

Empagliflozin lowers high blood pressure and blood sugar in diabetics

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An investigational drug to treat Type 2 diabetes, empagliflozin, lowers blood pressure in patients with Type 2 diabetes and hypertension (high blood pressure), a new study finds. The results were presented Sunday in a late-breaking abstract at the joint meeting of the International Society of Endocrinology and The Endocrine Society: ICE/ENDO 2014 in Chicago.

This improvement in blood pressure reportedly was accompanied by a reduction in blood glucose (sugar) levels after 12 weeks of treatment with the drug, which is under development by Germany-based Boehringer Ingelheim Pharma.

"Tight blood pressure control in [patients](#) with hypertension and Type 2 diabetes is known to reduce the risk of death and complications related to diabetes," said a study co-investigator, Afshin Salsali, MD, executive director of the Diabetes and Metabolism therapeutic area for Boehringer Ingelheim Pharma, which funded the study. "Our results suggest the potential to reduce the risk of cardiovascular events with long-term treatment."

However, he emphasized that this hypothesis awaits confirmation in the long-term EMPA-REG OUTCOMETM trial (NCT01131676 on ClinicalTrials.gov), which is expected to complete in 2015.

The researchers tested two doses of empagliflozin, 10 milligrams (mg) and 25 mg, compared to a placebo, or "dummy" pill, in patients with

Type 2 diabetes and [high blood pressure](#), which ranged from 130 over 80 to 159 over 99 millimeters of mercury (mm Hg). Of the 824 patients, 276 received the lower dose of empagliflozin and another 276 received the higher dose; 272 patients received the placebo. All patients wore a blood pressure cuff that monitored their blood pressure at regular intervals for 24 hours before the start of the study and after 12 weeks of treatment. They also gave blood samples for checking their hemoglobin A1c, a measure of long-term blood sugar control.

Study data showed the differences between the average decreases with empagliflozin treatment and the average increases in results of patients treated with placebo. Empagliflozin at the 25-mg dose demonstrated the greatest 12-week reduction in both [systolic blood pressure](#) (the top number in a blood pressure reading) and diastolic blood pressure (bottom number). On average, [blood pressure](#) fell 4.2 mm Hg in comparison to placebo for [systolic pressure](#) and 1.7 mm Hg for diastolic in the group receiving 25 mg of empagliflozin. Patients who received the 10-mg dose had average decreases of 3.4 and 1.4 mm Hg compared to placebo in systolic and [diastolic blood pressures](#), respectively.

From the start to the end of the study, the average hemoglobin A1c level dropped 0.62 percentage points with 10-mg empagliflozin and 0.65 percentage points with the 25-mg dose compared to placebo.

Salsali said empagliflozin improves blood sugar levels by reducing glucose re-absorption in the kidneys, leading to glucose elimination in the urine. He also said patients tolerated the drug well, with no increased rate of side effects in the empagliflozin groups compared to placebo. Most adverse events reported in all three groups were mild in intensity.

Provided by The Endocrine Society

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