Reactive hypoglycemia symptoms improve with sitagliptin

June 25 2012

The diabetes drug sitagliptin appears to reduce the severity of reactive hypoglycemia, a form of low blood sugar that occurs after a meal, a preliminary study finds. The results will be presented at The Endocrine Society's 94th Annual Meeting in Houston.

"Further studies may determine if it is possible to use sitagliptin as a novel approach to treat this condition, for which there currently is no medical therapy," said the lead investigator, Francisco Gomez-Perez, MD, of Instituto Nacional de Ciencias Medicas y Nutricion SZ in Mexico City.

Also called postprandial hypoglycemia, reactive hypoglycemia can occur in both diabetic and nondiabetic individuals, usually after eating carbohydrates, or sugars. Symptoms include anxiety, heart palpitations, tremor (shakiness), sweating, dizziness, tingling of the fingers, difficulty concentrating and weakness. Current treatment, which is not always successful, involves avoiding high-sugar foods and eating small portions throughout the day, Gomez-Perez said.

The presumed cause of reactive hypoglycemia is a delayed secretion of the hormone insulin in response to ingested carbohydrates, he said. Insulin is needed at the right time to take care of the rise in blood sugar that usually follows a meal.

Doctors prescribe sitagliptin (marketed as Januvia) to lower glucose, or blood sugar, levels in adults with Type 2 diabetes. Gomez-Perez and his

co-workers hypothesized that this medication might reduce the symptoms of reactive hypoglycemia.

In 28 people with reactive hypoglycemia (24 women and four men), the researchers studied the effects of taking either a 100-milligram tablet of sitagliptin once a day or an identical-appearing but inactive placebo ("dummy") pill. Thirteen participants randomly received sitagliptin, and the other 15 got the placebo. The authors received placebo and sitagliptin as well as funding for study materials from the manufacturer, Merck.

Before and after two weeks of treatment, participants had a five-hour meal tolerance test to measure their insulin and blood sugar levels. This test consisted of taking blood samples shortly before and repeatedly after the subjects ate a 440-calorie meal. It contained 100 grams of carbohydrates, an amount that would usually trigger symptoms of reactive hypoglycemia in these patients. The first 30 minutes of the test was the early phase, and the period from one to five hours made up the late phase.

Initial pretest insulin and glucose levels were similar between groups. In the late phase of the meal tolerance test, however, the group that received sitagliptin had significantly higher blood sugar levels, according to the abstract. This correlated with a reduced intensity of symptoms of low blood sugar. The sitagliptin-treated group reported that the intensity of their symptoms was much lower than that reported by the placebo group: 2 versus 5, respectively, on a scale of 0 to 10, with 0 indicating not present and 10 representing maximum intensity.

"Our results suggest that the reduction of hypoglycemia is related to an improvement in the secretion of insulin during the early phase of the meal tolerance test," Gomez-Perez said. "Sitagliptin appears to restore the normal dynamics of insulin secretion."

Although he called the results "promising," he said more research is necessary before they can recommend sitagliptin for treatment of reactive hypoglycemia.

Provided by The Endocrine Society