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Opinion

Role of Sglt2 Inhibitors in Modern Medicine

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Abstract

SGLT2 inhibitor is a new invention in medical practice which has changed the progress and treatment part of life threatning medical conditions like type 2 diabetes mellitus causing chronic kidney disease and end stage renal disease, it has changed the concept of treatment of cardicac failure also with compromised left ventricular ejection fraction and retained left ventricular ejection fraction, in combination of dpp4 inhibitor and metformin as a part of polypill it has shown great results with compliance and economy in control of diabetes mellitus, it does not give rise to exhaustion of islets of beta cells of langerhans as it does not affect the endocrinal function of the pancreas and this combination controls hba1c drastically (1.2) without causing hypoglycemia, thus it becomes a treatment of choice in triple drug therapy as an alternative to glp1 receptor agonist ,it can be given in dual therapy treatment, so in cases of diabetes mellitus type 2 with lv dysfunction this becomes a treatment of choice.

Keywords: general medicine; chronic kidney; cardicac failure

Salutary Action of Sglt2 Inhibitors

SGLT2 inhibitors are a new group of diabetic medications that lowers the absorption of glucose in the kidney, decrease proteinuria, control blood pressure, and are associated with weight loss. SGLT2 inhibitors give complementary therapy independent of insulin secretion or action with proved glucose-lowering effects. placebo-controlled clinical trials have demonstrated that these medications can decrease cardiovascular death, progression of kidney disease, and all-cause mortality in diabetic and non-diabetic patients. Canagliflozin has shown superiority in primary prevention of atheromatous strokes. Interestingly, SGT2 inhibitors like dapagliflozin have also proven to decrease heart failure admissions and cardiovascular endpoints in non-diabetic patients, suggesting pleiotropic effects. Oxidative stress was also reversed by empagliflozin in porcine endothelial cells by inhibition of nitric oxide formation. It decreases the atherosclerosis and endothelial inflammation thus it reduces Hscrp, it decreases the afterload and preload of heart by diuretic effect and natriuretic effect, it reduces Raas activities, it has a uricosuric action. By acting on the SGLT 1 receptor it reduces the afterload of the heart and helps in the elasticity of the arterial wall, by its indirect effect betahydroxybutrate is also increased which also helps in reducing the afterload, it reduces the glomerular pressure and partially dilates the renal artery, it decreases NHE3, it has known to increase erythropoietin secretion which helps indirectly in the treatment of intractable cardiac failure. By natriuresis it decreases the blood volume and body water and plasma volume, it decreases the albuminuria by more than 90

Conclusion

SGLT2 inhibitors are potent antidiabetic medications with utility in the treatment of patients with T2DM and heart failure. Furthermore, SGLT2 inhibitors have shown to reduce the progression to advanced forms of kidney disease and its complications. These medications should be in the management of patients with diabetic kidney disease with and without chronic kidney disease as they confer protection against cardiovascular/renal death and improve all-cause mortality. It also prevents secondary caerdiac fibrosis due to ASCVD thus it helps in preserving ejection fraction and prevents scar induced resistant cardiac arrthymias, its role in primary dilated cardiomyopathy is to be established. This can be the first drug of therapy in case of intolerance to metformin along with lifestyle modification

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