Comparison of sodium-glucose co-transporter-2 inhibitors and glucagon-like peptide-1 receptor agonists in myocardial infarction patients with type 2 diabetes

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Funding Acknowledgements: Type of funding sources: Public Institution(s). Main funding source(s): Stockholm Regional Council

Background: Both sodium-glucose cotransporter 2 inhibitors (SGLT2i) and glucagon-like peptide-1 receptor agonists (GLP1-RA) have been shown to reduce the risk of adverse cardiovascular outcomes in type 2 diabetes mellitus (T2DM) patients with established atherosclerotic cardiovascular disease.

Purpose: The aim of this study was to assess the comparative effectiveness of SGLT2i and GLP1-RA in myocardial infarction (MI) patients with T2DM.

Methods: This observational cohort study included MI patients with T2DM who were treated with SGLT2i or GLP1-RA within 180 days of hospital discharge between 2013 and 2021. Data was acquired from the SWEDEHEART registry, a nationwide quality register. The co-primary endpoints of this study were a composite of MI, ischemic stroke and all-cause mortality (MACE) and a composite of heart failure hospitalisation (HHF) and all-cause mortality. Inverse probability of treatment weighting was used to adjust for differences in baseline covariates between the treatment groups.

Results: This study consisted of 617 patients who were treated with SGLT2i and 543 patients who were treated with GLP1-RA. We observed no statistically significant differences between SGLT2i and GLP1-RA concerning the risk of MACE (adjusted incidence rate 76 vs. 68 events per 1000 person-years; HR 1.09 [95% CI 0.85 - 1.40]) and the risk of HHF or all-cause mortality (adjusted incidence rate 52 vs. 50 events per 1000 person-years; HR 1.04 [95% CI 0.80 - 1.36]). Similarly, we did not observe any statistically significant differences between the treatment groups concerning the secondary outcomes of MI (adjusted incidence rate 63 vs. 53 events per 1000 person-years; HR 1.08 [95% CI 0.83 - 1.40]), stroke (adjusted incidence rate 7 vs. 6 events per 1000 person-years; HR 1.22 [95% CI 0.57 - 2.87]), HHF (adjusted incidence rate 45 vs. 38 events per 1000 person-years; HR 1.06 [95% CI 0.80 - 1.41]) and all-cause mortality (adjusted incidence rate 11 vs. 15 events per 1000 person-years; HR 1.06 [95% CI 0.63 - 1.82]).

Conclusions: There were no statistically significant differences between SGLT2i and GLP1-RA concerning the risk of recurrent ischemic events, HHF and all-cause mortality in this cohort of MI patients with T2DM.