FIGHT study proves type-2 diabetes therapy ineffective in the treatment of high-risk heart failure patients

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In an attempt to correct defects in the energy generation that contributes to poor pump function among heart failure patients, researchers examined whether the diabetes drug liraglutide, could improve the condition of patients with advanced heart failure. Despite improvements in blood sugar control, the therapy did not improve the clinical stability or pumping action of the heart in patients with advanced heart failure. Kenneth B. Margulies, MD, a professor of Medicine and research director for Heart Failure and Transplantation in the Perelman School of Medicine at the University of Pennsylvania, presented data from the Functional Impact of GLP-1 for Heart Failure Treatment (FIGHT) study at the American Heart Association Scientific Sessions 2015.

Heart failure, a chronic condition in which the heart does not pump enough blood through the body, affects more than 5 million Americans.

"Abnormalities in the way the heart generates energy from fats and glucose, including resistance to the normal actions of insulin, have been shown to contribute to a patient's risk of heart failure. But no current heart failure treatments target these metabolic derangements," said Margulies, the principle investigator of the study. "Because liraglutide counters insulin resistance, and earlier pilot studies suggest that severely weakened hearts have the greatest metabolic defects and potential benefit, it seemed most appropriate test the efficacy of liraglutide in a group of patients with advanced heart failure. Unfortunately, the results were not what we had anticipated."

The FIGHT study is the first multicenter trial to evaluate the use of glucagon-like peptide-1 receptor agonists - an injectable drug commonly used to treat type-2 diabetes - for the treatment of high-risk heart failure patients with reduced ejection fraction, a measure of the heart's inability to pump blood. Researchers randomized 300 diabetic and non-diabetic participants with high-risk heart failure - those who had been hospitalized for heart failure within the past two weeks - into two groups: those to receive daily liraglutide injections and those receiving daily placebo injections. Subjects were assessed at baseline and eased onto the proper dosage for the first month. During the six-month study period, measurements of heart structure and function with echocardiography, serial assessments of subjects' activity tolerance with six-minute walk tests, and quality of life questionnaires did not reveal any significant favorable or unfavorable effects of liraglutide in these patients.

"The results indicate that while liraglutide acted as intended, controlling blood sugar and promoting weight loss in diabetic participants, there was not a significant impact on heart failure in either group. Interestingly, liraglutide had no effect on blood sugar or weight loss among the non-diabetic patients in the study," Margulies said. "Although this did not support our hypothesis of beneficial effects in patients with advanced heart failure, additional studies are required to explore whether patients with earlier stages of heart failure might benefit from liraglutide or other GLP-1 agonists."

Since one-third of patients with heart failure also have diabetes, and other treatments to lower blood sugar in diabetics have increased the risk of heart failure, Margulies notes that it remains important to establish the safety of any diabetes therapy in patients with heart failure. Additional research, he says, will ultimately determine whether GLP-agonists, like liraglutide, can be used safely among patients with various stages of heart failure.