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Commentary

Prevention and Treatment of Hypoglycemia

Bikram Malhotra*

Department of Biotechnology, University of Tokyo, Tokyo, Japan

DESCRIPTION

Hypoglycemia is defined as a condition in which blood glucose level is lower than the normal. It occurs in newborn babies, males and females and high risk at older elder peoples. It is common in patients with type 1 diabetes, especially those who are receiving intensive therapy. They suffer an average of 2 episodes of symptomatic hypoglycemia per week. The normal range of blood glucose levels is 4.0 to 5.4 mmol/L when fasting and upto 7.8 mmol/L 2 hrs after eating in healthy individuals.

The common signs and symptoms of hypoglycemia are over sweat, headache, looking pale, dizziness, light headedness, loss of motor coordination, fatigue, anxiety, numbness, blurry vision, palpitations, muscle weakness, vertigo, cognitive impairment, etc. In severe cases, it may lead to seizures, coma and death.

The following are some of the causes:

- High amount of insulin intake.
- Exercise without proper food intake.
- Skipping meals.
- Lack of glucagon.
- Excessive alcohol consumption.
- Tumor of pancreas known as insulinoma.
- Gastric surgery or hepatic diseases.
- Adrenal insufficiency.
- Sepsis and starvation.

Hypoglycemia can by diagnosed by performing blood tests, Computerized Tomography (CT) scan, glycogen test, Magnetic Resonance Imaging (MRI) scan, ultrasound. Assessment at the bedside includes patient's level of consciousness, respiratory or circulatory status, capillary blood glucose test results and existence of Intravenous (IV) access, time and amount of insulin doses.

Treatment

Based on the condition of the patient, the treatment varies from each person.

Patients can be treated with oral carbohydrate sources such as apple juice or orange juice, regular sugar-sweetened cola, glucose tablets, sugar-sweetened ginger ale, etc. But, orange juice should not be given to those patients who are suffering with renal infections. Carbohydrate intake along with combination of the counter-regulatory hormone leads to hyperglycemia. Hence, frequent glucose monitoring should be continued, until a stable glucose level is reached.

Nutrition counseling or medications for treating diabetes should be changed by the healthcare professional. A tumor in pancreas is typically treated by surgical removal of the tumor. In some cases, it can be treated by medications or partial removal of pancreas. The immediate treatment for severe hypoglycemia is to give a glucagon injection or intravenous glucose, in case of unconsciousness. People with diabetes who are treated with insulin should carry a glucagon kit for emergency conditions.

Prevention

It can be prevented by recognizing the precipitating factors, insulin therapy, glucose monitoring, inpatient use of oral agents, medical nutrition therapy, etc..

This includes delay in the timing of meals, errors in dosages of medications administered particularly insulin, etc. increases the risk for hypoglycemia. Inpatient staff can prevent hypoglycemic episodes by giving instructions to patients regarding meal timing and medication administration. Self-management by patients whose diabetes is well controlled in those who have an insulin pump or who use multiple daily injections of glargine and aspart or lispro.

Usually, out of concern for hypoglycemia, prandial insulin is given if the pre-meal blood glucose is elevated. A consistent carbohydrate diet is important to appropriately match the insulin regimen for optimum glucose control and prevention of hypoglycemia. Carbohydrate should be consumed in a balanced meal with protein, fat and fiber.

Correspondence to: Bikram Malhotra, Department of Biotechnology, University of Tokyo, Tokyo, Japan, E-mail: bmal@apersg.kehj.ap.jp

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