CALCIUM GLUCONATE

DESCRIPTION AND INDICATION FOR USE

Calcium gluconate is indicated for use in the following situations:

- as an inotropic agent, to increase the force of cardiac contraction, during cardiopulmonary resuscitation
- treatment of acute calcium depletion (hypocalcaemia)
- treatment of cardiac disturbances caused by severe hyperkalaemia
- correction of hypomagnesaemia

DOSE

HYPOCALCAEMIA

SYMPTOMATIC Hypocalcaemia – Acute Treatment:
IV Bolus: 0.11 mmol/kg (= 0.5 mL/kg)

Hypocalcaemia – Acute Treatment:
IV Correction: 0.44 mmol/kg (= 2 mL/kg)

Hypocalcaemia – Maintenance:
IV Infusion: 1 mmol/kg/day (= 4.5 mL/kg/day)

INOTROPE

IV: 0.1-0.4 mL (10 – 40 mg of 10%)/kg/hr OR 70 mg (0.7 mL) of 10%)/kg/dose

RECONSTITUTION/DILUTION

Ampoule = 100 mg/mL (10%) (0.22 mmol/mL Ca)

IV Bolus and Correction: Dilute to 20 mg/mL (= 0.044 mmol/mL)

1. Draw up 1 mL of calcium gluconate 10%
2. Add to 4 mL of glucose 5% or 10% to give a final volume of 5 mL
   Concentration = 0.22 mmol in 5 mL (= **0.044 mmol/mL**)

IV Infusion for Maintenance: Withdraw required dose and make up to ordered volume of infusion solution with dextrose 5% or 10%

Not for IM or SC use as tissue necrosis and sloughing may occur.

ROUTE AND METHOD OF ADMINISTRATION

It is strongly recommended to administer calcium gluconate via a large vein. Do NOT administer into a scalp vein, or small hand or foot vein.

IV Bolus: give slowly over 30 minutes via syringe pump
NB: for more rapid administration, infuse at a maximum rate of 100 mg/min **(only via central line)**

IV Correction: give slowly over 6 hours via syringe pump

IV Infusion: give as a continuous infusion via syringe pump

COMPATIBILITY INFORMATION

Please contact your ward pharmacist for information on drugs or fluids not appearing in the table below. Medications that are not routinely used in the Special Care Nursery have not been included in this table and may be incompatible.

	Compatible	Incompatible
Fluids	Dextrose 5%, Dextrose 10%, Dextrose 20%, 0.9% Sodium chloride	
Drugs	Aminophylline, Benzylpenicillin, Frusemide, Heparin, Vancomycin	Amphotericin, Digoxin, Dobutamine, Flucloxacillin, Sodium bicarbonate

SIDE EFFECTS

- Venous irritation, extravasation, necrosis
- Rapid IV injection may cause vasodilatation, bradycardia, hypotension, arrhythmias, cardiac arrest

SPECIAL PRECAUTIONS

- Calcium salts are irritant therefore care must be taken to prevent extravasation during IV infusions
- Hypercalcaemia may be more dangerous than hypocalcaemia therefore care must be taken to avoid over-treatment
- ECG monitoring is required during IV treatment for severe hypocalcaemia

CONTRAINDICATIONS

- Avoid use in hypercalcaemia, hypercalciuria or severe renal disease
- Avoid administration via the intramuscular and subcutaneous routes

DRUG INTERACTIONS

Cardiac Glycosides (eg: Digoxin):
Serious risk of arrhythmias and cardiovascular collapse, especially if calcium is given by rapid IV injection

Ceftriaxone:
IV calcium and ceftriaxone must NOT be administered within 48 hours of each other via the SAME or DIFFERENT infusion lines

NURSING RESPONSIBILITIES

- Observations/Monitoring:
  - Observe intravenous site for inflammation and extravasation, remove immediately if occurs
  - Monitor serum calcium levels
  - ECG monitor during treatment for severe hypocalcaemia and when giving bolus doses
- Ensure slow intravenous administration to avoid extravasation and cardiac side effects
- If administering as a continuous infusion – ensure infusion solution is changed every 24 hours
- Observe solution and complete length of infusion line for precipitation (haziness)