



Ipragliflozin in Type 1 Diabetes: Assessing Impact on Glycemic Control and Quality of Life

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DESCRIPTION

Ipragliflozin is a type of medication that belongs to the class of Sodium-Glucose Co-Transporter 2 (SGLT2) inhibitors. SGLT2 inhibitors work by blocking the reabsorption of glucose in the kidneys, leading to increased urinary glucose excretion and lower blood glucose levels. SGLT2 inhibitors are approved for the treatment of type 2 diabetes, but they are also being investigated for their potential benefits in type 1 diabetes. Type 1 diabetes is a chronic condition that occurs when the pancreas produces little or no insulin, a hormone that regulates blood glucose levels. People with type 1 diabetes need to take insulin injections or use an insulin pump to control their blood glucose levels. However, insulin therapy alone may not be enough to achieve optimal glycemic control and prevent long-term complications, such as cardiovascular diseases, kidney diseases, nerve damage, and optical damage. Therefore, there is a need for additional therapies that can improve glycemic control and reduce the risk of hypoglycemia and weight gain, which are common side effects of insulin therapy.

Ipragliflozin is one of the SGLT2 inhibitors that has been studied for its efficacy and safety in people with type 1 diabetes. In a phase 3 randomized controlled trial, the ipragliflozin of 50 mg was added to insulin therapy in 210 adults with type 1 diabetes who had inadequate glycemic control (HbA1c 7.0%-10.0%). The results showed that after 24 weeks, ipragliflozin significantly reduced HbA1c by 0.55% compared to placebo, as well as daily insulin dose by 5.9 units and body weight by 2.8 kg. Ipragliflozin also improved other glycemic parameters, such as fasting plasma glucose, postprandial glucose, and time in range. The most common adverse events were genital infections, urinary tract infections, and hypoglycemia. However, there were no cases of Diabetic Ketoacidosis (DKA), a serious and potentially life-threatening complication of type 1 diabetes that can be triggered by SGLT2 inhibitors. Based on these findings, ipragliflozin was approved in 2019 for use in combination with insulin in adults with type 1 diabetes. However, ipragliflozin is not yet approved for this indication in

other countries, and its use in type 1 diabetes is still considered experimental and off-label. Moreover, the safety and efficacy of ipragliflozin in type 1 diabetes may vary depending on the dose, duration, and population studied. Therefore, more studies are needed to confirm the benefits and risks of ipragliflozin in different settings and subgroups of people with type 1 diabetes. Ipragliflozin is a potential option for people with type 1 diabetes who need additional therapy to improve their glycemic control and quality of life. It can lower blood glucose levels by increasing urinary glucose excretion, and it can also reduce insulin dose, body weight, and blood pressure. However, it can also increase the risk of infections, hypoglycemia, and DKA, and it requires careful monitoring and adjustment of insulin therapy. Ipragliflozin is currently not available in other countries. More research is needed to determine the optimal dose, duration, and patient selection for ipragliflozin in type 1 diabetes.

CONCLUSION

The mechanism of action of ipragliflozin and how it differs from other SGLT2 inhibitors, such as dapagliflozin, canagliflozin, and empagliflozin, in terms of pharmacokinetics, pharmacodynamics, and selectivity for SGLT2. The clinical trials and studies that have compared ipragliflozin with other SGLT2 inhibitors or placebo in people with type 1 diabetes, and how they have assessed the outcomes of glycemic control, hypoglycemia, weight loss, blood pressure, renal function, and quality of life. The real-world evidence and experience of using ipragliflozin in people with type 1 diabetes, and its influence on clinical practice, patient satisfaction, and adherence to treatment. The guidelines and recommendations for the use of ipragliflozin in people with type 1 diabetes, and the way they address the issues of patient selection, dose titration, insulin adjustment, monitoring, and management of adverse events, especially DKA. The future perspectives and challenges of using ipragliflozin in people with type 1 diabetes, and how they relate to the ongoing research, regulatory approval, cost-effectiveness, patient education and support.

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