

RX

Drug Name: Glucagon

Trade Name: Glucagon

Class:

Pancreatic Hormone (α_2 cells in pancreas)

Mechanism of Action:

Increases blood glucose by stimulating glycogenolysis
Inhibits conversion of glucose to glycogen
Stimulates gluconeogenesis (*metabolism of glucose in the liver*)
Relaxes smooth muscle of the GI tract (*mechanism unknown*)
Positive inotrope & chronotrope (*mechanism unknown*)

Indications:

Hypoglycemia
 β -Blocker or Calcium Channel Blocker Toxicity (*not listed in protocols*)

Contraindications:

Known hypersensitivity
Known Insulinoma (*can precipitate hypoglycemia secondary to insulin release*)
Known Pheochromocytoma (*can precipitate substantial hypertension secondary to catecholamine release*)

Precautions:

Cardiac Disease / CAD	Hepatic disease
Geriatrics	Renal Insufficiency
Malnutrition	Pregnancy (B)
Alcoholism	

Dosage:

Adults:

Hypoglycemia:

1 mg IM

If ineffective may readminister in 5-20 minutes.

β -Blocker or Calcium Channel Blocker Overdose as ordered by medical control

1-2 mg IV/IM, repeated every 5 minutes PRN. Do not use diluent (e.g. propylene glycol) supplied with single use kits. Use saline Instead.

Pediatrics:

Hypoglycemia

0.1 mg/kg IV/IM/SQ up to 1 mg

β -Blocker or Calcium Channel Blocker Overdose as ordered by medical control

0.1 mg IV/IM/IO, up to 1 mg repeated every 5 minutes PRN. Do not use diluent (e.g. propylene glycol) supplied with single use kits. Use saline Instead.

Onset:

IV—5-20 min
IM—30 min
SubQ—30-45

Duration:

1-2 hours

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Side Effects:

N/V
Angina (rare)
Urticaria (rare)
Dizziness (rare)

Interactions:

Beta blockers may interfere with glucagon's actions

PEARLS:

Glucagon only works when there are normal liver stores of glycogen. Will not work in patients with chronic hypoglycemia, malnutrition, starvation. May not work in chronic alcoholism for similar reasons including hepatic disease.
First line treatment is always glucose. Use it as a last resort in insulin-dependent diabetics. They already have depleted stores of glycogen. Glucagon will deplete glycogen stores further and it takes some time for the stores to regenerate.
Treatment of a beta-blocker or calcium channel overdose with glucagon will require a call-in.