COMPLICATIONS OF PREGNANCY

HYPERTENSION IN PREGNANCY

**MAGNESIUM SULPHATE ANTICONVULSANT THERAPY: LABOUR AND BIRTH SUITE – QUICK REFERENCE GUIDE**

**Keywords**: Magnesium sulphate, MgSO4, anticonvulsant therapy, eclampsia, seizure

This Quick Reference Guide must be used in conjunction with its respective Clinical Guideline, *Magnesium Sulphate Anticonvulsant Therapy*.

The Consultant Obstetrician must be consulted before prescribing and commencing MgSO4 therapy.

**SOLUTION USED AT KEMH**

The solution used at KEMH is 8g of MgSO4 in a 100mL pre packaged solution. This must be given via an infusion device.

**LOADING DOSE**

<table>
<thead>
<tr>
<th>LOADING DOSE REGIMEN</th>
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</thead>
<tbody>
<tr>
<td>Administer intravenous loading bolus dose of 4g of MgSO4 over 20 minutes via a controlled infusion device.</td>
</tr>
<tr>
<td>This equates to an infusion rate of 150mL/hour for 20 minutes (i.e. the woman only receives 50mL).</td>
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</table>

**MAINTENANCE DOSE**

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>The loading dose is followed by a maintenance infusion of 1g of MgSO4 per hour. When the rate is changed to the maintenance rate, the rate shall be checked and confirmed by 2 Registered Nurse / Midwives.</td>
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<tr>
<td>This equates to an infusion rate of 12.5mL per hour. This is continued for at least 24 hours after the last seizure or after the birth of the neonate.</td>
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**TREATMENT FOR SEIZURES WHICH RECUR**

<table>
<thead>
<tr>
<th>TREATMENT FOR RECURRENT SEIZURES</th>
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<tr>
<td>If recurrent seizures occur a further 2 - 4g of MgSO4 is given over 10 minutes.</td>
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<tr>
<td>This equates to an infusion rate of 300 mL/hour for 5 minutes (i.e. the woman receives 25mL of MgSO4).</td>
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</table>

**PRIOR TO COMMENCEMENT OF MAGNESIUM SULPHATE INFUSION**

- Ensure:
  - Deep tendon reflexes (DTR) are present,
  - Respirations are more than 12 per minute,
  - and the urine output is >100ml during the previous 4 hours.
  - The correct order, medication, dose, and infusion rate are checked by 2 Registered Nurse / Midwives; and
  - A set of vital signs, DTR’s, urine output, and conscious state are documented.
CALCIUM GLUCONATE

- **Calcium Gluconate** 1g in 10 mL (2.2mmol Calcium in 10mL) must be available at all times for treatment of MgSO₄ toxicity.⁴
- Dose – administer ONE ampoule of Calcium gluconate 1g in 10mL (2.2mmol calcium in 10mL) intravenously (IV) slowly over 3 to 10 minutes into a large vein⁵
- Electrocardiogram (ECG) monitoring is recommended if Calcium gluconate is given.⁶

MATERNAL AND FETAL OBSERVATIONS

FETAL OBSERVATIONS
Apply continuous fetal monitoring.⁷, ⁸

MATERNAL OBSERVATIONS

Patella reflexes
- Perform every 15 minutes for the first 2 hours, then hourly thereafter.
- If deep tendon reflexes are absent:
  - Cease the infusion.³, ⁹
  - Notify the Medical Officer.
  - Collect blood for serum magnesium levels (therapeutic magnesium concentration range is 1.7 - 3.5 mmol/L).

Respiratory rate and oxygen saturation monitoring
- Monitor respirations 15 minutely during the first 2 hours, then hourly thereafter.
- If respirations are less than 12 respirations/minute:
  - Notify the Medical Officer.
  - Cease the infusion until medical review.
  - Place the woman in the recovery position.
  - Maintain the airway and administer O₂ at 6-8L/minute.
  - Administer IV (Calcium Gluconate 1g in 10mL (2.2mmol calcium in 10mL) slowly. Monitor heart rate with an ECG if available, or apply as soon as possible.
  - Collect blood for serum magnesium levels.
- Apply continuous pulse oximetry. Record O₂ saturation levels hourly.
- If respiratory arrest occurs:
  - Stop infusion.³, ⁹
  - Call a ‘Code Blue Medical’.
  - Initiate respiratory support until the woman is intubated and ventilated.

Monitor urine output
- Measure and record urine output via a urometer bag hourly.⁸
- If urine output is <25mL/hour notify the medical staff.², ⁸

Blood pressure
- Monitor BP 15 minutely during the infusion for the first 2 hours, thereafter hourly.

REVIEW OF MAGNESIUM SULPHATE INFUSION

- Report any side effects of MgSO₄ to the Medical Officer.
- Notify the obstetric staff of any signs of ongoing seizure activity despite MgSO₄.
REFERENCES / STANDARDS


National Standards – 1 - Care Provided by the Clinical Workforce is Guided by Current Best Practice
4 - Medication Safety
9 - Recognising and Responding to Clinical Deterioration in Acute Health Care

Legislation – Poisons Act 1964


Other related documents –
- KEMH Clinical Guidelines Hypertension in Pregnancy; Magnesium Sulphate Anticonvulsant Therapy; Magnesium Sulphate Infusion; Calcium Gluconate
- E-learning: Global Voices: Pre-eclampsia and Eclampsia modules; K2 Pre-eclampsia

RESPONSIBILITY

Policy Sponsor Nursing & Midwifery Director OGCCU
Initial Endorsement November 2003
Last Reviewed December 2014
Last Amended Review date December 2017

Do not keep printed versions of guidelines as currency of information cannot be guaranteed. Access the current version from the WNHS website.