MAGNESIUM
(Oral, IV injection and IV infusion)

This document should be read in conjunction with this DISCLAIMER

Formulary: Unrestricted

HIGH RISK Medication

<table>
<thead>
<tr>
<th>Class</th>
<th>Electrolyte / Mineral</th>
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</thead>
<tbody>
<tr>
<td>Presentation</td>
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<tr>
<td>IV Infusion Bag: Magnesium Sulphate 8g in 100mL WFI (8%) (contains approx. 32mmol Magnesium)</td>
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<tr>
<td>Ampoule: 10mmol/5mL (2.47g MgSO₄ in 5mL) (each 5mL contains 10mmol Magnesium &amp; 10mmol Sulphate ions)</td>
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<tr>
<td>Oral Tablets:</td>
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<tr>
<td>Mag-Sup®: Magnesium aspartate dehydrate 500mg (contains 1.55mmol Magnesium or 37.4mg)</td>
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<tr>
<td>BioMagnesium®: Magnesium oxide - heavy 440mg, Magnesium phosphate 175mg, and calcium ascorbate50mg, pyridoxine B6 50mg, cholecalciferol 2.5microg, manganese 4mg. (contains 12.3mmol Magnesium or 300mg)</td>
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<tr>
<td>Storage</td>
<td>Store at room temperature, below 25°C</td>
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<tr>
<td>Dose</td>
<td>Pre-eclampsia/Eclampsia/Neuroprotection of the Fetus (use 32mmol Infusion Bag)</td>
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<td></td>
<td>IV infusion:</td>
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<tr>
<td></td>
<td>Refer to Hypertension in pregnancy: Magnesium anticonvulsant therapy and Magnesium Sulfate for neuroprotection of the fetus</td>
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<td>Recurrent seizures/eclampsia occurring during prophylaxis (use 32mmol Infusion Bag)</td>
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<td>IV infusion:</td>
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<tr>
<td></td>
<td>Refer to Hypertension in pregnancy: Magnesium anticonvulsant therapy</td>
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<tr>
<td></td>
<td>Advanced Life Support (use ampoules)</td>
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<td>IV injection:</td>
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<tr>
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<td>5mmol (2.5mL) bolus. May be repeated once. An infusion of 20mmol over 4 hours may follow.</td>
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</tbody>
</table>
**Blunting of Pressor Response to Intubation (use ampoules):**

**IV injection:**
5 - 10 mmol (2.5mL to 5mL) as part of induction sequence

**Leg cramps in pregnancy**

**Oral:**
*Magnesium Aspartate (Mag-Sup®):* 2 to 6 tablets daily
*BioMagnesium®:* 1 tablet daily

**Management of Hypomagnesaemia**

Please refer to the [SCGH Hypomagnesaemia guideline](#).

**Administration**

**Oral:** Should be taken with food.

**IV infusion (32mmol infusion bag)**

Infusion must be administered via a controlled infusion device

**IV Infusion (using ampoules):**

**Dilution:** Dilute 5mL in 100mL of Sodium Chloride 0.9%, Glucose 5% or Hartmann’s. Concentration is 25mg/mL (0.1mmol/mL of magnesium)

**Administration:** Infuse over 30 to 60 minutes

**IV Injection:**

**Option A (as per anaesthetics)**

Inject undiluted SLOWLY at a maximum rate of 150mg/minute (0.6mmol/minute of magnesium). For example, 5mL bolus is given over 15 minutes (0.3mmol/minute)

**Option B (to facilitate slow administration)**

**Dilution:** Dilute 5mL ampoule with at least 7.5mL of Sodium Chloride 0.9%, Glucose 5% or Hartmann’s. Concentration is 200mg/mL (0.8mmol/mL of magnesium)

**Administration:** Inject SLOWLY at a maximum rate of 150mg/minute (0.6mmol/minute of magnesium).

Refer to [The Australian Injectable Drug Handbook](#) for more information.

**Pregnancy**

**1st Trimester:** Safe to use

**2nd Trimester:** Safe to use

**3rd Trimester:** Safe to use
<table>
<thead>
<tr>
<th>Breastfeeding</th>
<th>Safe to use</th>
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</table>
| Monitoring    | **IV:** Blood pressure, heart rate, respiratory rate, oxygen saturation, urine output and deep tendon reflexes.  
Cease infusion if:  
- Absent patella reflexes  
- Urinary output <30mL/hour  
- Respiratory depression ≤12 breaths/minute  
- Respiratory arrest  
Monitor for signs of magnesium toxicity: nausea, vomiting, flushing, hypotension, muscle weakness, muscle paralysis, blurred or double vision, CNS depression and loss of reflexes.  
More severe hypermagnesaemia may result in respiratory depression, respiratory paralysis, renal failure, coma, cardiac arrhythmias and cardiac arrest.  
**Treatment of toxicity:**  
- Calcium gluconate 1g/10mL IV over 3-10 minutes  
Concurrent use with **nifedipine** may increase the risk of hypotension |
| Clinical Guidelines and Policies | **KEMH Clinical Guidelines:**  
Hypertension in Pregnancy: Medical Management  
Hypertension in pregnancy: Magnesium anticonvulsant therapy  
Magnesium sulfate for neuroprotection of the fetus  
Preterm Labour  
Recognising and Responding to Clinical Deterioration  
Adult Resuscitation Protocols  
**KEMH Pharmaceutical & Medicines Management Guidelines:**  
KEMH Pharmaceutical & Medicines Management Guideline: Medication Administration  
Injectable Drugs Handbook - Procedure for Reconstitution and Administration of Intravenous Medications |