EXPLORING THE EXPANDED THERAPEUTIC LANDSCAPE OF SGLT2 INHIBITORS: BEYOND DIABETES MANAGEMENT

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Sodium-glucose Co transporter 2 inhibitors (SGLT2i) have traditionally been synonymous with their pivotal role in managing diabetes mellitus. However, recent research has unearthed a myriad of novel applications for these agents beyond their antihyperglycemic effects. This abstract delves into the expanding therapeutic horizon of SGLT2 inhibitors, elucidating their diverse pharmacological actions and emerging clinical applications.SGLT2 inhibitors primarily exert their effects by blocking renal glucose reabsorption, leading to glycosuria and subsequent glucose lowering. Beyond glycaemic control, these agents demonstrate multifaceted actions, including natriuresis, blood pressure reduction, and weight loss. Moreover, SGLT2 inhibitors have shown promising effects on mitigating cardiovascular and renal complications in patients with or without diabetes, attributed to their pleiotropic cardiovascular benefits. Beyond diabetes management, SGLT2 inhibitors have garnered attention for their potential in treating heart failure (HF) and chronic kidney disease (CKD). Clinical trials have showcased the remarkable efficacy of SGLT2 inhibitors in reducing HF hospitalizations and ameliorating renal function decline, irrespective of diabetes status. These findings have prompted guideline revisions, endorsing the use of SGLT2 inhibitors in HF and CKD management, ushering in a new era of personalized medicine. While generally well-tolerated, SGLT2 inhibitors are associated with unique adverse effects, including genitourinary infections and euglycemic diabetic ketoacidosis (DKA). Heightened awareness and vigilant monitoring are imperative to mitigate these risks, especially in vulnerable populations such as the elderly and those with impaired renal function. In conclusion, SGLT2 inhibitors transcend their traditional role in diabetes management, offering a paradigm shift in cardiovascular and renal disease therapeutics. Their pleiotropic benefits, encompassing glycemic control, cardiovascular protection, and renal preservation, underscore their versatility in addressing multifaceted disease processes. As ongoing research continues to unravel additional therapeutic avenues, SGLT2 inhibitors stand poised as a cornerstone in the holistic management of cardiometabolic disorders, heralding a new era of patient-centered care.

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