

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 Ca<sup>2+</sup> may precipitate out of solution**

### **Calcium channel blocker toxicity with cardiovascular compromise:**

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

### **Hypocalcaemia / Hyperkalaemia / Hypermagnesemia:**

- 20 - 40 mL Ca<sup>2+</sup> 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 Ca<sup>2+</sup> gluconate (3 grams, 6.6 mmol) bolus IV over 5-15 minutes
- See HF Acid guideline

### **Pregnancy:**

- No contraindication to administration