

Dapagliflozin for the Treatment of Type 2 Diabetes

Since 1960, the number of people with diabetes in the United States has tripled. Today, 24 million Americans have type 2 diabetes. This is the type of diabetes that often responds initially to oral medicines, although as the disease progresses, many patients eventually need to take insulin to control their blood sugar. Over time, high levels of blood sugar can cause serious complications including heart and vascular disease, blindness, and nerve and kidney damage.

Many drugs currently approved to treat type 2 diabetes have limitations, such as gastrointestinal side effects (eg, metformin [Glucophage] and acarbose [Precose]), weight gain and low blood sugar (eg, glipizide [Glucotrol]), weight gain, fluid retention, and heart failure (eg, pioglitazone [Actos]), the need for injections (eg, exenatide [Byetta]), or high cost (eg, sitagliptin [Januvia]). An ideal drug for type 2 diabetes would not cause weight gain, would reduce



blood sugar but not let it fall too low, would be taken once daily by mouth, and would prevent the development of serious complications. Two drug companies, working together, believe they may have developed such a drug.

This new drug, dapagliflozin, works differently from any other diabetes medication. It works in the kidneys and inhibits the actions of a protein called sodium glucose cotransporter 2 (SGLT2). Normally, SGLT2 reabsorbs sugar and prevents it from being lost in the urine. Dapagliflozin, on the other hand, prevents sugar from being reabsorbed. As this sugar is eliminated in urine, the body loses 200–300 calories each day. In addition, compared with some other diabetes treatments, dapagliflozin not only prevents fluid retention, but may even help eliminate excess water from the body.

In clinical studies, single oral doses of dapagliflozin worked for 24 hours, so the drug can be taken once daily and remain effective all day. In people with diabetes, dapagliflozin decreases fasting blood sugar, decreases hemoglobin A1c

FOR MORE INFORMATION

Agency for Healthcare Research and Quality
<http://effectivehealthcare.ahrq.gov/healthInfo.cfm?infotype=sg&DocID=28&ProcessID=6>

Medline Plus Medical Encyclopedia
www.nlm.nih.gov/medlineplus/ency/article/000313.htm

National Institute of Diabetes and Digestive and Kidney Disorders
<http://diabetes.niddk.nih.gov/dm/pubs/riskfortype2/index.htm>

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levels (an indication of average blood sugar), and helps with weight loss.

While the drug seems to be tolerated well by most people, no long-term safety information is available yet because no one has taken the drug longer than 12 weeks. Blood sugar does not appear to fall too low with dapagliflozin, which is important from a safety standpoint. But there

have been some reports of vaginal infections and urinary tract infections in people taking the dapagliflozin. Any association between dapagliflozin and urogenital infections will need to be explored further.

Dapagliflozin is not yet approved in any country, but keep watching for updates about this exciting new development.