Medical Xpress

Study suggests drug significantly improves glycemic control in type one diabetics on insulin

June 15 2011

Results of a small, observational study conducted at the University at Buffalo suggest that liraglutide, an injectable medication used to treat type 2 diabetes, also helps type 1 diabetics on insulin achieve optimal control of their blood glucose levels.

If the findings are confirmed in a larger, prospective, randomized study now being planned by the UB researchers, they could mean the first significant, new treatment for type 1 diabetes since insulin was discovered and made available in the 1920s.

The research has been published online ahead of print in the *European Journal of Endocrinology*. It also was recently presented at the annual meeting of the Endocrine Society in Boston, where it received recognition as one of the most outstanding abstracts presented and the best in the field of diabetes.

"Since the development of injectable insulin, there has been nothing definitive in terms of a significant advance in type 1 diabetes treatments," says Paresh Dandona, MD, PhD, UB distinguished professor of medicine in the School of Medicine and Biomedical Sciences and senior author on the study. "That is the tragedy of the type 1 diabetic.

"This study shows that liraglutide can provide even well-controlled type

1 diabetics with additional benefits that help them achieve even better blood glucose levels," says Dandona.

The patients on liraglutide, which is marketed as Victoza, also saw a reduction in appetite and food intake and the paper reports that body weight significantly fell in patients who took the drug for 24 weeks.

The unfunded study was a retrospective analysis of data. It was conducted at Kaleida Health's Diabetes-Endocrinology Center of Western New York, which Dandona directs.

At the start of the study, all 14 patients had hemoglobin A1C levels of under 7, which is considered optimal. They were characterized in the paper as "well-controlled…meticulous and disciplined" in terms of their ability to control their blood glucose levels with insulin.

Nevertheless, Dandona notes, even well-controlled type 1 diabetics still experience "glycemic excursions," fairly wide swings in their blood glucose numbers ranging from the hyperglycemic, from 150 milligrams per deciliter to 250 mg/dl or higher to the hypoglycemic, under 70 mg/dl.

"The addition of liraglutide to insulin therapy in these well-controlled type 1 diabetics resulted in a significant and rapid reduction in glycemic excursions and, as a consequence, a rapid reduction in the amount of insulin they needed to take," Dandona explains.

Several figures in this presentation by Dandona clearly demonstrate this effect.

These improvements occurred rapidly, within 1-2 days of beginning treatment with liraglutide and they reversed just as rapidly when treatment was discontinued, signifying that it was the drug that was

responsible for these beneficial effects.

The mechanism behind these improvements is not well-understood but Dandona and his co-authors suggest that liraglutide may be suppressing the post-meal increase in glucagon, the hormone that raises glucose levels, in type 1 diabetics.

Dandona and his colleagues are now planning a much larger, multicenter study of liraglutide in type 1 diabetics.

"We will be investigating in detail the hypothesis that it is liraglutide's ability to suppress glucagon that significantly reduces the wide swings in blood glucose levels that type 1 diabetics -- even those with very good glucose control -- live with everyday," says Dandona.

The retrospective study involved 14 adult type 1 diabetics who took liraglutide for periods ranging from one week to 24 weeks.

More information: http://www.eje-online.org/content/early/2011/06/06/EJE-11-0330.abstract

Provided by University at Buffalo

Citation: Study suggests drug significantly improves glycemic control in type one diabetics on insulin (2011, June 15) retrieved 5 May 2024 from https://medicalxpress.com/news/2011-06-drug-significantly-glycemic-diabetics-insulin.html