





Efficacy and safety of early initiation of sodium-glucose cotransporter 2 inhibitors following acute myocardial infarction – a single-center prospective observational study

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Introduction: Despite the importance of timely revascularization in acute myocardial infarction (AMI), the necessity for additional medical treatment for the prevention of ischemic heart disease and heart failure (HF) is still high¹. Recent trials (EMMY, DAPA-MI) demonstrated the benefit of early initiation of sodium-glucose cotransporter 2 (SGLT2) inhibitors in patients with AMI^{2,3}. SGLT2 inhibitors exhibit effects that could modify the progression of coronary disease to chronic HF. We aimed to assess the efficacy and safety of early initiation of SGLT2i in patients following AMI.

Patients and Methods: This was a prospective, single-center, observational study conducted at University Hospital Dubrava from September 2021 to February 2024. We included patients with type 1 AMI who developed signs of HF. Exclusion criteria were: prior HF, treatment with SGLT2 inhibitors, or death during initial hospitalization. Before discharge, echocardiography was performed on all patients. Ejection fraction (EF), NYHA class, renal functions, levels of NT-proBNP, contrast-induced acute kidney injury, and body weight were assessed at six and twelve months. The patient registry is registered at ClinicalTrials.gov (NCT06090591). Categorical variables were presented as frequencies, and continuous variables as median and interquartile range. Statistical analysis was performed using JASP software (v. 0.19.1).

Results: We included 188 patients, and 31% were women. There were 110 patients (58.5%) with ST-elevation myocardial infarction and 78 (41.5%) with non-ST-elevation myocardial infarction. In total, 98.5% (N=185) underwent coronary angiography. Most patients had hypertension (83.5%), hyperlipidemia (80.3%), and 34% had diabetes. Most patients had HF with reduced EF (N=110, 58.5%), followed by HF with preserved EF (N=46, 24.5%). Death occurred in 15 patients (8%). Empagliflozin was prescribed to 117 patients (62.2%), and dapagliflozin to 70 (37.8%). There was a statistically significant reduction of NT-proBNP levels ($p<0.001$), NYHA class ($p<0.001$), and body weight ($p<0.001$), while median EF improvement was 4.5% ($p<0.001$). There was no significant effect on estimated glomerular filtration rate ($p=0.6$). No patient developed contrast-induced acute kidney injury.

Conclusion: SGLT2 inhibitors have multiple positive effects and no safety concerns and therefore should be initiated early following AMI owing to their cardiovascular and metabolic potential benefits once the patient is hemodynamically stable.

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LITERATURE

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