

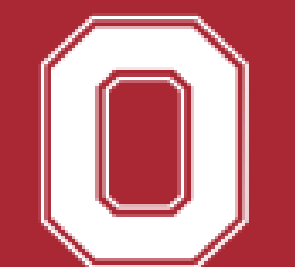
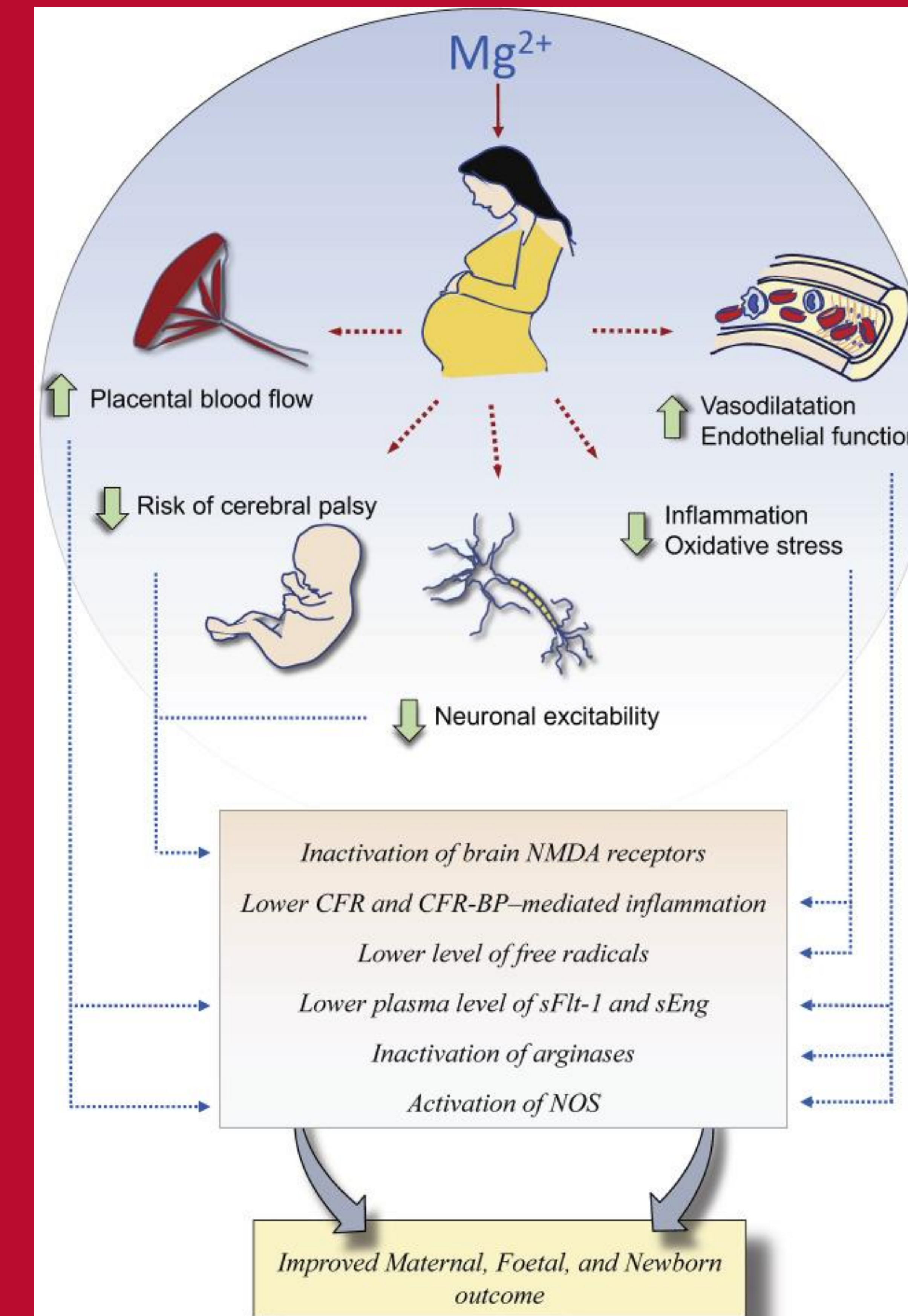
When Magnesium Masquerades: Complexity in Obstetric Anesthesia

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Background

- Magnesium sulfate (Mg) is used for seizure prophylaxis in pre-eclampsia (PreE) and for fetal neuroprotection in preterm deliveries
- Toxicity may be difficult to recognize due to some overlapping side effects with neuraxial block and its complications



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Cases

1: A 45-year-old G5P3013 with twin gestation, chronic hypertension and PreE with severe features (SF) presented for Cesarean delivery (CD) at 32w3d. Mg and spinal anesthesia were initiated concurrently. Pt became profound hypotensive, lost consciousness, and fetal bradycardia, requiring stat CD. Pt awoke after normotension when Mg was discontinued, and vasopressors initiated. Mg was held due to hypotension with its reinitiation and restarted after 2 hours later.

2: A 22-year-old G4P2204 at 30w2d was transferred for CD due to PreE with SF and HELLP syndrome with platelets 46K/uL. Pt received spinal anesthesia while platelet transfusion, and Mg infusion. Postoperatively, bilateral LE weakness developed, concerning for epidural hematoma in setting of thrombocytopenia (platelets 23K/uL). Lumbar MRI was normal. Labs showed Mg of 13.2 mg/dL and showed AKI (Cr increased from 0.69 to 1.5 at time of magnesium lab values check, peaking at 4.5). Weakness resolved within 24 hours of discontinuing Mg. Renal function normalized in 5 days.



Teaching points

- In Case 1, chronic hypertension may impair cardiovascular and renal compensation, increasing susceptibility to Mg toxicity
 - When administered concurrently, Mg has additive smooth muscle relaxant effects, as a nature "calcium channel block", that further exacerbate neuraxial hypotension already induced by spinal anesthesia
- In Case 2, while epidural hematoma is a devastating complication (especially with HELLP-related coagulopathy), HELLP-associated renal failure can precipitate severe hypermagnesemia and neuromuscular blockade, highlighting that Mg can mimic neurologic emergencies and progress rapidly
 - Mg toxicity results in a generalized loss of deep tendon reflexes including in upper extremities, whereas epidural hematoma affects reflexes below the level of the spinal block