



REGIONAL PEDIATRIC PARENTERAL DRUG MONOGRAPH

GENERIC NAME

calcium gluconate



Effective Date: Nov19-2014	CLASSIFICATION Electrolyte	OTHER NAMES	PAGE 1 of 2
Revised Date: September 2022			

ADMINISTRATION POLICY: (see required monitoring in "Additional Notes")

IV/IO bolus: - Administration restricted to nurses under direct supervision of prescriber

IV/IO infusion: - May be administered by a nurse

IV/IO intermittent: - May be administered by a nurse

IM/Subcut: - *Not recommended*

RECONSTITUTION/DILUTION/ADMINISTRATION:

Available as: 100 mg/mL – 10 mL vial
100 mg calcium gluconate = 9.3 mg elemental calcium = 0.23 mmol (0.47 mEq) elemental calcium

IV bolus: Administer undiluted or dilute with equal volume of diluent and administer over 5 minutes.

Intermittent: Infuse over 30 to 60 minutes.

DOSE	DILUENT (normal saline)
Less than 300 mg	Prepare a 20 mg/mL solution: 1. Remove 9 mL from 25 mL normal saline minibag 2. Add 4 mL (400 mg) calcium gluconate 100 mg/mL 3. Final volume 20 mL
300 to 1000 mg	25 to 100 mL
1001 to 3000 mg	50 to 100 mL

IV infusion: Utilize pump and program manually (volume-time)

Calcium gluconate 100 mg/mL	Diluent Volume (normal saline)	Final concentration	Final Volume
50 mL (5000 mg)	500 mL	9.091 mg/mL	550 mL
100 mL (10000 mg)	1000 mL	9.091 mg/mL	1100 mL

DOSAGE: Titrate doses to serum calcium concentration. Doses expressed as calcium gluconate, NOT elemental calcium.

Resuscitation: IV bolus, IO: 20 to 100 mg/kg/dose (0.2 to 1 mL/kg/dose) every 10 minutes as required (maximum 3000 mg/dose)

Hypocalcemia, treatment: *Mild to moderate symptoms:*
IV intermittent: 29 to 60 mg/kg/dose every 6 hours OR
IV infusion: 8 to 13 mg/kg/hour
Severe symptoms (i.e. seizures, tetany):
IV/IO bolus: 100 to 200 mg/kg/dose over 5 to 10 minutes, maximum dose 1000 to 2000 mg/dose; may repeat as needed OR follow
with
IV infusion: 8 to 32 mg/kg/hour

Hyperkalemia: *Adjunctive treatment:*
IV/IO bolus: 60 to 100 mg/kg/dose, maximum 2000 mg/dose, may repeat if necessary



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Beta-blocker or Calcium channel blocker toxicity, hypotension/conduction disturbances:
 IV intermittent: 60 mg/kg/dose over 30 to 60 minutes, maximum 3000 mg/dose OR
 IV/IO bolus: 60 mg/kg/dose over 5 to 10 minutes, repeat doses every 10 to 20 minutes up to 3 to 4 doses as needed

Maximum concentration:
 IV bolus: 100 mg/mL (0.23 mmol/mL)
 IV Intermittent: 50 mg/mL (0.12 mmol/mL)
 IV Infusion- peripheral: 10 mg/mL (0.023 mmol/mL)
 IV Infusion – central: 20 mg/mL (0.046 mmol/mL)

Maximum rate:
 IV bolus: over 5 minutes
 IV intermittent: 100 mg/minute
 IV Infusion: indication specific

STABILITY/COMPATIBILITY:

Stability of final admixture: 24 hours at room temperature

Compatibility: Compatible with normal saline, dextrose concentrations between D5W to D50W, dextrose-saline combinations

PRECAUTIONS, POTENTIAL ADVERSE REACTIONS:
 CV: bradycardia, dysrhythmias, hypotension and cardiac arrest
 Local: tissue necrosis, phlebitis
 Other: too rapid administration – calcium taste and tingling sensation in the extremities; flushing, nausea, vomiting

CAUTION

- patients with renal impairment or the concurrent administration of digoxin

ADDITIONAL NOTES AND NURSING CONSIDERATIONS:

REQUIRED MONITORING

Hypocalcemia - IV intermittent and IV infusion

- Heart rate and blood pressure at baseline and every 15 minutes x 2

Emergent indications – IV/IO bolus

- Continuous cardiac monitoring, continuous blood pressure (preferred) or blood pressure at baseline and every 10 minutes x 3, respiratory rate, oxygen saturation at baseline and every 10 minutes x 3

Beta-blocker or Calcium channel blocker overdose – IV intermittent

- Continuous cardiac monitoring, continuous blood pressure (preferred) or blood pressure at baseline and every 10 minutes x 3, respiratory rate, oxygen saturation at baseline and every 10 minutes x 3

RECOMMENDED MONITORING (IV intermittent and IV infusion)

- serum calcium at baseline and as clinically indicated
- blood pressure, heart rate, respiratory rate at baseline and as clinically indicated