Calcium Chloride

MEDICATION

THE DRUG

Class: Ionic Compound

Mechanism: dissociates in water to provide calcium (Ca2+) and chloride (Cl−) ions — normal body-fluid constituents, balanced by intake and output

USE IT FOR

- Hyperkalemia / hypocalcemia
- Calcium channel blocker overdose (verapamil, nifedipine)
- Abdominal muscle cramping associated with spider bite
- Antidote for magnesium sulfate

DON'T GIVE / CAUTION

- Not to be used in treating ventricular fibrillation, or in patients on digitalis
- Patent IV line required
- Flush between administration of calcium chloride and sodium bicarbonate

DOSE

Adult: **1 gram IV/IO — refer to Handtevy for accurate dosing**

Peds: **Refer to Handtevy**

WATCH FOR

- CNS: dizziness, syncope, tingling
- Cardiovascular: arrhythmias, hypotension
- Dermatologic: tissue necrosis at the injection site
- GI: nausea, vomiting; endocrine: hypercalcemia; neuromuscular: tremors, weakness; renal: kidney stones

PEARLS

- Hypocalcemia signs: carpopedal spasm, tetany, Chvostek and Trousseau signs, QTc prolongation, seizures
- Hyperkalemia ECG: peaked T waves, prolonged PR, widening QRS, loss of P wave, sine wave
- CCB overdose picture splits into 'pump problem' (non-dihydropyridines: bradycardia, heart blocks) and 'pipe problem' (dihydropyridines)

Take Home Message:

Calcium chloride is the antidote drug — hyperkalemia, hypocalcemia, calcium channel blocker overdose, and magnesium toxicity — 1 gram IV/IO through a patent line.