9. CALCIUM CHLORIDE (10% SOLUTION)

a) Pharmacology

(1) Increase cardiac contractile state and ventricular automaticity
(2) Is useful in reversing cardiac arrhythmias due to hyperkalemia (often seen in renal dialysis patients)

b) Pharmacokinetics

Rapid onset of action with IV administration

c) Indications

(1) Hyperkalemia
(2) Hypocalcemia
(3) To treat adverse effects caused by calcium channel blocker overdose
(4) Hypotension secondary to diltiazem administration
(5) Respiratory depression, decreased reflexes, flaccid paralysis, and apnea following magnesium sulfate administration

d) Contraindications

(1) Not indicated in cardiac arrest except when hyperkalemia, hypocalcemia, or calcium channel toxicity is highly suspected
(2) Patient currently taking digoxin with suspected calcium channel blocker overdose

e) Adverse Effects

(1) Bradycardia may occur with rapid injection.
(2) Syncope, cardiac arrest, arrhythmia, bradycardia

f) Precautions

(1) Use with caution on patients taking digitalis, as calcium may increase ventricular irritability and precipitate digitalis toxicity.
(2) If given with sodium bicarbonate, calcium will precipitate.
(3) Calcium salts may produce coronary and cerebral artery spasm.

g) Dosage

(1) Adult: Administer 0.5–1 gram SLOW IVP over 10 minutes.
Maximum dose 1 gram
Administer 500 mg SLOW IVP for: hypotension following diltiazem administration.
Respiratory depression, decreased reflexes, flaccid paralysis, and apnea following magnesium sulfate administration
(2) Pediatric: Administer 20 mg/kg (0.2 mL/kg) SLOW IVP/IO (50 mg/min)
Maximum dose 1 gram