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## Clinical Champion Update

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Date: 4/11/24

Subject: Diabetes

### Diabetes Case Review: Hypoglycemia

Phone call received from a VNA nurse regarding a 56 year old patient with schizophrenia who lives in a group home experiencing hypoglycemia. The nurse goes to the group home daily to check his blood sugar and administer his long acting insulin. The patient is currently taking metformin 1000mg BID and Lantus 60 units in the morning. His A1c is 6.8% and at goal. Of note, he was recently on Levemir 70 units once daily and his insurance changed formulary. The PCP lowered the dose of insulin when switching to Lantus from 70 units to 60 units just a few days prior to this episode. The nurse notes a blood sugar of 27. The patient is asymptomatic, alert and oriented, with stable vital signs. Repeat glucometer reads were 24 and 23. The patient and nurse did not have glucose tablets, glucagon or juice available. They administered sweetened iced tea and re-checked blood sugar in 15 minutes without a change in results, and called our office. The nurse was instructed to call EMS, who then administered glucose tablets. Blood sugar recovered to 86 and 94, and the patient declined transport to the ER for longer monitoring.

#### Take home notes:

- 1. Prescribe glucagon or glucose tabs.** Patients on insulin or sulfonylureas (SU) who are at risk for hypoglycemia or any patient that has had prior episodes of hypoglycemia should have a prescription for glucagon (Baqsimi - nasal, Gvoke - injection) or oral glucose tablets. **We under-prescribe this!**
- 2. Risk factors for hypoglycemia**
  - a. Insulin or SU use
  - b. A1c less than 6.5% - consider stopping or lowering the SU and/or insulin dose
  - c. Recent medication changes
  - d. Cognitive impairment
  - e. T1DM
  - f. Acute illness with lack of appetite/decline in oral intake
  - g. Transition to low carb diets/keto
  - h. Puberty, menstruation, menopause
  - i. Hot and humid weather
  - j. High altitude
  - k. Prior episodes or history of hypoglycemic unawareness
- 3. Rule of 15-15 – patient instructions for glucose 54-80 mg/dL**
  - a. Administer 15 grams of carbohydrates and re-check glucose in 15 minutes. Repeat process if blood sugar continues to be below 80. Best options are 4oz of sugary juice or glucose tablets.
  - b. **Do not eat until the blood sugar has increased.** Added fat to a treatment may delay and then prolong the increase in blood sugar (ex. chocolate, peanut butter, crackers). In Type 2 Diabetics, a treatment high in protein can stimulate the person's own insulin response, preventing a rise in blood sugar.
- 4. Changes in long acting insulin brands often require a dose adjustment.** See the attached chart for recommendations.

5. **In patients with a history of hypoglycemia, consider prescribing a CGM.**

Definition of Hypoglycemia:

- Level 1 Hypoglycemia: Blood sugar 54 mg/dL- 69 mg/dL
- Level 2 Hypoglycemia: Blood sugar <54 mg/dL patient alert and oriented
- Level 3 Hypoglycemia: Blood sugar <54 mg/dL and patient has altered mental status

Treatment:

- Level 1 & Level 2 Hypoglycemia
  - Administer fast acting carbohydrate such as 15-20g glucose tabs, or 4 oz of juice
  - Repeat blood sugar reading after 15 minutes or with any status change (symptoms resolve or patient becomes unresponsive)
  - If continues to have low blood sugar less than 80mg/dL, repeat treatment and repeat testing in 15 minutes
  - Once blood sugar returns to normal, patient can eat a meal or snack to prevent recurrence, especially if on insulin (discuss with provider as to need for meal time insulin)
  - Provider to address incident and determine if changes in medications are needed
- Level 3 Hypoglycemia:
  - In office: Administer glucagon (1mg by IM route); if does not become more alert within 3 minutes, call 911. At home: family or friend should call 911 and administer glucagon.
  - Repeat blood sugar reading after 10 minutes or with any status change (patient becomes alert, or if worsened and became unconscious)
  - If continues to have blood sugar less than 80mg/dL and is unresponsive, repeat treatment with 1mg glucagon by IM route; If patient becomes alert, administer fast acting carbohydrate such as 15-20g of glucose tabs, or 4 oz of juice

In 2020, over 200,000 patients presented to the ER with hypoglycemia in the United States and 25% were admitted for further management. **Preventing hypoglycemia is important for our patients' safety!**

Diabetes Clinical Champions,

Trisha Rogers and Maggie Gladski