INPLASY PROTOCOL

To cite: Treewaree et al. Sodium-glucose cotransporter-2 inhibitors reduce cardiovascular outcome and improve health status in Heart failure with preserved ejection fraction: an updated systematic review and meta-analysis. Inplasy protocol 202290023. doi: 10.37766/inplasy2022.9.0023

Received: 06 September 2022

Published: 06 September 2022

Corresponding author:
Rungroj Krittayaphong

rungroj.kri@mahidol.ac.th

Author Affiliation:
Department of Medicine, Faculty of Medicine Siriraj Hospital, Mahidol University, Bangkok, Thailand.

Support: **No funding support.**

Review Stage at time of this submission: **Formal screening of search results against eligibility criteria.**

Conflicts of interest:
None declared.

Sodium-glucose cotransporter-2 inhibitors reduce cardiovascular outcome and improve health status in Heart failure with preserved ejection fraction: an updated systematic review and meta-analysis

Treewaree, S[1]; Kulthamrongsri, N[2]; Owattanapanich, W[3]; Krittayaphong, R[4].

Review question / Objective: **Do SGLT2 inhibitors reduce cardiovascular outcomes and improve health status in patients with heart failure with preserved ejection fraction?**
Condition being studied: **Patients with heart failure with preserved ejection fraction(HFpEF).**
Eligibility criteria: **Inclusion criteria are RCTs or post-hoc analysis of RCTs that compare the outcomes of SGLT2 inhibitors with placebo or other diabetic medication. We will exclude observational studies, case series, case reports, reviews, and studies that did not investigate our outcomes of interest.**

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 06 September 2022 and was last updated on 06 September 2022 (registration number INPLASY202290023).

INTRODUCTION

Review question / Objective: **Do SGLT2 inhibitors reduce cardiovascular outcomes and improve health status in patients with heart failure with preserved ejection fraction?**

Condition being studied: Patients with heart failure with preserved ejection fraction(HFpEF).

METHODS

Search strategy: Two investigators will individually conduct the search on three databases (OVID MEDLINE, Embase, and Cochrane CENTRAL). The search terms included maximized coverage of heart failure and sodium-glucose transporter-2 inhibitors. Only records in the English language will be included.

Participant or population: Patients with heart failure with preserved ejection fraction(HFpEF) who participated in clinical trials comparing SGLT2 inhibitors to placebo or other diabetic medication.

Intervention: SGLT2 inhibitors.

Comparator: Placebo or other diabetic medication.

Study designs to be included: Randomized controlled trial(RCTs) or post-hoc analysis of RCTs.

Eligibility criteria: Inclusion criteria are RCTs or post-hoc analysis of RCTs that compare the outcomes of SGLT2 inhibitors with placebo or other diabetic medication. We will exclude observational studies, case series, case reports, reviews, and studies that did not investigate our outcomes of interest.

Information sources: Three electronic databases will be used. (OVID MEDLINE, Embase, and Cochrane CENTRAL). Additional searching will be conducted by manually screening the included studies' reference lists.

Main outcome(s): Cardiovascular outcome (CV death, Hospitalization for heart failure(HHF), urgent visit for heart failure(HF), all-cause death, total HHF) and health status (KCCQ compare to baseline, increase KCCQ >= 5 points).

Data management: The data were extracted by standardized data collection form independently by the same two authors and verified by the third author. The following information was collected; the name of the first author, year of publication, median follow-up time, intervention, baseline patient characteristics, and reported outcome of interest. All data will be stored in a spreadsheet.

Quality assessment / Risk of bias analysis: The Cochrane Risk of Bias 2 will be used to evaluate the quality of included studies.

Strategy of data synthesis: The Review Manager 5.4 software from the Cochrane Collaboration was used for all statistical analyses. The inverse variance approach and the random-effects model were used in the meta-analysis to pool Hazard ratios, Odd ratios, mean difference, and 95% confidence intervals.

Subgroup analysis: We plan to do subgroup analyses on left ventricular ejection fraction ranges, diabetes status, baseline renal function, and NYHA functional classification.

Sensitivity analysis: None.

Country(ies) involved: Thailand.

Keywords: Sodium-glucose cotransporter-2 inhibitors, Heart failure, Preserved ejection fraction, Cardiovascular outcome, HFpEF, Meta-analysis.

Contributions of each author:
Author 1 - Sukrit Treewaree.
Email: sukrit.tre@gmail.com
Author 2 - Narathorn Kulthamrongsri.
Email: narathorn.kul@mahidol.ac.th
Author 3 - Weerapat Owattanapanich.
Email: weerapato36733@gmail.com
Author 4 - Rungroj Krittayaphong.
Email: rungroj.kri@mahidol.ac.th