LETTER TO THE EDITOR

Glucagon like peptide-1 receptor agonist (Ozempic): Revolutionising chronic kidney disease management in diabetes

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Dear Editor, It is estimated that over 50% of patients worldwide with T2DM develop CKD,[1] a major complication contributing to the rising global burden of renal failure. While therapies like ACEIs and ARBs have long been the mainstay treatment for managing diabetic nephropathy, recent advancements in this field are promising. Glucagon-like peptide-1 receptor agonist (GLP-1RAs) are a class of drugs that mimic the action of the endogenous hormone GLP-1, which modulates pancreatic islet cell function to enhance insulin secretion. Since 1993, when studies first demonstrated the glucose-lowering effects of GLP-1 RAs in T2DM, these drugs have been widely used in combatting diabetes. Recently, the GLP-1 RA semaglutide (Ozempic) has gained significant popularity due to its additional benefits such as weight loss and kidney protection. The latest FLOW trial has demonstrated the positive effects of GLP-1 RA semaglutide (Ozempic) on renal, cardiovascular and survival outcomes.[2]

A study conducted in 2017 highlighted that GLP-1 RAs exhibit renoprotective effects, independent of their glucose-lowering properties.[3] Although the exact molecular mechanisms underlying renal protection remain incompletely understood, GLP-1 RAs are known to preserve kidney function through multiple pathways. GLP-1 RAs mitigate oxidative stress by stimulating cyclic adenosine monophosphate-protein kinase A (cAMP-PKA) pathway, which reduces reactive oxygen species (ROS) production. In diabetic patients, albuminuria is strongly associated with poor renal outcomes and reduced survival, particularly in those with macroalbuminuria (>300mg/g). Clinical trials have demonstrated that GLP-1 RAs significantly reduce urinary albumin excretion,[4] slow the decline of eGFR, and prevent the onset of macroalbuminuria. A large-scale trial the FLOW trial, found that semaglutide significantly lowered the risk of CKD progression including a reduced incidence of major kidney events, renal death, and sustained decline in eGFR.[5]

Despite the promising findings, GLP-1 RAs are not yet widely utilised in the management of CKD especially in countries like Pakistan. As the prevalence of T2DM and CKD continues to rise, it is crucial to promote therapies like GLP-1 RAs, which offer a multifaceted approach to managing diabetic kidney disease. However, further research is needed to fully understand the long-term benefits of this treatment and optimise strategies for patients with T2DM and CKD.

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