CALCIUM GLUCONATE

Read in conjunction with Disclaimer

HIGH RISK Medication

Formulary: Restricted	
Presentation	**Vial:** 2.2 mmol/10 mL = **0.22 mmol/mL**
Classification	Electrolyte replacement
Indication	• Hypocalcaemia; including seizures. • Ionised calcium less than 0.65 mmol/L (less than 0.75 mmol/L if symptomatic). • Hyperkalaemia.
Special Considerations	Contraindicated in patients with ventricular fibrillation or hypercalcaemia.
Monitoring	• Serum calcium and ionised calcium concentrations. • Cardiac monitoring during administration. The ECG should be monitored for evidence of hypercalcaemia, bradycardia and other arrhythmias (stop infusion if heart rate is less than 100 beats per minute).
Compatibility	**Fluids:** Sodium chloride 0.9%, glucose 5%, glucose 10%. Refer to KEMH Neonatal Medication Guideline: Y-Site IV Compatibility in Neonates.
Incompatibility	• Coadministration with ceftriaxone sodium injection is **contraindicated** due to the risk of precipitation of ceftriaxone-calcium. • Calcium gluconate can interact with lipid emulsion - not to be given through the same line as TPN and lipids. • Do not mix with any medicine that contains phosphates, carbonates or sulfates. • Do not mix with sodium bicarbonate.
Interactions	**Ceftriaxone:** Intravenous administration of calcium-containing products within 48 to 120 hours of intravenous administration of ceftriaxone may result in damage to the lungs and/or kidneys in neonates. Fatalities in neonates have been reported.
Adverse Effects	**Common:** Abdominal distension, constipation. **Serious:** Extravasation causing tissue necrosis; rapid infusion may cause bradycardia, hypotension and peripheral vasodilation.
Storage & Stability	**Vial:** Store at room temperature, below 30°C. Do not refrigerate. • The solution may precipitate at low temperatures and must be discarded if it is cloudy or contains particles.
Comments	0.22 mmol of calcium = 89 mg elemental calcium = 931 mg calcium gluconate.

INTRAVENOUS INFUSION

URGENT CORRECTION

Presentation	**Vial:** 2.2 mmol/10 mL
Dosage	⚠ **Prescribe calcium salt in full – calcium gluconate. Dose to be expressed as 'mmol'.**
	Urgent correction: 0.22 to 0.44 mmol/kg over 10 minutes. *Doses may be repeated under the direction of the consultant until target calcium level achieved. There is no clear evidence for an upper dose limit in neonates, use caution when exceeding 0.88 mmol/kg per day.*
Preparation	**Urgent correction:** • Draw up 10 mL (2.2 mmol) of calcium gluconate and make up to 20 mL total volume with a compatible diluent. • *Concentration now equal to* **0.11 mmol/mL**. • Measure required dose and discard excess immediately.
Administration	***For intravenous use only*** • Avoid intra-arterial, intramuscular or subcutaneous administration as calcium gluconate is extremely irritant and may cause severe necrosis. • If administering through UVC ensure tip of UVC is not in the heart or liver.
	IV infusion: • Infuse prescribed dose via syringe driver pump over 10 minutes. • For rapid administration, push dose at a rate of 0.23 mmol/minute to reduce the risk of phlebitis/extravasation.
Example	**Example for a 2.9 kg baby:** ***Urgent correction with 0.22 mmol/kg dose*** • 0.22 mmol/kg x 2.9 kg = 0.64 mmol • 0.64 mmol ÷ 0.11 mmol/mL = 5.8 mL to be infused over 10 minutes. Discard excess volume immediately.

INTRAVENOUS INFUSION

MAINTENANCE INFUSION

Presentation	**Vial:** 2.2 mmol/10 mL = **0.22 mmol/mL**
Dosage	⚠ **Prescribe calcium salt in full – calcium gluconate. Dose to be expressed as 'mmol'.**
	Maintenance continuous infusion: 0.44 to 0.88 mmol/kg/day over 24 hours.
Preparation	**Maintenance continuous infusion:** Dilute calculated dose to a final volume of 25mL with a compatible fluid.
Administration	***For intravenous use only.*** • Avoid intra-arterial, intramuscular or subcutaneous administration as calcium gluconate is extremely irritant and may cause severe necrosis. • If administering through UVC ensure tip of UVC is not in the heart or liver.
	IV infusion: Infuse via syringe driver pump at rate of 1 mL/hour.

Related Policies, Procedures, and Guidelines

HDWA Mandatory Policies:

MP 0131/20: WA High Risk Medication Policy

CAHS Neonatology Clinical Practice Guidelines:

Hyperkalaemia Management

Exchange Transfusion

Seizures: Neonatal

Pharmaceutical and Medicines Management Guidelines:

CAHS Neonatology – Medication Administration Guideline

High Risk Medicines

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