The Weight-Reducing Effect of Licogliflozin, A Novel Dual Sodium-Glucose Co-Transporter 1 And 2 Inhibitor: A Systematic Review And Meta-Analysis of Randomized Controlled Trials

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Abstract

Background

Licogliflozin is a dual sodium-glucose co-transporter 1 and 2 (SGLT 1, 2) inhibitor, inhibiting glucose absorption by the intestine and inhibiting glucose reabsorption by the kidney, and thus reducing calorie content. We aimed to determine the efficacy of licogliflozin on body weight and blood pressure in obese/overweight participants with/without type 2 diabetes mellitus (T2DM).

Methods

We systematically searched the PubMed, Cochrane Library, Scopus, and Web of Science databases for randomized controlled trials (RCTs) assessing licogliflozin among obese/overweight participants. We selected the studies relevant to our eligibility criteria. We performed the metaanalysis on different licogliflozin doses using RevMan 5.4.

Results

We identified five RCTs comprising 905 obese/ overweight participants. The studies assessed the doses ranging from 2.5 mg to 150 mg once daily (qd) for $\geq$ 12 weeks. Licogliflozin reduced weight by -0.75 kg; 95% CI [-1.14, -0.36] for 2.5 mg qd up to -4.20 kg; 95% CI: [-4.55, - 3.84] for 150 mg qd. Moreover, licogliflozin 50 mg qd reduced systolic and diastolic blood pressure significantly ($p<0.05$). The combined participants had no risk for serious adverse events or hypoglycemia.

Conclusion

Licogliflozin is a novel SGLT 1, 2 inhibitors with a beneficial cardio protective efficacy. It reduces body weight significantly with different doses. Moreover, it reduces systolic and diastolic blood pressure.

Keywords

Licogliflozin, dual SGLT1, 2 inhibitor, SGLT2 inhibitor, Obesity, T2DM, meta-analysis. Forest plot shows different doses efficacy of licogliflozin on body weight change in combined participants with/without T2DM.