

Calcium is required for normal cardiovascular function

Indications

Calcium channel blocker toxicity
Hypocalcaemia secondary to ethylene glycol toxicity
Hydrofluoric Acid (HF) local or systemic toxicity
Hyperkalaemia
Hypermagnesemia

Contraindications:

Existing hypercalcemia

Adverse effects:

Local tissue irritation / phlebitis
Systemic toxicity is characterised by vasodilation,
myocardial depression, arrhythmias
Rapid IV administration may cause bradycardia

Presentation

Calcium gluconate 1 gram in 10 mL vial (0.22 mmol of calcium per mL)

May be given neat or diluted in 5% dextrose, sodium chloride 0.9%, Compound Sodium Lactate (CSL)

Dose and Administration – DO NOT MIX WITH OTHER DRUGS as Ca²⁺ may precipitate out of solution

Calcium channel blocker toxicity with cardiovascular compromise:

- 30 mL Ca²⁺ gluconate (3 grams, 6.6 mmol) bolus IV over 5-15 minutes
- This bolus can be repeated every 20 minutes to obtain an ionized Ca²⁺ concentration of 1.5-2.0 mmol/L
- Ca²⁺ infusion: Ca²⁺ gluconate (1 gram in 10 mL vial) in 100 mL of sodium chloride 0.9% or 5% dextrose
- Commence infusion at 50 mL/hour (0.5g/hour), measure ionized Ca²⁺ 1-2 hourly
- Aim to maintain ionized Ca²⁺ concentration of 1.5-2.0 mmol/L

Hypocalcaemia / Hyperkalaemia / Hypermagnesemia:

- 20-40 mL Ca²⁺ gluconate (2-4 grams, 4.4-8.8 mmol) IV over 5-15 minutes
- Repeat as required as guided by electrolyte concentrations

HF acid skin exposure:

- See HF Acid guideline

HF exposure with systemic fluorosis:

- Initially administer: 30 mL Ca²⁺ gluconate (3 grams, 6.6 mmol) bolus IV over 5-15 minutes
- See HF Acid guideline

Pregnancy:

- No contraindication to administration