



Magnesium sulphate for fetal neuroprotection

Current high-certainty evidence indicates that antenatal magnesium sulphate administered to women at risk of preterm delivery (< 34 weeks gestation) reduces the risk of cerebral palsy and the composite outcome of death or cerebral palsy in children up to two years of corrected age and probably reduces severe intraventricular haemorrhage.¹

Dose

- 4g MgSO₄ in 200ml saline loading dose intravenously over 20 minutes.
 - Thereafter, administer a maintenance infusion of MgSO₄ at 1 g/hour (4g MgSO₄ in 200ml saline administered at 50 ml/hour) until birth or for a maximum of 24 hours, whichever occurs sooner.
- Document in case notes whether MgSO₄ is for fetal or maternal reasons (or both).
- If MgSO₄ is also indicated for maternal treatment (for example, eclampsia or severe pre-eclampsia), continue administration according to the protocol *MgSO₄ administration*

Ward of administration

- Loading dose can be started before referral or in wards F2 or Special Care.
- Maintenance must only be given in labour ward.

Fetal monitoring

- Note that administration of MgSO₄ at an extremely premature gestation does NOT imply that fetal monitoring (CTG) should be offered automatically.
 - Refer to the *Tygerberg Periviable Birth* policy for advice on fetal monitoring.

Repeat dose

- There is no evidence available at present to guide management regarding repeated doses of magnesium sulphate in those patients that do not deliver.
- Consider giving a repeat dose in the event of imminent preterm delivery if 24 hours have elapsed since discontinuing the magnesium sulphate.

Contra-indications

- Electrolyte disorders
- Renal failure (rapidly progressive loss of renal function OR oliguria)
- Maternal cardiac arrhythmia during this pregnancy
- Myasthenia gravis

Observations

- Use the MgSO₄ observation chart in the maternity case record.
- Stop MgSO₄ if patellar reflex is absent, or respiratory rate <12/minute, or urine excretion <100ml in the last 4 hours.

→When urgent delivery is indicated (e.g. abruptio, abnormal fetal heart rate tracing) MgSO₄ can still be given if it does not delay the procedure. In these cases, it is reasonable to administer the 4g loading dose only, without a subsequent infusion.

Further reading

Shepherd ES, Goldsmith S, Doyle LW, Middleton P, Marret S, Rouse DJ, et al. Magnesium sulphate for women at risk of preterm birth for neuroprotection of the fetus - Shepherd, ES - 2024 | Cochrane Library [Internet]. Available from: <https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD004661.pub4/full>

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