

Eclampsia Algorithm

Known or suspected pregnancy
OR
Possible pregnancy within the last 6 weeks

Initial Intervention: Presumed Eclamptic Seizure

- Perform usual seizure patient care
- If pregnant, try to position patient in left lateral decubitus position, head of bed down
- Prepare to initiate medical therapy
- Request immediate obstetric consultation

Administer Magnesium Sulfate
First-line therapy for suspected eclamptic seizure

If no IV access (not available or cannot be established):

- Administer magnesium sulfate intramuscularly (IM) — 10-g loading dose (5 g in each buttock) followed by 5 g IM every 4 hours
- The medication can be mixed with 1 mL of a 2% xylocaine solution to reduce discomfort
- There are no data on IO administration of magnesium sulfate in eclamptic seizures

Magnesium Initial Treatment

- 1) **Loading dose:** 4–6 g IV over 20–30 minutes, then start maintenance dose
- 2) **Maintenance dose:** 1–2 g/h

If altered renal function (creatinine \geq 1 mg/dL), maintenance dosing of magnesium will need to be adjusted. Consult pharmaceutical reference or request guidance from obstetric consultant for specifics.

Persistent or recurrent seizure after magnesium sulfate loading dose:
Continue magnesium sulfate maintenance infusion, administer one of the following medications, and prepare for possible intubation

<p>Preferred next medication class: benzodiazepines</p> <ul style="list-style-type: none"> • Lorazepam 4 mg IV over 3–5 minutes, OR • Diazepam 5–10 mg IV slowly • If no IV access, can administer midazolam 10 mg IM 	<p>If still seizing:</p> <ul style="list-style-type: none"> • Fosphenytoin 20 mg PE/kg IV at 150 mg PE/min 	<p>If persistent,</p> <ul style="list-style-type: none"> • Levetiracetam 60 mg/kg IV, max 4,500 mg • Consider intubation with propofol and consultation with neurology, anesthesia, critical care, or maternal–fetal medicine.
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Resolution of Seizure

- 1) **Assess BP — if SBP \geq 160 or DBP \geq 110, initiate Acute Hypertension Algorithm**
- 2) **OB evaluation ASAP**
- 3) If seizure responds to magnesium sulfate and the patient is maintained on magnesium sulfate (and unable to be urgently transported to an obstetric unit for further evaluation and treatment):
 - a. Continue magnesium sulfate infusion at 1–2 g/h
 - b. Monitor serum magnesium levels every 4 hours (first level at 4 hours after therapy initiated — therapeutic range: 4.9–8.5 mg/dL)
 - c. Observe for possible toxicity (*see Box 1*)
- 4) Maintain magnesium sulfate infusion for at least 24–48 hours after the last seizure or after delivery, whichever is later
- 5) Obtain head CT
- 6) Perform thorough neurological examination to evaluate for focal deficits
- 7) Preparation should be made for delivery, as applicable; mode and timing of delivery depend on obstetric circumstances
- 8) For potential magnesium toxicity:
 - a. **If serum magnesium $>$ 9.6 mg/dL, the infusion should be stopped**
 - b. Re-start when the level decreases to $<$ 8.4 mg/dL
 - c. Calcium gluconate or calcium chloride should be readily available for impending respiratory depression
 - Calcium gluconate: 10% solution, 10 mL (1,000 mg or 1 g) IV over 3 minutes
 - Calcium chloride: 10% solution, 5 mL (500 mg) IV over 5–10 minutes

Box 1

Serum Magnesium Concentration

Range (mg/dL)	Effect
4.9–8.5	Therapeutic range for seizure prophylaxis
8.5–12.2	Loss of deep tendon reflexes
12.2–15.8	Respiratory paralysis
$>$ 18.2	Altered cardiac conduction
$>$ 30	Cardiac arrest

Data from Chau AT. Magnesium toxicity. In: McEvoy MD, Furse CM, editors. Advanced perioperative crisis management. Oxford Academic; 2017. p. 431-5.