

Magnesium sulphate infusion regimen

- In Australia, each 5 mL ampoule of magnesium sulphate contains a 50 % solution (i.e. 2.47 g in each 5 mL)
- Magnesium sulphate for intravenous use should be diluted with sodium chloride 0.9 % to a concentration of 20 % magnesium or less
- The total adult daily dose should not exceed 30 to 40 g of magnesium sulphate
- Continue for 24 hours after the last seizure activity and for 24 hours after birth

Set up

- Make up a 20 % magnesium sulphate solution for intravenous infusion by using 8 ampoules of 5 mL (= approximately 20 g magnesium sulphate) and adding 60 mL of sodium chloride 0.9 % to produce a total solution of 100 mL

Volumetric pump

- Draw up 8 ampoules of 5 mL magnesium sulphate 50 % solution
- Withdraw 40 mL from a 100 mL bag of sodium chloride 0.9 % and discard
- Add the 40 mL magnesium sulphate (approximately 20 g) to the remaining 60 mL bag of sodium chloride 0.9 % to make 100 mL
- Using medication added label write “magnesium sulphate 2 g in 10 mL sodium chloride 0.9 %” and attach label to bag

Administration precautions

- Administration may cause pain and phlebitis.
- ***Use a dedicated intravenous line for magnesium sulphate***
- ***Never inject other drugs into this line***
- ***No more than 8 g of magnesium sulphate should be administered over 1 hour (equivalent to 40 mL of the above 100 mL solution)***

Doses

To prevent eclamptic seizures (i.e. prophylaxis)

- Start at 60 mL / hour to deliver 4 g magnesium sulphate over 20 minutes.
- Do not infuse any more than 20 mL (4 g) over the first 20 minutes and reduce to maintenance dose after 20 minutes
- The maintenance dose is 5 mL / hour (1 g / hour). Continue for at least 24 hours

For eclamptic seizures

- Start at 120 mL / hour to deliver 4 g magnesium sulphate over 10 minutes
- Do not infuse any more than 20 mL (4 g) over the first 10 minutes and reduce to maintenance dose after 10 minutes
- The maintenance dose is 5 mL / hour (1 g / hour). Continue for at least 24 hours
- Infusion of magnesium sulphate at this rate requires:
 - electrocardiogram (ECG) monitoring (continue until condition stable)
 - the presence of an anaesthetist on site

Recurrences of seizures during treatment

- Infuse 2 g (10 mL) IV over 10 minutes (infuse at 60 mL / hour for 10 minutes)
- Once the condition is stable, continue with maintenance at 5 mL / hour (1 g / hour) for at least 24 hours
- Alternatively increase the maintenance infusion rate to 2 g / hour (i.e. 10 mL / hour)
- Check for hyporeflexia and respiration rate
- Plasma magnesium levels may be helpful if changes in dose regimen are frequent
- **No more than 8 g of MgSO₄ should be administered over one hour**

Care during intravenous infusion

- Ensure that the woman is aware that a feeling of warm flushing may be evident during the infusion
- ECG is warranted with high doses of magnesium sulphate (e.g. an infusion rate of 120 mL per hour)
- Monitor blood pressure, respiratory rate, pulse oximeter (SpO₂) hourly
- Check patellar reflexes (minimum every 4 hours). Patellar reflexes should be documented as one of the following:
 - A = Absent
 - N = Normal
 - B = Brisk
- Stop the infusion if patellar reflexes are absent or respiratory rate is less than 10-12 / minute
- Insert indwelling catheter and monitor urine output every hour
- If signs of toxicity occur (hypoventilation, arrhythmia, hypotonia):
 - Call for medical assistance
 - Administer oxygen at 8-12 litres
 - Stop infusion
 - Monitor vital signs
 - Administer calcium gluconate (10 % solution), 10 mL, slowly
 - IV Check electrolytes, creatinine, magnesium sulphate levels