

Drug Information Centre

New FDA approved drug for diabetes Empagliflozin

Diabetes is a chronic disease that occurs either when the pancreas does not produce enough insulin or when the body cannot effectively use the insulin it produces

Type 1 diabetes (called insulin-dependent) is characterized by deficient insulin production and requires daily administration of insulin. **Type 2 diabetes** (called non-insulin-dependent) results from the body's ineffective use of insulin.

Uncontrolled level of glucose may lead to serious complication, damaging the blood vessel, affecting the cardiovascular system, Nerve damage, lead to visual loss & blindness, and kidney failure.

Type 2 diabetes is the most common type, comprises 90% of people with diabetes around the world.

On August 1/2014 the Food & Drug administration approved the application of New drug Empagliflozin to treat type 2 diabetes, Empagliflozin is a sodium glucose cotransporter2 (SGLT2) worked by increasing the amount of glucose excreted in urine, can be used by itself as an addition to diet & exercise, or with other drugs for type 2 diabetes.

Empagliflozin acts on sodium glucose cotransporter, SGLT2 are proteins fundamental to the kidney's role in filtering blood sugar and are responsible for about 90 percent of the reabsorption of glucose back into the bloodstream. They reduce glucose reabsorption in the kidney, leading to excretion of excess glucose via the urine. With a mode of action independent of insulin resistance or beta cell function.

Empagliflozin is not indicated for patient on dialysis or with End stage renal disease

The application of empagliflozin was based on the result of phase III clinical trial programme, comprised of 10 multinational clinical trials over 14,500 people with type 2 diabetes

On June of 2013 Boehringer Ingelheim and Eli Lilly company announced the result of 52-week phase III trial investigate the addition of empagliflozin on existing oral-glucose lowering therapy in type 2 diabetes patients, the result of the study demonstrate a significant decrease in HA1c (average blood glucose) on 24 week and reduction in body weight.

A systemic review and meta-analysis were done **on April 28/2014** to detect the efficacy and safety of empagliflozin, it includes 10 studies with 6203 participants, the result showed a mean change in haemoglobin A1c -0.62% for empagliflozin 10 mg and -0.66 % for empagliflozin 25mg, it was also associated with body weight loss and favourable effect on blood pressure.

Further study started **on October/2012** for the efficacy and safety of empagliflozin and metformin on type 2 diabetes patient is still ongoing with estimation of study completion date **on November/2014**

Because it has different mechanism of action than other classic antidiabetic drugs, and taking into account the clinical evidence to date Empagliflozin hold promise as an important addition to other antidiabetic drugs as treatment option for type 2 diabetes.

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