Experimental insulin drug prevents low blood sugar

June 25 2012

An experimental insulin drug prevented low blood sugar among diabetic patients more often than a popular drug on the market, a new study finds. The results will be presented at The Endocrine Society's 94th Annual Meeting in Houston.

Nearly 26 million people in the United States have diabetes, which can cause blood sugar, or glucose, to climb to dangerously high levels. While treatment with the hormone insulin can help control blood sugar, it sometimes leads to abnormally low levels, or hypoglycemia. Symptoms of low blood sugar include headaches, tremors, and even seizures, so it is critical to develop medications that control blood sugar without causing extreme drops.

"Diabetes is an increasingly common disease, and many patients fail to achieve their treatment goals due to a fear of hypoglycemia," said lead investigator Daniel Einhorn, M.D., medical director at Scripps Whittier Diabetes Institute, and clinical professor of medicine at the University of California San Diego. "This puts them at risk of developing diabetes complications."

While both medications in this large-scale analysis decreased blood-sugar concentrations, the experimental drug, degludec, caused fewer incidents of low blood sugar, especially at night-time, compared to glargine. Overall, low blood-sugar levels occurred 14 percent less often among degludec patients than among those receiving glargine, also known as Lantus. At night, low blood sugar occurred 37 percent less

often among degludec than glargine recipients.

Sixteen weeks after the study, degludec patients had even fewer incidents of low blood sugar. During this maintenance period, the condition occurred 21 percent less frequently, overall, and 43 percent less often at night. No major complications were reported.

"This study suggests that blood glucose can be effectively lowered by degludec, with a lower risk for hypoglycemia compared to currently available insulins," Einhorn said. "It is therefore possible that treatment with degludec can improve patient outcomes by limiting the side effects associated with insulin use."

Investigators analyzed data from seven separate clinical trials. Two of these trials focused on type 1 diabetes, in which the body produces insufficient insulin to control blood-sugar levels. The other five trials examined the most common form of diabetes, known as type 2, in which the body both responds inadequately to insulin and produces inadequate amounts of the hormone.

More than 3,000 participants were randomly assigned to receive either degludec or glargine once a day for 26 or 52 weeks. Of the total number, 2,899 patients received degludec, and 1,431 were given glargine. Nearly half of all patients on both drugs achieved targeted levels of blood-sugar control.

While the investigators are presenting this study for the first time, results from the previous seven trials were previously publicized. Novo Nordisk, the maker of degludec, funded the study.

Provided by The Endocrine Society