

Overview

Glucagon is a very important emergency treatment option to have available if the diabetes is treated with insulin injections or an insulin pump. It is an ideal treatment for severe hypoglycemia (low blood glucose) when unable to treat the hypoglycemia with carbohydrate by mouth.

Like insulin, glucagon is a hormone produced by the pancreas. It raises blood glucose levels by causing the release of glucose from the liver. Similar to insulin, glucagon must be injected. Once injected, it usually raises blood glucose levels within 2 to 10 minutes.

Glucagon is prescribed for persons at risk for severely low blood glucose. This means anyone taking insulin, but most particularly patients with type 1 diabetes. The recent focus on strict control of blood glucose increases the risk of having severely low blood glucose.

When would you consider using glucagon?

Severe hypoglycemia occurs when the blood glucose drops so low that it cannot be treated with oral carbohydrate because the person is drowsy, confused, unconscious, or not able to swallow. Glucagon must then be injected by someone who is trained to do so. It is helpful to test the blood glucose first to confirm hypoglycemia, however, it is not necessary. If in doubt, glucagon should be given. Some people vomit after glucagon injections, however, this vomiting often occurs after severe hypoglycemic episodes when glucagon is not given. If glucagon is not available when severe hypoglycemia occurs, emergency help (usually 911) should be summoned immediately.

Glucagon is only helpful if someone who is nearby is able to recognize severe hypoglycemia, has glucagon available, and knows how to administer it. For this reason, members of each household or in some cases, the workplace, should learn about hypoglycemia and how to properly use glucagon.

What happens after you use glucagon?

In most cases, glucagon works within 15 minutes. Keep an unconscious person on his/her side to prevent choking in case of vomiting. After the person is fully awake, give sips of juice or another clear liquid such as a regular non-diet soda (containing sugar). If the person keeps the liquids down, offer solid food. Glucagon works quickly to raise the blood glucose, but the effect also wears off quickly (usually 60-90 minutes). Be sure the person has ingested enough of carbohydrate during that time to prevent the blood glucose from going too low again.

If the person remains unconscious or confused after 15 minutes, give another injection of glucagon and call for emergency assistance (usually 911). **It should be noted that severe hypoglycemia caused by alcohol consumption can not be treated with**

glucagon. In this case, emergency help should be called at the first sign of severe hypoglycemia.

After one hypoglycemic episode has been treated, think over events in the preceding hours which may have contributed. Approximately 75% of the episodes of severe hypoglycemia can be explained by a breakdown of the treatment plan.

Some common causes are: (listed from most to least common) 1) Insufficient food (missed meal or snack) 2) Taking too much extra insulin 3) Major increase in exercise 4) Alcohol (which can block the liver's ability to provide glucose). Episodes of severe hypoglycemia should always be reported to your health care team.

Important Things to Remember

- Discuss with your healthcare team the proper treatment and prevention of severe hypoglycemia, plus any concerns, fears, or questions you may have.
- Discuss the need for glucagon and when it is needed with your doctor.
- Make sure key members of the household or your workplace know how to recognize severe hypoglycemia, where to find the glucagon, and how to use it.
- Have key members review the instructions on a regular basis.
- Make sure the glucagon is not expired. Glucagon is good for two years from the date it was manufactured. Replace any expired glucagon immediately.
- Make sure that the glucagon is with you when you are away from home. This is assuming someone trained is available to administer the injection.