



Introduction

In a diabetic emergency, giving sugar to someone with low blood glucose can be a life saving measure but providing sugar to someone with high blood glucose will have little negative effect. If in doubt, provide the patient with sugar. If trained and equipped to measure a blood glucose level (BGL) utilizing a blood glucometer, a BGL should be acquired early. A BGL is considered one of the core 5 vital signs in patients that have suspected hyperglycemia, hypoglycemia, seizures, or altered level of consciousness.

A conscious patient who is able to follow instructions can be encouraged to drink or eat something sweet but must have no serious illness and able to swallow. If this is not the case, provide comfort measures until EMS arrival.

Etiology

In the vast majority of cases, clinically significant hypoglycemia occurs in diabetic patients who are insulin dependent or oral hypoglycemic dependent who have:

1. Taken more than the prescribed amounts of insulin or oral hypoglycemic medication
2. Taken prescribed amounts of medication, but have not eaten sufficient amounts of food or have not eaten on schedule
3. Taken prescribed amounts of medication but engaged in greater than usual amounts of physical activity
4. A concurrent illness / Increased metabolic stress such as infections, fevers
6. Genetic / metabolic disorders
7. Malnutrition
8. Liver failure

The following drugs may cause significant hypoglycemia:

1. Insulin
2. Acetylsalicylic acid (ASA)
3. Alcohol
4. Oral hypoglycemic medications, examples:
 - Metformin (Glucophage)
 - glyBURIDE (Diabeta)
 - Repaglinide (Prandin)
 - GLICLAzide (Diamicon)
5. Injectable hypoglycemic medications, examples:
 - Albiglutide (Tanzeum)
 - Exenatide (Bydureon, Byetta)
 - Liraglutide (Victoza)
 - Pramlintide (Symlin)
 - Dulaglutide (Trulicity)

Hypoglycemia may be recognized by the presence of adrenergic signs resulting from the release of endogenous catecholamines in response to the hypoglycemic stress. These signs include pallor, diaphoresis, tachycardia, and tremors; additional signs may include altered mental status, coma, or seizures. Though rare, hypoglycemia may occasionally cause lateralizing neurological symptoms mimicking a stroke.

Pediatric Considerations

Hypoglycemia is common in metabolically stressed children because it is more difficult for them to access their limited stores of glycogen.

Treatment

If trained and equipped, provide oral glucose.

In the absence of oral glucose prepare a glass of juice (orange/apple) and stir in two tablespoons of sugar. Hand the glass to the patient and encourage them to drink. If unable to comply, do not attempt to force the liquid into their mouth.

In the absence of juice, water/milk with added sugar or soda pop/sports drink with sugar as the main ingredient can be substituted. Avoid diet drinks due to their absence of sugar.