Medical Control Guideline: DRUG REFERENCE – CALCIUM CHLORIDE **Ref. No. 1317.11**

Classification

Electrolyte

Prehospital Indications

Cardiac Arrest – Non-Traumatic: suspected hyperkalemia, patients with renal failure
Cardiac Dysrhythmia: suspected hyperkalemia causing bradycardia
Overdose / Poisoning / Ingestion: calcium channel blocker toxicity
Traumatic Injury: suspected hyperkalemia in the setting of crush injury or potential for development of crush syndrome (administer prior to release of crushed tissue)

Other Common Indications

Acute hypocalcemia with or without tetany
Topically for hydrofluoric acid burns
Calcium channel blocker overdose

Adult Dose

Cardiac Arrest
1gm (10mL) IVP/IO
Cardiac Dysrhythmia/Crush - Suspected hyperkalemia
1gm (10mL) slow IV/IO push, may repeat x1 for persistent symptoms / ECG abnormalities
Overdose / Poisoning / Ingestion - Suspected Calcium Channel Blocker Overdose
1g (10mL) IV slow push over 60 seconds

Pediatric Dose

Crush - Suspected hyperkalemia
20mg/kg (100mg/mL) slow IV/IO push, dose per *MCG 1309*, repeat x1 for persistent ECG abnormalities
Overdose / Poisoning / Ingestion - Suspected Calcium Channel Blocker Overdose
20mg/kg (100mg/mL) IV slow push over 60 seconds, dose per *MCG 1309*

Mechanism of Action

Essential regulator for the excitation threshold of nerves and muscles; causes significant increase in myocardial contractility and ventricular automaticity. Antidote for some electrolyte imbalances and calcium channel blocker toxicity.

Pharmacokinetics

Onset and peaks immediately, duration varies

Contraindications

Hypercalcemia
Ventricular fibrillation

Interactions

Inactivates or minimizes the effects of catecholamines if not flushed properly
Can cause cardiac standstill in patients taking Digoxin

Adverse Effects

Cardiac arrest
Hypotension or hypertension
Pain and burning at injection site
Tingling sensations

Prehospital Considerations

- Precipitates to form calcium carbonate (chalk) when used with sodium bicarbonate. Administer calcium chloride and sodium bicarbonate in separate IV/ IO or thoroughly flush in between administrations using at least 10mL of normal saline
- Confirm IV is patent prior to administration as extravasation causes severe tissue necrosis