

Medicines Management & Pharmacy Services (MMPS)

LTHT Paediatric Administration Guide

Intravenous Magnesium

Reference range: Neonate 0.6-1.0mmol/L, Infants, children and adults 0.7-1.0mmol/L,

Dose: Magnesium sulfate 1g = Magnesium 4mmol.

Hypomagnesaemia

Neonate: 0.4mmol/kg (100mg/kg) every 6-12 hours as required.

Child 1-18 years: 0.2mmol/kg (50mg/kg) to a maximum of 4mmol (1g) every 12 hours as required. This dose can be doubled to 0.4mmol/kg (100mg/kg) to a maximum of 8mmol if serum Mg <0.5mmol/L or poor response to initial dose. Higher doses may be required to maintain magnesium serum levels, dose according to response (IV infusion only).

Hypomagnesaemia associated with chemotherapy

0.25mmol/kg (62.5mg/kg) to a maximum of 20mmol once a day. This dose can be doubled to 0.5mmol/kg (125mg/kg) to a maximum of 40mmol once a day if serum Mg <0.3mmol/L.

Severe acute asthma

See [Leeds Paediatric Acute Asthma Guidelines](#)

Products available: Magnesium sulfate 50% 10mL ampoules (equivalent to 2mmol/mL, 5g in 10mL).

Administration: Magnesium sulfate 50% must ALWAYS be diluted before use.

Acute or life threatening symptoms of hypomagnesaemia: Give by slow IV injection over at least 10 minutes (max. rate 0.04mmol/kg/min). Dilute before use to 10% (0.4mmol/mL) or less (1 in 5 dilution i.e. 1mL needs to be diluted to at least 5mL).

Non-urgent situations: Give by IV infusion over 4-6 hours. This maintains a more continuous magnesium level as magnesium is excreted rapidly in the urine. Dose can be added to maintenance fluid or diluted as above.

Hypomagnesaemia associated with chemotherapy: Give by IV infusion. For doses of 0.25mmol/kg (62.5mg/kg) infuse over at least 6 hours and for doses of 0.5mmol/kg (125mg/kg) infuse over at least 12 hours. Dose can be added to maintenance fluid or diluted as above.

Severe acute asthma: See [Leeds Paediatric Acute Asthma Guidelines](#)

Route: Can be administered either via central line or into a peripheral vein.

Diluents: Sodium chloride 0.9%, glucose 5%, glucose 10%

How to prescribe: Prescribe on the LTH prescription chart on the once only section if given as a slow IV injection or on the intravenous fluid prescription chart if added to maintenance fluids. State the dose in mmol, diluent, volume and infusion rate.

Cautions: Incompatible with phosphate and sodium bicarbonate infusions.

Monitor blood pressure, respiratory rate, urinary output and for signs of overdose. May cause flushing, reduce rate if so in non-urgent situations.

References: BNFC 2021, Evelina London Paediatric Formulary, Medusa, Tests and tubes database..

Provenance

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