

TREATMENT OF HYPOGLYCEMIA IN CHILDREN WITH DIABETES

Purpose

To normalize the level of low serum glucose in a safe, effective and timely manner.

Definition

1. **Hypoglycemia** – Low blood glucose.
2. **Mild to moderate** hypoglycemia may be suspected by the following symptoms and confirmed by a blood glucose test: shakiness, hunger, paleness, headache, sweating, dizziness, weakness, behavior changes, stomachaches, irritability, nightmares. Blood sugar reading during waking hours: small/very small infants – check with physician on glucose range, less than 6 years - glucose \leq 80 mg/dl and 6 years and older – glucose \leq 70 mg/dl. Blood sugars readings a bedtime and during the night: all ages – glucose \leq 100 mg/dl.
3. **Severe hypoglycemia** – this is a life threatening event that may generally be accompanied by more severe symptoms as follows (the symptoms of mild/moderate hypoglycemia may be seen as well): Irrational or uncontrolled behavior, decreased level of consciousness, blurred vision, slurred speech, confusion seizures, somnolence, coma. Glucose level would be expected to be below 50 mg/dl.

Policy Statement

1. Physicians must be called and treatment started immediately for severe hypoglycemia as this is a life threatening event.
2. Glucagon or 50% dextrose must be available on all floors who care for children with diabetes/hypoglycemia for immediate use.

General Information

1. RN's, LPN's and nursing students are able to treat mild to moderate hypoglycemic reaction without a physician order. Only RN's may treat severe hypoglycemia.
2. Physicians should be notified of all hypoglycemic episodes, but treatment should not be delayed while waiting for a physician to respond.

Equipment

1. Glucose monitor and appropriate supplies (alcohol wipes, lancets, test strips).
2. Carbohydrate sources.
3. Glucagon or 50% Dextrose

PROCEDURE

1. Assess patient for symptoms of hypoglycemia to determine if event is mild to moderate or severe. If symptoms exist, then check patient's blood glucose level.
2. If blood glucose level is $<$ 50 mg/dl, the RN should obtain a blood sample for lab to correlate. However, do not delay treatment if unable to get a lab sample.
3. Start treatment immediately. Notify physician.
4. For mild to moderate reactions, give child 15 grams of carbohydrate. This could include:
 - a. 4 ounces (120 ml) sugared pop or juice.

- b. 4-5 glucose tablets.
 - c. 8 ounces of white milk.
 - d. ½ to 1 tube of single dose Glucose gel.
 - e. ½ cup of applesauce.
5. Stay with the child, wait 10-15 minutes and recheck the blood glucose.
- a. If blood sugar is not up to normal, give patient another 15 grams of carbohydrate.
 - b. If patient is on a NPH regimen blood sugar is normal, patient is non-symptomatic and is < 1 hour until child's next snack or meal, no additional food is required.
 - c. If patient is on the NPH regimen blood sugar is normal and it is > 1 hour until child's next snack or meal, give an additional 15 grams of carbohydrate.
 - d. Continue to recheck blood glucose levels every 15 minutes until levels are better and symptoms are gone.
 - (1) Children under 6 years – blood glucose must be > 89 mg/dl during the daytime and > 100 mg/dl at bedtime or during the night.
 - (2) Children 6 years or older – blood sugar must be >79 mg/dl during the daytime and = > 100 mg/dl at bedtime or during the night.
 - e. All food given to treat hypoglycemia is given in addition to the child's regular meal plan. Avoid over treatment if possible.
6. Severe hypoglycemia – This is a life threatening event and treatment must be started immediately.
- a. If patient is found with symptoms of severe hypoglycemia as described in definitions and mild/moderate hypoglycemia symptoms, a blood sample should be drawn to send to lab for correlation, the physician notified and treatment started immediately.
 - b. Treatment:
 - (1) If child is unable to cooperate with taking carbohydrates choices as described above then give:
 - (a) 1/2 to 1 tube of single dose Glucose gel sublingual and inside cheeks. Child may swallow some of the gel but most will absorb from the mucous membranes in the mouth.
 - (b) Glucagon by injection (IM) dosage:
 - i. 1 ml for children 16 years and older.
 - ii. 0.5 ml for children 6-16 years old.
 - iii. 0.3 m. for children under 6 years old.
 - (c) 50% dextrose may be given IV push if child has an IV line. Dose 2 ml./kg. This may be repeated only one time in 10-15 minutes after initial dose if blood sugars have not improved.
 - c. Continue to monitor blood glucose level every 15 minutes until alert and then every hour until stable and taking food unless ordered differently.
 - d. When alert, give small amounts of sugared pop or juice and advance to solid carbohydrates as ordered.

Documentation

Document all hypoglycemic episodes in the medical record.

References

American Diabetes Association. (2002). Clinical Practice Recommendations. *Diabetes Care*, 23(1).

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