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

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 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

If altered renal function (creatinine ≥ 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

Preferred next medication class: benzodiazepines

- **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

If still seizing:

- **Fosphenytoin** 20 mg PE/kg IV at 150 mg PE/min

If persistent,

- **Levetiracetam** 60 mg/kg IV, max 4,500 mg
- Consider intubation with **propofol** and consultation with neurology, anesthesia, critical care, or maternal–fetal medicine.

Resolution of Seizure

1) **Assess BP — if SBP ≥ 160 or DBP ≥ 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

Reference Box 1

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.