Online version at https://www.minervamedica.it

Minerva Cardiology and Angiology 2023 mese;71(0):000–000
DOI: 10.23736/S2724-5683.22.06200-7

REVIEW

Sodium-glucose cotransporter-2 inhibitors: a swinging pendulum in treatment of acute myocardial infarction

Buena AZIRI [1], Edin BEGIC [1, 2] *, Bojan STANETIC [3, 4], Zorica MLADENOVIC [5], Tamara KOVACEVIC-PRERADOVIC [3, 4]

[1]Department of Pharmacology, Sarajevo Medical School, Sarajevo School of Science and Technology, Sarajevo, Bosnia and Herzegovina; [2]Department of Cardiology, Prim. Dr. Abdulah Nakas General Hospital, Sarajevo, Bosnia and Herzegovina; [3]Department of Cardiology, University Clinical Centre of the Republic of Srpska, Banja Luka, Bosnia and Herzegovina; [4]Department of Internal Medicine, Faculty of Medicine, University of Banja Luka, Banja Luka, Bosnia and Herzegovina; [5]Department of Cardiology, Military Medical Academy, University of Defense, Belgrade, Serbia

*Corresponding author: Edin Begic, Department of Cardiology, Prim.Dr. Abdulah Nakas General Hospital, 71000 Sarajevo, Bosnia and Herzegovina. E-mail: begic.edin@ssst.edu.ba

ABSTRACT

INTRODUCTION: Sodium-glucose cotransporter-2 (SGLT2) inhibitors are integral in treating patients with heart failure, regardless of the existence of diabetes mellitus. In light of their benefits on the heart muscle, the question of their effect on acute coronary syndrome is raised, and a hypothesis as to whether they can be implemented in its treatment is proposed. The aim of the article was to indicate the potential of using SGLT2 inhibitors in the treatment of myocardial infarction (MI).

EVIDENCE ACQUISITION: A PubMed search for articles published between October 2017 and May 2022 was conducted using the following keywords: "SGLT2 inhibitors," "Acute Coronary Syndrome," "Treatment," "Prognosis." Reference lists of identified articles were searched for further articles.

EVIDENCE SYNTHESIS: Reports from clinical trials and animal studies thus far investigating mechanistic pathways of SGLT2 inhibitors' effect in relation to acute myocardial infarction were interplayed to extract relevant findings and analyze the safety of this therapy in acute coronary syndrome (ACS) patients.

CONCLUSIONS: SGLT2 inhibitors indicate beneficial effects in acute cardiovascular incident by various mechanisms, and early initiation of therapy may improve outcomes for AMI survivors.

(*Cite this article as*: Aziri B, Begic E, Stanetic B, Mladenovic Z, Kovacevic-Preradovic T. Sodium-glucose cotransporter-2 inhibitors: a swinging pendulum in treatment of acute myocardial infarction. Minerva Cardiol Angiol 2023;71:000-000. DOI: 10.23736/S2724-5683.22.06200-7)

KEYWORDS: SODIUM-GLUCOSE transporter 2 inhibitors; Acute coronary syndrome; Therapeutics; Prognosis.

Introduction

With a prevalence surpassing 3 million people globally, myocardial infarction remains one of the leading causes of death, predominantly due to atherosclerosis, and is clinically manifested with acute coronary syndrome (ACS).[1] Acute myocardial infarction (AMI) is related to an extensive systemic inflammatory response, followed by cardiac remodeling eventually leading to heart failure with reduced ejection fraction, further increasing the morbidity and mortality related to cardiac events.[2]

Even after adequate revascularization (pPCI), optimal pharmacological treatment is of essential importance, as well as adherence to the pre-