PIPADOR REVISION

MRCOG Part 1 Revision Notes

Drugs for Pre-eclampsia and Eclampsia

PHARMACOLOGY • LECTURE 394

VISUAL EXAMINATION REVISION NOTES

2026 Edition

MRCOG PART 1 REVISION NOTES | PHARMACOLOGY

394 Drugs for Pre-eclampsia and Eclampsia

Magnesium sulphate pharmacology, regimens and toxicity, and other drugs in severe pre-eclampsia

$MgSO_4$	4 g → 1 g/h	2–4 mmol/L	Ca gluconate
Prevents & treats eclampsia	Collaborative regimen	Therapeutic level	Antidote

■ KEY FACTS: Learning objectives

- Describe the pharmacology of magnesium sulphate and its regimens.
- Describe toxicity monitoring and management.
- Describe antihypertensives, fluids and other drugs in severe pre-eclampsia and eclampsia.

394.1 Magnesium sulphate

- Mechanism: cerebral vasodilatation, **NMDA receptor antagonism**, ↓ acetylcholine release at the neuromuscular junction, calcium antagonism
  - Superior to diazepam and phenytoin (Collaborative Eclampsia Trial) and halves eclampsia risk (Magpie).
- Indications: eclampsia
  - Severe pre-eclampsia (severe hypertension with symptoms/signs or planned birth)
  - **Fetal neuroprotection < 30 weeks (consider 30–33+6)**.
- Renal excretion — **reduce/stop in oliguria** and check levels.

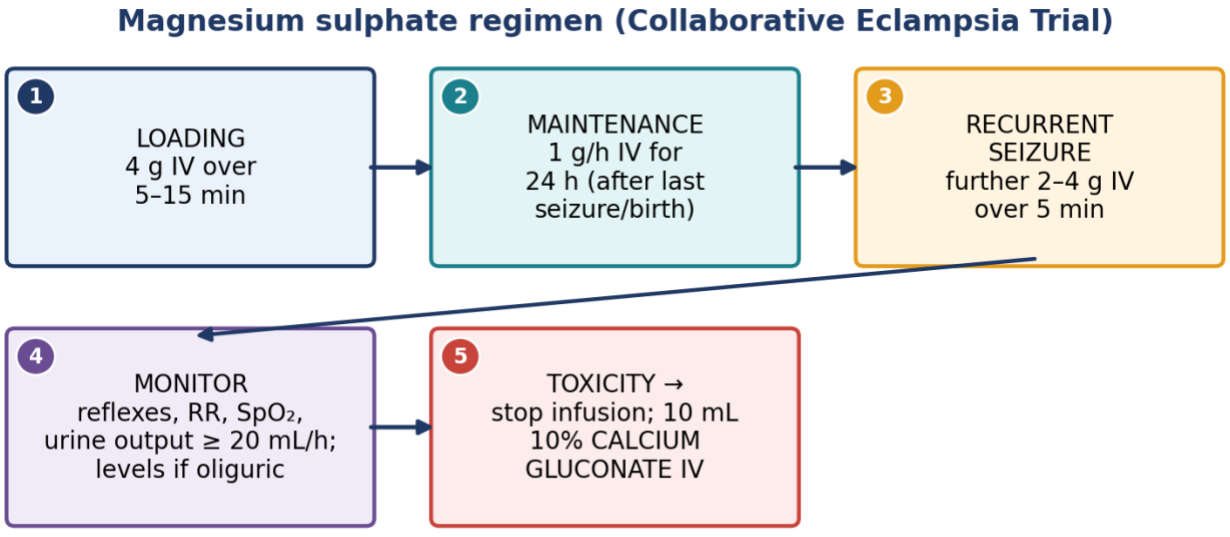


Figure 394.1 — $MgSO_4$ regimen

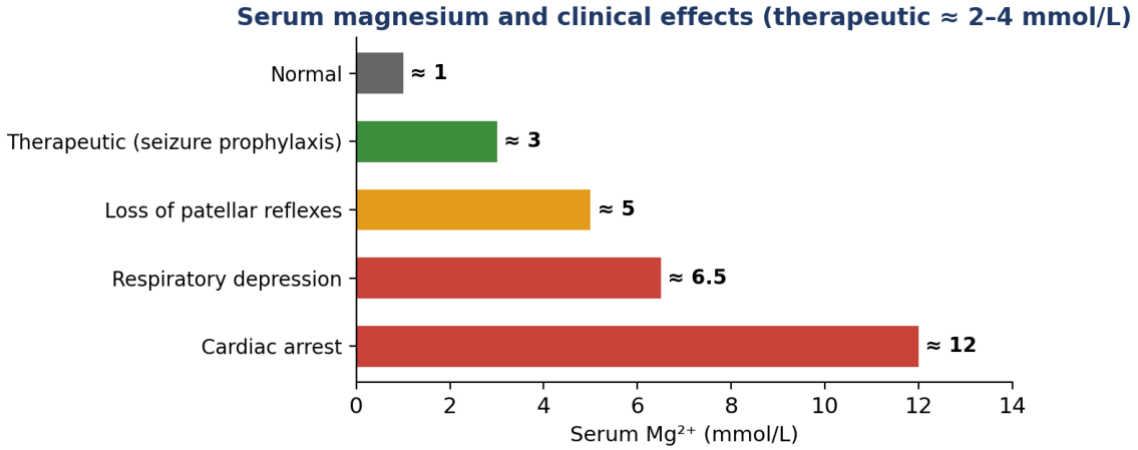


Figure 394.2 — Magnesium levels and effects

394.2 Other drugs and principles

Element	Details
Antihypertensives	• Target < 150/80–100: oral labetalol/nifedipine, IV labetalol, IV hydralazine (fluid preload) • Avoid rapid falls (fetal compromise)
Fluids	Restrict to ≈ 80 mL/h (pulmonary oedema risk)
Seizure management	• ABC, left lateral, O_2, $MgSO_4$ bolus • Do not rush to deliver during seizure — stabilise mother first
Steroids	Antenatal corticosteroids if < 34–35 wk and time allows
Thromboprophylaxis	LMWH after birth (when platelets allow)
Analgesia	• Avoid NSAIDs with renal impairment • Regional anaesthesia if platelets adequate
Interactions	• Nifedipine + $MgSO_4$ → hypotension • $MgSO_4$ potentiates neuromuscular blockers

394.3 Must-know summary

■ EXAM TIP

- $MgSO_4$ 4 g IV over 5–15 min, then 1 g/h for 24 h; recurrent seizure 2–4 g.
- Monitor reflexes, RR, SpO_2, urine output; levels if oliguric (therapeutic 2–4 mmol/L).
- Toxicity: reflexes lost → respiratory depression → cardiac arrest — calcium gluconate 10 mL 10%.
- BP control, fluid restriction ≈ 80 mL/h, stabilise before birth.

■ MNEMONIC / MEMORY AID

Mg toxicity order — 'Reflexes, Respiration, Rhythm'.