

ECLÂMPsia: RECONHECIMENTO CLÍNICO, MANEJO EMERGENCIAL E DESFECHOS MATERNOS E PERINATAIS - REVISÃO INTEGRATIVA ECLAMPSIA: CLINICAL RECOGNITION, EMERGENCY MANAGEMENT AND MATERNAL AND PERINATAL OUTCOMES - AN INTEGRATIVE REVIEW

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RESUMO

Introdução: A eclâmpsia é uma emergência obstétrica definida por convulsões de início recente durante a gestação ou o puerpério, sem outra causa explicativa, e permanece associada a complicações maternas e perinatais evitáveis. **Objetivo:** Analisar as evidências sobre reconhecimento clínico, manejo emergencial e desfechos da eclâmpsia. **Método:** Realizou-se revisão integrativa nas bases PubMed, Scientific Electronic Library Online e Literatura Latino-Americana e do Caribe em Ciências da Saúde, com busca em agosto de 2026, prioridade para publicações de 2020 a 2026 e inclusão de estudos clássicos fundamentais. Dez fontes foram selecionadas após leitura de títulos, resumos e textos integrais. **Resultados:** A eclâmpsia pode ocorrer antes, durante ou após o parto, inclusive sem diagnóstico prévio de pré-eclâmpsia. O atendimento deve priorizar proteção, via aérea, respiração e circulação, seguido de sulfato de magnésio para prevenir recorrência, tratamento imediato da hipertensão grave, avaliação materno-fetal e parto após estabilização. A monitorização dos reflexos, frequência respiratória e diurese reduz o risco de toxicidade pelo magnésio. Apresentações atípicas exigem investigação de causas neurológicas, metabólicas, tóxicas ou infecciosas. **Conclusão:** Protocolos objetivos, equipes treinadas, disponibilidade de sulfato de magnésio e vigilância pós-parto são essenciais para reduzir sequelas e mortes.

Palavras-chave: Eclâmpsia. Complicações na Gravidez. Sulfato de Magnésio. Convulsões. Mortalidade Materna.

ABSTRACT

Introduction: Eclampsia is an obstetric emergency defined by new-onset seizures during pregnancy or the postpartum period, without another explanatory cause, and remains associated with preventable maternal and perinatal complications. **Objective:** To analyze the evidence on clinical recognition, emergency management, and outcomes of eclampsia. **Method:** An integrative review was conducted in PubMed, Scientific Electronic Library Online, and Latin American and Caribbean Health Sciences Literature, with a search in August 2026, priority given to publications from 2020 to 2026, and inclusion of seminal studies. Ten sources were selected after reading titles, abstracts, and full texts. **Results:** Eclampsia may occur before, during, or after delivery, including without a previous diagnosis of preeclampsia. Care should prioritize protection, airway, breathing, and circulation, followed by magnesium sulfate to prevent recurrence, immediate treatment of severe hypertension, maternal-fetal assessment, and delivery after stabilization. Monitoring reflexes, respiratory rate, and urine output reduces the risk of magnesium toxicity. Atypical presentations require investigation of neurological, metabolic,

toxic, or infectious causes. **Conclusion:** Objective protocols, trained teams, availability of magnesium sulfate, and postpartum surveillance are essential to reduce sequelae and deaths.

Keywords: Eclampsia. Pregnancy Complications. Magnesium Sulfate. Seizures. Maternal Mortality.

INTRODUCTION

Eclampsia is defined by new-onset generalized tonic-clonic, focal, or multifocal seizures, or unexplained coma, during pregnancy or the postpartum period, after other causes have been excluded. Although frequently associated with preeclampsia with severe features, it may be the first recognized manifestation of the disease and may occur before, during, or after delivery.¹⁻²

Its clinical relevance remains high because it is associated with stroke, cerebral edema, aspiration, renal failure, HELLP syndrome, placental abruption, preterm birth, and maternal or perinatal death. Incidence is uneven: a recent multicenter analysis found 2.2 cases per 10,000 deliveries in high-income countries and 36.6 per 10,000 in Suriname, highlighting the influence of access to prenatal care and timely hospital treatment.²⁻³

Despite existing protocols, gaps persist in individual prediction, recognition of atypical presentations, and postpartum surveillance. Fewer than half of the women in an international cohort had been diagnosed with preeclampsia before the seizure, and approximately one third experienced their first episode postpartum, limiting strategies based solely on classic antenatal signs.³⁻⁶

Given its severity and potentially unpredictable course, this review is justified by the need to consolidate evidence applicable to immediate care. The objective was to analyze scientific evidence on clinical recognition, differential diagnosis, emergency management, complications, and outcomes of eclampsia.

METHOD

This integrative literature review addressed the following question: what evidence guides the recognition and emergency management of eclampsia and the prevention of maternal and perinatal complications? Searches were conducted in August 2026 in PubMed/MEDLINE, Scientific Electronic Library Online (SciELO), and Latin American and Caribbean Health Sciences Literature (LILACS).

The Medical Subject Headings and Health Sciences Descriptors Eclampsia, Magnesium Sulfate, Seizures, Pregnancy Complications, Maternal Mortality, and Emergency Treatment, together with their Portuguese equivalents, were combined with AND and OR. The main strategy was: Eclampsia[MeSH] AND (Magnesium Sulfate[MeSH] OR Seizures[MeSH] OR Emergency Treatment OR Maternal Mortality OR Pregnancy Outcome).

Original articles, reviews, clinical trials, guidelines, and institutional documents in Portuguese, English, or Spanish, published primarily between 2020 and August 2026 and directly addressing eclampsia, were included. Earlier seminal studies were retained when essential to management. Duplicates, isolated case reports, and publications exclusively addressing preeclampsia without separable eclampsia data were excluded. Selection involved titles, abstracts, and full-text review; ten sources were included and synthesized by thematic category.

RESULTS

The selected sources included international documents, guidelines, clinical reviews, a multicenter study, and a randomized trial. Findings were organized into recognition and diagnosis, stabilization and magnesium sulfate, blood pressure control and obstetric management, outcomes, and postpartum care.

Clinical recognition and diagnosis

Severe headache, visual disturbances, hyperreflexia, confusion, epigastric or right upper quadrant pain, nausea, dyspnea, and severe hypertension may precede the seizure but are not present in every patient. The seizure is usually self-limited and followed by a postictal period. High blood pressure and proteinuria are common, but their prior absence does not exclude eclampsia.^{2,4-5}

Diagnosis is clinical and requires simultaneous assessment of glucose, electrolytes, complete blood count and platelets, creatinine, transaminases, bilirubin, and lactate dehydrogenase. HELLP syndrome, acute kidney injury, pulmonary edema, placental abruption, and disseminated intravascular coagulation should be investigated. Epilepsy, hypoglycemia, poisoning, central nervous system infections, stroke, cerebral venous thrombosis, and tumors are key differential diagnoses. Neuroimaging is indicated for focal deficits, prolonged coma, recurrence despite treatment, fever, trauma, or atypical presentation.⁴⁻⁵

Stabilization and magnesium sulfate

During the seizure, the patient should be protected from falls and trauma and placed in a lateral position when possible; objects must not be inserted into the mouth, and the limbs must not be forcibly restrained. After the motor phase, airway, breathing, circulation, oxygen saturation, and level of consciousness take priority. Secretion suctioning, bag-mask ventilation, and intubation may be necessary. Venous access, laboratory tests, urine output

monitoring, and fetal assessment should be arranged, while excessive fluid replacement should be avoided because of the risk of pulmonary edema.^{5,7-8}

Magnesium sulfate is the first-line anticonvulsant and reduces recurrence compared with diazepam or phenytoin. A 4- to 6-g intravenous loading dose over 15 to 20 minutes is generally followed by maintenance at 1 to 2 g per hour, according to institutional protocol. An additional dose may be considered after another seizure; persistent seizures require advanced support and investigation of an alternative cause.^{5,8-9}

The infusion is usually maintained for approximately 24 hours after delivery or the last seizure. Tendon reflexes, respiratory rate, urine output, consciousness, and renal function should be monitored. Hyporeflexia, respiratory depression, or progressive weakness requires discontinuation of the infusion and supportive care; 10% calcium gluconate should be available as an antagonist.^{5,7,10}

Hypertension, delivery, and outcomes

Persistent systolic blood pressure of 160 mmHg or higher or diastolic blood pressure of 110 mmHg or higher should be treated immediately to reduce the risk of stroke. Intravenous labetalol or hydralazine and immediate-release oral nifedipine are usual options, with controlled reduction to avoid hypotension and uteroplacental compromise.^{4,7-8,10}

Eclampsia indicates delivery after maternal stabilization, regardless of gestational age, but does not automatically require cesarean delivery. The route depends on obstetric and maternal-fetal conditions. No procedure should be performed during the seizure or before securing the airway and controlling recurrent seizures and severe hypertension. Transient fetal bradycardia may improve after stabilization; persistence requires investigation of hypoxia and placental abruption.^{2,5,7-8}

Maternal complications include aspiration, pulmonary edema, posterior reversible encephalopathy syndrome, stroke, renal failure, HELLP syndrome, disseminated intravascular coagulation, placental abruption, and death. Fetal and neonatal outcomes include prematurity, low birth weight, acidosis, intensive care admission, and perinatal death. In a 2026 multicenter analysis, approximately 53% of births were preterm.^{2-3,5}

Postpartum period and care gaps

Risk does not end with delivery. Postpartum eclampsia may occur without an antenatal diagnosis, usually within the first few days, although late episodes have been described up to six weeks postpartum. Postpartum headache and visual disturbances require blood pressure

measurement and immediate evaluation. Patients and families should receive written guidance on warning signs and where to seek care.^{3,6,10}

A sustained reduction in morbidity and mortality depends on accessible protocols, trained teams, permanent availability of magnesium sulfate and antihypertensive drugs, transport after stabilization, and surveillance after discharge. Research needs persist regarding prediction, neuroimaging criteria, the minimum effective duration of magnesium therapy, and implementation strategies in resource-limited settings.^{3-4,6,10}

CONCLUSION

Evidence shows that eclampsia is an unpredictable obstetric emergency that may occur before, during, or after delivery and without a previous hypertensive diagnosis. Effective care combines protection during the seizure, stabilization of airway, breathing, and circulation, magnesium sulfate to prevent recurrence, immediate treatment of severe hypertension, maternal-fetal assessment, and delivery after stabilization. Magnesium monitoring and investigation of atypical presentations are essential to reduce toxicity and identify other neurological emergencies.

This review integrates a practical sequence for recognition and management and shows that medication availability must be supported by a prepared care system. Objective protocols, training, safe transport, postpartum surveillance, and discharge guidance may reduce sequelae and preventable deaths. Future studies should improve individual prediction, clarify neurological mechanisms, and evaluate therapeutic regimens and implementation interventions in different settings.

REFERENCES

1. World Health Organization. Pre-eclampsia [Internet]. Geneva: World Health Organization; 2025 [cited 2026 Aug 20]. Available from: <https://www.who.int/news-room/fact-sheets/detail/pre-eclampsia>
2. Fishel Bartal M, Sibai BM. Eclampsia in the 21st century. *Am J Obstet Gynecol*. 2022;226(2 Suppl):S1237-S1253. doi:10.1016/j.ajog.2020.09.037.
3. Salvi S, Mandolini D, Bloemenkamp KWM, Deneux-Tharaux C, Engjom HM, Kodan LR, Korb D, Krištúfková A, Klungsøyr K, Langedock A, Mentzoni CT, McCullough L, Ramakrishnan R, Timme Schaap TP, Seco A, Vandenberghe G, Verschueren KJC, Donati S; INOSS Group. Eclampsia incidence, management and outcomes across multi-country surveillance cohorts: individual participant data meta-analysis. *BJOG*. 2026;133(8):1631-1642. doi:10.1111/1471-0528.70216.

4. Magee LA, Brown MA, Hall DR, Gupte S, Hennessy A, Karumanchi SA, Kenny LC, McCarthy F, Myers J, Poon LC, Rana S, Saito S, Staff AC, Tsigas E, von Dadelszen P. The 2021 International Society for the Study of Hypertension in Pregnancy classification, diagnosis and management recommendations for international practice. *Pregnancy Hypertens.* 2022;27:148-169. doi:10.1016/j.preghy.2021.09.008.
5. Katsi V, Savigkou A, Dima I, Tsioufis K. Diagnosis and treatment of eclampsia. *J Cardiovasc Dev Dis.* 2024;11(9):257. doi:10.3390/jcdd11090257.
6. Hauspurg A, Jeyabalan A. Postpartum preeclampsia/eclampsia: defining its place and management among the hypertensive disorders of pregnancy. *Am J Obstet Gynecol.* 2022;226(2 Suppl):S1211-S1221. doi:10.1016/j.ajog.2020.10.027.
7. American College of Obstetricians and Gynecologists. Gestational hypertension and preeclampsia: ACOG Practice Bulletin No. 222. *Obstet Gynecol.* 2020;135(6):e237-e260. doi:10.1097/AOG.0000000000003891.
8. Katz L, Haddad S, Coutinho I, Parpinelli MA. Atendimento inicial à eclâmpsia [Internet]. São Paulo: Federação Brasileira das Associações de Ginecologia e Obstetrícia; 2018 [cited 2026 Aug 20]. Available from: <https://www.febrasgo.org.br/noticia/atendimento-inicial-a-eclampsia/>
9. Eclampsia Trial Collaborative Group. Which anticonvulsant for women with eclampsia? Evidence from the Collaborative Eclampsia Trial. *Lancet.* 1995;345(8963):1455-1463. doi:10.1016/S0140-6736(95)91034-4.
10. Pecks U, Baumann M, Binder J, Contini C, Dathan-Stumpf A, Dechend R, Enna-Kirchmair B, Fischer T, Girard T, Greve S, Groten T, Hartung A, Kehl S, Koch M, Köbke A, Kranke P, Lapaire O, Mader S, Rump LC, Sperling A, Stepan H, Stracke S, Verlohren S, von Versen-Höynck F, Winkler K, Zemlin M, Schlembach D. Hypertensive disorders in pregnancy (HDP): diagnostics and therapy. Guideline of the DGGG, OEGGG and SGGG (S2k-Level, AWMF Registry No. 015/018, June 2024). *Geburtshilfe Frauenheilkd.* 2025;85(8):810-850. doi:10.1055/a-2522-2347.