Georgia Poison Center

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Sulfonylureas Toxicity: Guideline

This document is written to describe our guidelines for the management of Sulfonylureas ingestions in typical situations, although we recognize that extenuating circumstances may make a different approach. When in doubt, contact medical toxicology backup.

1. **History:**
   a) Sulfonylurea ingested?
   b) Immediate release vs Extended release?
   c) Dosage of Sulfonylurea ingested?
   d) Is this medication part of home medication regimen (daily)?
   e) Time ingestion?
   f) Current symptoms?
   g) Co- ingestants?
   h) Interventions done?

2. **Triage:**
   a) Adults, unintentional double dosing: if patient is asymptomatic, with company at home and able to monitor fingerstick glucose level (Point of care glucose at home every 2hrs)- can be monitor at home with a FU from GPC. If doesn't meet criteria, should be referred to the ED.
   b) Children, symptomatic adults and all intentional ingestions should be referred to ED.

3. **Mechanism of action:**
   Binds to and inhibit the ATP- sensitive potassium channels on the pancreatic beta cells; potassium efflux decreases and the beta cell membrane depolarizes; membrane depolarization causes calcium channels to open, leading to calcium influx and increased intracellular calcium, which stimulates insulin secretion from the pancreatic beta cells. Can also cause decrease in insulin metabolism by the liver and glucagon secretion, and increase sensitivity to insulin in peripheral tissues.

4. **Types of Sulfonylureas:**

Medication	Generation	Therapeutic dosage	Max dose
Acetohexamide	First		
Chlorpropamide	First	100mg to 250mg	500mg
Tolazamide	First	500mg	3000mg
Tolbutamide	First		
Glimepiride	Second	1mg to 2mg	8mg
Glipizide	Second	5mg	IR 40mg ER 20mg
Glyburide	Second	2.5mg to 5mg	20mg
Gliclazide	Second	80mg	320mg

IR= immediate release, ER= extended release, PO= per os= by mouth, SIADH= syndrome of inappropriate antidiuretic hormone secretion.

List of **Sulfonylureas** renally excreted: Chlorpropamide (90%), Tolazamide (85%), Tolbutamide (75%), Glimepiride (60%), Glipizide (80%), Glyburide (50%). Patients with **acute renal injury** are at **increased risk for toxicity**.

5. **Signs & Symptoms of hypoglycemia:**
   Tremor, diaphoresis, nausea, headache, tachycardia, seizures, altered mental status, delirium, focal neurologic deficit and coma.

6. **Definitions:**
   a) Acute hypoglycemia: serum blood glucose level BELOW 60mg/dL.
   b) Recurrent hypoglycemia: at least one episode of hypoglycemia following an initial episode treated with IV dextrose.

7. **Management:**
   a) Glucose levels monitoring: every 1 to 2hrs for the first 8 to 12hrs after initial exposure. If the patient becomes hypoglycemic, the effects may be prolonged and will require continued monitoring until 2 reports of normoglycemia without supplemental glucose.

b) Supportive care: ABC
c) Decontamination: Activated charcoal 1g/kg of body weight (kg) in an acute overdose. Cut off time for administration of charcoal is dependent on dose of ingestion, hemodynamic status, and other co-ingestants.
***Patient awake and protected airway.
d) Acute hypoglycemia:
1) Dextrose (in symptomatic hypoglycemia)
Pediatric patients:
less than 1yo D10 5- 10mL/kg
1- 8yo D25 2- 4mL/kg
More than 8yo D50 1- 2mL/kg
Adults: 0.5 to 1g/kg hypertonic IV dextrose in the form of D50W
2) Complex carbohydrate diet
***Patient awake and protected airway.
3) Octreotide
Refer to Figure 1. (below)
Contraindications for Octreotide: Hypersensitivity (Anaphylaxis).

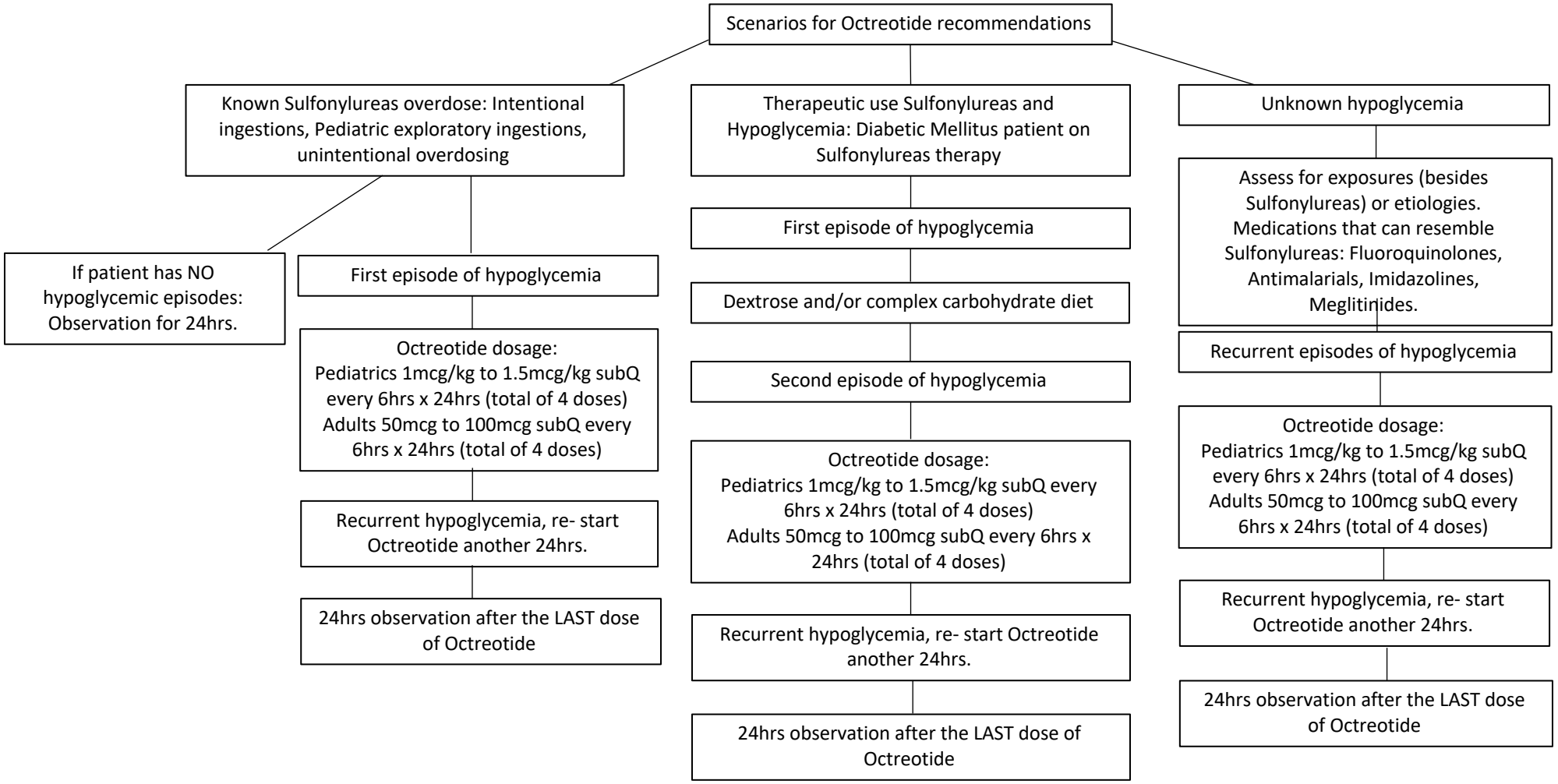

Figure 1. Octreotide therapy recommendations.

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