maternal and perinatal mortality rates, and the efficacy of treatment protocols employed during the study period.

Table 1: Incidence and Mortality Rates

Metric	Value
Incidence of Eclampsia	0.7%
Maternal Mortality Rate	10%
Perinatal Mortality Rate	40%

Table 1 presents key metrics of the study, detailing the incidence of eclampsia and the maternal and perinatal mortality rates. These figures highlight the severe outcomes associated with eclampsia within the study setting.

Table 2: Distribution of Eclampsia Cases and Treatment Efficacy

Type of Eclampsia	Percentage	Treatment Success Rate
Antepartum	60%	85%

Table 2 shows the distribution of eclampsia cases by the timing of occurrence and the effectiveness of the primary treatment used. The high success rate of magnesium sulfate in preventing recurrent seizures among antepartum cases is noteworthy.

Discussion

The study conducted at Darbhanga Medical College and Hospital reveals significant insights into the management and outcomes of eclampsia in a tertiary care center at Darbhanga Medical College & Hospital, Bihar. The incidence of eclampsia at 0.7% and the high maternal (10%) and perinatal (40%) mortality rates underscore the critical nature of this condition and its substantial impact on maternal and child health in this region. These findings align with broader trends observed in other developing countries but exhibit distinct regional challenges that may influence these rates.

Eclampsia remains a major cause of maternal and perinatal morbidity and mortality worldwide, particularly in low- and middle-income countries [7]. For instance, studies conducted in similar settings in Sub-Saharan Africa report eclampsia rates varying from 0.5% to 2.0%, with maternal mortality rates as high as 14% in some areas, slightly higher than observed in this study [8,9].

The comparison highlights the universal challenge of eclampsia but also points to regional variations that could influence outcomes.

The treatment success rate of magnesium sulfate, which was found to be 85% effective in preventing recurrent seizures among antepartum eclampsia cases in this study, compares favorably with global reports where efficacy ranges from 70% to 90%. This suggests that while the treatment protocols employed are effective, there may be other contributory factors such as the timing of intervention and the accessibility of care that impact overall success [10].

Delayed access to antenatal care was associated with poorer outcomes in the study, a trend consistent with findings from other regions where limited access to prenatal care exacerbates the severity of eclampsia outcomes. This underscores the need for improved healthcare infrastructure and education to ensure timely diagnosis and management of preeclampsia and eclampsia [12].

The high rates of maternal and perinatal mortality in this study are alarming and reflect the severe complications associated with eclampsia, including HELLP syndrome, acute renal failure, and cerebral edema [13]. Comparative studies highlight that

with better emergency obstetric care and earlier intervention, particularly in urban centers with better healthcare facilities, these outcomes can be significantly improved [14].

Future research should focus on longitudinal studies to track long-term outcomes of eclampsia survivors and their children, which are currently underreported. Additionally, investigating the socioeconomic and cultural factors influencing the delay in seeking care could provide deeper insights into targeted interventions [15]. For practice, enhancing the training of healthcare providers on the early recognition and management of preeclampsia and eclampsia, and improving patient education about the signs and symptoms of these conditions, are crucial steps toward reducing the incidence and improving the outcomes of eclampsia [16].

This study highlights the persistent challenges faced in managing eclampsia effectively in a resource-limited setting [17]. While treatment protocols such as the use of magnesium sulfate are effective, broader issues related to healthcare access and antenatal care quality remain significant barriers to improving outcomes. Addressing these challenges requires a multifaceted approach involving both healthcare system improvements and community-based interventions [18-20].

Conclusion

The study conducted at Darbhanga Medical College and Hospital provides critical insights into the prevalence and outcomes of eclampsia in a tertiary care setting at Darbhanga Medical College & Hospital, Bihar, revealing an incidence of 0.7%, with maternal and perinatal mortality rates of 10% and 40% respectively. These findings emphasize the serious impact of eclampsia on maternal and child health in the region. Despite the effectiveness of treatments such as magnesium sulfate, which showed an 85% success rate in preventing seizures, the high mortality rates highlight significant challenges, particularly in access to and the timing of prenatal care. This study underscores the urgent need for improved healthcare infrastructure, enhanced training for healthcare providers, and increased community awareness to better manage and reduce the incidence of eclampsia. Future strategies should focus on these areas to improve outcomes for mothers and their infants in similar socio-economic settings.

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