Glucagon-like peptide-1 receptor agonists and sodium glucose cotransporter-2 inhibitors combination therapy after acute myocardial infarction in patients with type 2 diabetes mellitus: a dynamic duo?

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Introduction: Previous studies have shown that glucagon-like peptide-1 receptor agonists (GLP-1 Ras) and sodium glucose cotransporter-2 inhibitors (SGLT2i) improved survival in patient with type 2 diabetes mellitus (TD2) after acute myocardial infarction (AMI). GLP-1 RAs and SGLT2i act with different mechanisms, GLP-1 RA have been shown to reduce atherosclerosis-related events, while SGLT2i were demonstrated to reduce the risk of heart failure (HF) after AMI.[1] *Aim:* To evaluate the effect of GLP1 RAs and SGLT 2i combination therapy on major adverse cardiac events (MACE) after AMI.

Patients and Methods: This prospective observational study was conducted in Dubrava University Hospital and included T2D patients hospitalized for AMI, followed for 12 months. Data on demographics, comorbidities, medications, and MACE, including death, recurrent AMI, stroke, target vessel revascularization, new-onset HF and atrial fibrillation (AF) were collected. Statistical analyses were performed using MedCalc software.

Results: Of 2757 AIM patients, 663 T2D patients were included (68.5% male), with a median age of 67 years (IQR 59-75). A total of 157 patients (23.7%) were prescribed the combination of GLP-1 RAs and SGLT2i at discharge. All patients in our study used semaglutide as their GLP-1 RAs agent. The SGLT2i/GLP-1 RAs group had a higher baseline BMI (32.3 kg/m² vs. 28.6 kg/m², p<0.0001) and maintained a higher BMI throughout follow-up (30.2 kg/m² vs. 28.5 kg/m², p<0.0001). However, SGLT2i/GLP-1 RAs group achieved higher weight loss (median BMI decrease of 1.75 vs. 0.075, p<0.0001) and had lower incidence of MACE (20.5% vs. 23.7%, p=0.0004) and AF (24.2% vs 24.4%, p=0.012). Number needed to treat for prevention of MACE was 6.

Conclusion: In this prospective observational study, SGLT2i/GLP-1 RAs combination therapy was associated with a lower incidence of MACE. What we consider a novel finding is that this combination reduced the incidence of new-onset AF after myocardial infarction probably due to better weight reduction as well as GLP-1 RAs positive effect on reducing atrial fibrosis.

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LITERATURE

1. Gourdy P, Darmon P, Dievart F, Halimi JM, Guerci B. Combining glucagon-like peptide-1 receptor agonists (GLP-1RAs) and sodium-glucose cotransporter-2 inhibitors (SGLT2is) in patients with type 2 diabetes mellitus (T2DM). Cardiovasc Diabetol. 2023 Apr 1;22(1):79. https://doi.org/10.1186/s12933-023-01798-4