THE EFFICACY OF SGLT2 INHIBITORS IN PATIENTS WITH HEART FAILURE AND A PRESERVED EJECTION FRACTION

Bykova N.O., Reva T.V.
Bukovinian State Medical University, Chernivtsi, Ukraine

INTRODUCTION

Heart failure with preserved ejection fraction (HFpEF) accounts for around **half of all cases of heart failure** in the general population. Until recently, clinicians had no pharmacological treatment at their disposal that convincingly and reliably improved the prognosis and reduced mortality or the risk of decompensation in this cohort of patients. The advent of sodium-glucose cotransporter-2 (SGLT2) inhibitors (gliflozins) has been a **genuine breakthrough**, radically changing the current paradigm for the treatment and management of patients with HFpEF.

AIM

The aim of the study was to analyse and summarise the effect of SGLT2 inhibitors (in particular empagliflozin and dapagliflozin) on clinical outcomes, the frequency of hospitalisations for heart failure and the overall prognosis in patients with HFpEF, based on the latest international randomised clinical trials and meta-analyses.

MATERIALS AND METHODS

A detailed analysis has been carried out of the current clinical guidelines of the European Society of Cardiology (ESC Focused Update, 2025) and the results of key multicentre, double-blind, randomised, placebo-controlled trials (EMPEROR-Preserved, DELIVER), as well as a comprehensive meta-analysis of five major studies (Vaduganathan et al., 2022), using the PubMed and Cochrane Library databases.

RESULTS

–21%
EMPEROR-Preserved
empagliflozin 10 mg once daily
HR 0.79; 95% CI 0.69–0.90; p<0.001

–18%
DELIVER
dapagliflozin 10 mg daily
HR 0.82; 95% CI 0.73–0.92; p<0.001

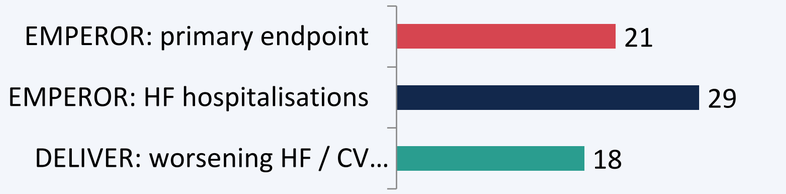
Analysis of data from the key **EMPEROR-Preserved** clinical trial showed that the use of empagliflozin 10 mg once daily in addition to standard therapy significantly reduced (**by 21%**; hazard ratio (HR) 0.79; 95% confidence interval (CI) 0.69–0.90; p<0.001) the relative risk of the primary composite endpoint – which comprised cardiovascular death or first or repeat hospitalisation for heart failure – in patients with a left ventricular ejection fraction (LVEF) >40%. This effect was achieved primarily through a statistically significant reduction in the number of hospitalisations due to decompensated heart failure (**a 29% reduction**).

Similar results were demonstrated in the large-scale **DELIVER** trial of dapagliflozin (10 mg daily), which reported a statistically significant **18% reduction** in the risk of worsening heart failure or cardiovascular death (HR 0.82; 95% CI 0.73–0.92; p<0.001).

Better quality of life
Improved symptoms on the KCCQ scale

Independent of diabetes
Benefit regardless of diabetes, patient status or baseline blood glucose

RELATIVE RISK REDUCTION, %



META-ANALYSIS

A comprehensive meta-analysis of randomised trials (Vaduganathan et al., 2022) confirmed the consistent and robust efficacy of the SGLT2i class in reducing the risk of both primary and recurrent hospitalisations, regardless of the presence or absence of type 2 diabetes, and across a broad range of preserved or moderately reduced ejection fractions.

ADDITIONAL CLINICAL FINDINGS

An important clinical finding is the **improvement in patients' quality of life** (as measured by the KCCQ symptom scale) and the **slowing of the rate of decline in glomerular filtration rate**, which protects kidney function. Based on this compelling evidence, it has been demonstrated that SGLT2 inhibitors are a fundamental class of medicines for the treatment of patients with heart failure, regardless of ejection fraction.

CONCLUSIONS

SGLT2 inhibitors (empagliflozin and dapagliflozin) are the first and, to date, the only class of medicines that have been proven to reliably improve clinical outcomes and reduce the risk of hospitalisation in patients with heart failure with preserved ejection fraction. The organ-protective effect of gliflozins is realised regardless of the presence of concomitant diabetes mellitus, the patient's status and baseline blood glucose levels. The prescription of SGLT2 inhibitors should be a mandatory standard of first-line drug therapy in modern cardiological practice to improve survival and quality of life in this complex patient group.