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The role of Sglt2i in DM treatment

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The treatment options for patients with type 2 diabetes (T2D) and cardiovascular (CV) disease (CVD) has recently expanded at an unprecedented rate. The findings of significant CVD benefits with new anti-hyperglycemic agents (AHGA) such as sodium glucose cotransporter 2 (SGLT2) inhibitors and glucagon-like peptide-1 (GLP1) agonists have dramatically changed the narrative after drugs such as the peroxisome proliferator-activated receptor (PPAR)-gamma agonists, saxagliptin and alogliptin from the class of dipeptidyl-peptidase-4 (DPP4) inhibitors showed adverse CVD outcomes. After concerns were raised about the anti-hyperglycemic agent rosiglitazone, a PPAR-gamma agonist regarding increased risk of myocardial infarction (MI), the United States (U.S.) Food and Drug Agency (FDA) issued a guidance requiring pre-and post-approval studies demonstrating CVD safety.

This resulted in multiple large cardiovascular outcomes trials in recent years that have transformed the diabetes management landscape.Of all the AHGA agents which have been studied, SGLT2 inhibitors and GLP1-agonists standout amongst the rest as having clear, demonstrable CVD benefits The EMPA-REG-OUTCOME trial which studied SGLT2 inhibitors versus placebo in patients with T2D and known atherosclerotic CVD (ASCVD) was the first to demonstrate benefit with a significant reduction in its composite primary outcome of CVD mortality, non-fatal MI or non-fatal stroke.4 Furthermore, it showed a significant reduction in all-cause mortality, CVD mortality and a significant reduction in hospitalization for heart failure (HF).4 The reduction in CVD mortality was thought to be driven by reduction in HF hospitalizations. The CANVAS program later using the same composite primary outcome demonstrated superiority of another SGLT2 inhibitor, canagliflozin, versus placebo in patients with T2D and high CVD risk.5 The CVD benefits of SGLT2 inhibitors was confirmed as a true class effect with the results from the DECLARE-TIMI-58 study which demonstrated superiority of dapagliflozin vs. placebo in its composite primary outcome of CVD death or hospitalization for HF. The statistical superiority of this primary outcome was shown to be primarily driven by hospitalization for HF.

Biography

Dr. Hazem Rayyan-Consultant Endocrinology in King Salman Military Hospital-Tabuk-Ksa. His research interest was in Diabetes, cardiovascular disease and Drug Agency.

He won many awards for his research. He was member for European Board of Endocrinology also Member of Aace, Ese.

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