Class

Pancreatic Hormone, Insulin Antagonist, Hyperglycemic Agent

Pharmacologic Properties

Glucagon is an endogenous hormone that is produced in the pancreas. It acts as an insulin antagonist, accelerating hepatic glycogenolysis and gluconeogenesis. This has the effect of increasing blood glucose concentrations. Glucagon also effectively restores force and rate of ventricular contractions in patients with symptomatic beta-blocker and calcium channel blocker overdose via stimulation of intracellular cyclic adenosine monophosphate (cAMP) production.

Indications

- Hypoglycemia (where IV access cannot be obtained) Protocol 36, Protocol 36P.
- Beta-blocker and calcium channel blocker overdoses Protocol 15, Protocol 15P.

Contraindications

- Patients with known hypersensitivity to glucagon.
- Patients with a history of pheochromocytoma or insulinoma.

Precautions

- Glucagon should be administered with caution in patients with a history of insulinoma or pheochromocytoma
- Awaken patient following administration to provide oral glucose in order to replete glycogen stores

Side Effects/Adverse Reactions

- Occasional nausea and vomiting

Dosage and Administration

Adult

Adult Hypoglycemia

- 1 mg (1 unit) IM reconstituted with saline provided

Adult Calcium Channel Blocker/Beta-Blocker Overdose

- 3 mg (3 units) slow IV/IO bolus over 3 – 5 minutes

Pediatric

Pediatric Hypoglycemia

- < 20 kg, 0.5 mg (0.5 unit) IM reconstituted with saline provided
- ≥ 20 kg, 1 mg (1 unit) IM reconstituted with saline provided

Pediatric Calcium Channel Blocker/Beta-Blocker Overdose

- 0.05 – 0.15 mg/kg slow IV/IO bolus over 3 – 5 minutes