

Gliflozins: initial review of litera

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Gliflozins, like canagliflozin, dapagliflozin and empagliflozin, are a new class of approved oral antidiabetic agents that specifically inhibit sodium-glucose co-transporter 2 function in the kidney, thus preventing renal glucose reabsorption and increasing glycosuria in diabetic individuals while reducing hyperglycemia with a minimal risk of hypoglycemia. They reduce glycated hemoglobin and exert favorable effects beyond glucose control with consistent body weight, blood pressure, and serum uric acid reductions [1,2].

Gliflozins have been evaluated in patients with type 2 diabetes treated with diet/exercise, metformin, dual oral therapy or insulin. Empagliflozin showed remarkable reductions in cardiovascular/all-cause mortality and in hospitalization for heart failure in patients with previous cardiovascular disease. Positive renal outcomes were also shown with empagliflozin [2]. Further, a significant protective effect on sudden cardiac death was also proved by empagliflozin [3].

There is a recent strong rationale for combining a dipeptidyl peptidase-4 inhibitor and a sodium-glucose co-transporter inhibitor in patients with type 2 diabetes because the two drugs exert different and complementary glucose-lowering effects. Dual therapy is more potent than either monotherapy in patients treated with diet and exercise or already treated with metformin. Combining the two pharmacological options is safe and does not induce hypoglycemia [4].

Dapagliflozin was studied as add-on therapy to sitagliptin with or without metformin, and was shown to lower glycated hemoglobin levels and body weight. Two fixed-dose combinations that could simplify the anti-hyperglycaemic therapy and improve drug compliance are already available (saxagliptin-dapagliflozin and linagliptin-empagliflozin) and others are in current development [5].

The mostly reported adverse events of gliflozins are genital mycotic infections; concern about a risk of ketoacidosis and bone fractures has been also raised, which deserves caution and further evaluation [2].

References

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