

CALCIUM GLUCONATE 10%

PHARMACOLOGY & MECHANISM OF ACTIONS:

- ❑ Electrolyte salt
- ❑ Antidote
- ❑ Calcium is essential for nervous, muscular and skeletal system functions. Calcium in its ionic (dissolved) state carries a very positive charge. This charge causes the cell membrane to be stable. If the calcium is too low neurons and cardiac cells have a decreased threshold for activation resulting in tetany. Therefore, Calcium causes a significant increase in myocardial contractile force and appears to increase ventricular automaticity. It also increases excitability of muscle fibers. Calcium Gluconate is less potent and less irritating to veins than Calcium Chloride.

INDICATIONS:

- ❑ A renal failure/dialysis patient presenting with marked weakness, respiratory insufficiency, widened QRS complex, and small or absent P waves. Sine waves may also be present.
- ❑ Patients suffering from calcium channel blocker overdose
- ❑ Patients exposed to hydrogen fluoride (hydrofluoric acid)

CONTRAINDICATIONS:

- ❑ Allergy to calcium chloride
- ❑ Hypercalcaemia
- ❑ Digitalis toxicity
- ❑ Patient taking digoxin
- ❑ Bradycardia
- ❑ Ventricular Fibrillation

ADMINISTRATION:

ADULT	PEDIATRIC
<div style="display: flex; justify-content: space-between;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg); background-color: red; color: white; padding: 5px; font-weight: bold;">PARA MEDIC</div> <div style="flex-grow: 1;"> <p><i>HYPERKALEMIA IN RENAL FAILURE/DIALYSIS PATIENT:</i></p> <ul style="list-style-type: none"> ❑ 10 mL of 10% solution IV over 5 minutes <p><i>CALCIUM CHANNEL BLOCKER OVERDOSE</i></p> <ul style="list-style-type: none"> ❑ 10 mL of 10% solution IV over 5 minutes <p><i>HYDROGEN FLUORIDE OPTICAL EXPOSURE</i></p> <ul style="list-style-type: none"> ❑ Flush eyes with 10 mL of 10% Calcium Gluconate in 1000 mL NS in 60 mL Syringe via Morgan Eye Lens (irrigate with 500 mL NS). <p><i>HYDROGEN FLUORIDE INHALATION EXPOSURE</i></p> <ul style="list-style-type: none"> ❑ Mix 1 mL of 10% Calcium Gluconate with 3 mL NS (sterile water) in nebulizer and administer to patient <p><i>MILD TO MODERATE HYDROGEN FLUORIDE SKIN EXPOSURE</i></p> <ul style="list-style-type: none"> ❑ Mix 2 mL (10 mL) of 10% Calcium Gluconate per 1 ounce KY jelly and coat and massage affected area </div> <div style="writing-mode: vertical-rl; transform: rotate(180deg); background-color: red; color: white; padding: 5px; font-weight: bold;">PARAMEDIC</div> </div>	<div style="display: flex; justify-content: space-between;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg); background-color: red; color: white; padding: 5px; font-weight: bold;">PARA MEDIC</div> <div style="flex-grow: 1;"> <p><i>HYDROGEN FLUORIDE OPTICAL EXPOSURE</i></p> <ul style="list-style-type: none"> ❑ Flush eyes with 5 mL of 10% Calcium Gluconate per 40 mL NS in 60 mL Syringe via Morgan Eye Lens <p><i>HYDROGEN FLUORIDE INHALATION EXPOSURE</i></p> <ul style="list-style-type: none"> ❑ Mix 1 mL of 10% Calcium Gluconate with 3 mL NS in nebulizer and administer to patient <p><i>MILD TO MODERATE HYDROGEN FLUORIDE SKIN EXPOSURE</i></p> <ul style="list-style-type: none"> ❑ Mix 2 mL of 10% Calcium Gluconate per 1 ounce KY jelly and coat and massage affected area </div> <div style="writing-mode: vertical-rl; transform: rotate(180deg); background-color: red; color: white; padding: 5px; font-weight: bold;">PARAMEDIC</div> </div>

CALCIUM GLUCONATE 10% (CONTINUED)

PRECAUTIONS & SIDE EFFECTS:

- Cardiac arrest
- Bradycardia
- Arrhythmias
- Syncope
- Nausea
- Vomiting
- Diaphoresis
- Tingling sensations
- Local irritation in injection site
- Associated with rapid rate of injection:
 - Peripheral vasodilatation
 - Hypotension
 - Bradycardia

SPECIAL NOTES:

- Calcium is indicated for treatment of acute hyperkalemia (elevated potassium) and acute hypocalcaemia (decreased calcium), both of which can occur in patients with renal failure and those receiving dialysis treatment.
- Can cause necrosis at the IV site. Use in a patent, well flowing IV line.
 - **Do not mix with Sodium Bicarbonate.**
- May produce vasospasm in coronary and cerebral arteries.
- If the heart is beating, rapid administration may cause bradycardia or cardiac arrest. Push slowly in patients with a pulse.