Insulin degludec lowers risk of recurrent low blood sugar or has similar risk to insulin glargine

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Insulin degludec (Tresiba), a new ultra-long-acting insulin, has a similar or reduced risk of recurrent hypoglycemia— low blood sugar— compared with the commercially available insulin glargine, a new meta-analysis study finds. Results of the combined analysis, of five completed clinical trials, will be presented Tuesday at The Endocrine Society's 95th Annual Meeting in San Francisco.

The studies included nearly 3,400 adults with type 2 diabetes who had a daily injection of either insulin degludec or glargine combined with either a mealtime insulin or oral diabetic medications.

"Compared with insulin glargine, insulin degludec may offer considerable benefits by reducing the major side effect of insulin therapy, hypoglycemia," said the study's principal investigator, Alan Garber, MD, PhD, professor of medicine, biochemistry and molecular biology, and molecular and cellular biology at Baylor College of Medicine, Houston.

Insulin degludec is not yet approved by the U.S. Food and Drug Administration but is commercially available in some other countries. Because it has a longer duration of action than insulin glargine, Garber said it was important to determine whether this affects the likelihood of patients having recurrent episodes of hypoglycemia. The study authors defined recurrent hypoglycemia as a confirmed plasma glucose, or low

blood sugar, level less than 56 milligrams per deciliter (or a level so severe that the patient required assistance) within 24 hours of another such episode.

Of the patients in the five studies, 2,262 took insulin degludec and 1,110 used insulin glargine, the authors reported. Four trials compared these two basal, or long-acting, insulins in combination with oral diabetic medications (insulin-oral therapy). One study, analyzed separately from the others, compared the insulins combined with a bolus, or fast-acting mealtime, insulin, called aspart (insulin-only therapy).

Denmark-headquartered Novo Nordisk, the manufacturer of insulin degludec, funded the meta-analysis and provided statistical analysis.

Results showed that 38 percent of patients taking insulin degludec and 43 percent of patients using insulin glargine experienced recurrent hypoglycemia in the insulin-only trial, compared with 6.1 and 6.6 percent with degludec and glargine, respectively, in the insulin-oral therapy trials. For all five trials, there was no significant difference in the rates of recurrent hypoglycemia, according to the abstract. For the insulin-only trial, there was reportedly a 27 percent lower rate of recurrent hypoglycemia for patients taking insulin degludec versus insulin glargine.

"This study shows that insulin degludec is an appropriate therapy for use in different treatment regimens for patients with type 2 diabetes," Garber said.

Nearly one-third of patients with type 2 diabetes use insulin therapy, he stated. Insulin-induced hypoglycemia is one of the most common reasons for emergency room visits by older adults, Garber said, citing a November 2011 study published in The New England Journal of Medicine.

"Decreasing the risk of hypoglycemia in diabetic patients is a benefit to both the patient and the insurer," he said.

Provided by The Endocrine Society