

GLUCAGON
(GLOO-kah-gon)

PHARMACOLOGICAL CLASSIFICATION:

-anti-hypoglycemic agent

THERAPEUTIC CLASSIFICATION:

-anti-hypoglycemic agent

MECHANISM OF ACTION:

- increases plasma glucose levels and causes smooth muscle relaxation and an inotropic myocardial effect
- produced by the alpha islet cells of the pancreas, glucagon accelerates liver glycogenolysis by stimulating synthesis of cyclic AMP (adenosine monophosphate) and increasing phosphorylase kinase activity
- (Cyclic AMP initiates a series of reactions that leads to degradation of glycogen to glucose)
- increases the uptake of amino acids and converts them to glucose precursors

ONSET OF ACTION:

-IM: 5-20 minutes

DURATION OF ACTION:

1-2 hours

INDICATIONS:

-to reverse hypoglycemia in a patient where IV access is unattainable

CONTRAINDICATIONS:

-pheochromocytoma (tumor of sympatho-adrenal system that produces catecholamines that produces HTN)

SIDE EFFECTS:

- hypotension
- dizziness

INTERACTIONS:

- epinephrine (increases and prolongs the hyperglycemic effect)
- phenytoin (inhibits glucagon-induced insulin release)
- anti-diabetic agents (antagonizes hypoglycemic effect of anti-diabetics)

DOSAGE:

-0.5 – 1.0 mg IM

SPECIAL CONSIDERATIONS:

- glucagon comes prepared in two vials, one with powder and one with fluid (mix together and inject)
- once patient responds, give supplemental carbohydrates to prevent secondary hypoglycemia
- glucagon is effective in overcoming hypoglycemia only if the liver has a glycogen reserve