Antenatal magnesium sulphate (MgSO\textsubscript{4}) prior to preterm birth for neuroprotection of the fetus, infant and child

When to give MgSO\textsubscript{4}?

- Gestational age < 30 weeks
- Birth planned or definitely expected within 24 hours
- Give MgSO\textsubscript{4} regardless of:
  - plurality
  - parity
  - reason at risk of preterm birth
  - anticipated mode of birth

What/When to administer?
MgSO\textsubscript{4} intravenously using a dedicated intravenous line:
- Commence MgSO\textsubscript{4} as close to four hours before birth as possible.
- Loading: 4g dose (slowly over 20-30 minutes).
- Maintenance: 1g/hour for up to 24 hours or until birth, whichever comes first.

When urgent delivery/birth needed:
- Do not delay delivery to administer MgSO\textsubscript{4}

What if birth does not occur within 24 hours?
- Once 6 hours has transpired following the cessation of the 24 hour maintenance dose, a further loading and maintenance infusion may be considered.

How to monitor women?
- Monitoring is essential for both loading and maintenance doses.
- Monitor pulse, blood pressure, respiratory rate and patellar reflexes: (a) before loading infusion (b) 10 mins after starting infusion (c) after loading infusion is complete (d) every 4 hours during the maintenance infusion.
- Resuscitation and ventilator support should be available during and after administration of both magnesium sulphate and calcium gluconate.

When to stop MgSO\textsubscript{4} administration?
- Urine output <100mL in 4 hours • Absent patellar reflexes • Respiratory depression (< 12 breaths/min) • Hypotension (diastolic BP < 15 mm Hg below baseline).
- If Magnesium toxicity occurs: Stop MgSO\textsubscript{4} infusion and administer antidote of calcium gluconate (10mL of 10% solution slowly intravenously over approx. 10 minutes).

Potential interactions between MgSO\textsubscript{4} and nifedipine may result in hypotension and neuromuscular blockade effects. If such interactions are evident, cease nifedipine and MgSO\textsubscript{4} infusion and seek medical review.

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