# INPLASY PROTOCOL

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**Conflicts of interest:**
**None declared.**

# Scientific Evidence of Sodium-glucose Cotransporter-2 Inhibitors for Heart Failure: An umbrella review of Systematic Reviews and Meta-Analyses

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**Review question / Objective:** **A large number of systematic reviews and meta-analyses (SRs/MAs) involving sodium-glucose cotransporter-2 inhibitors (SGLT-2is) in the treatment of heart failure with preserved ejection fraction (HFpEF) have different outcomes.**
**Condition being studied:** **The efficacy of SGLT-2is on HFpEF is currently a hot topic. However, the results of SRs/MAs conducted on relevant randomized controlled trials (RCTs) are inconsistent. We aim to conduct an umbrella review of existing SRs/MAs, to comprehensively evaluate study quality, and to incorporate calculated data from RCTs to update the results of primary outcomes.**

**INPLASY registration number:** This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 19 December 2022 and was last updated on 26 January 2023 (registration number INPLASY2022120083).

## INTRODUCTION

**Review question / Objective:** **A large number of systematic reviews and meta-analyses (SRs/MAs) involving sodium-glucose cotransporter-2 inhibitors (SGLT-2is) in the treatment of heart failure with preserved ejection fraction (HFpEF) have different outcomes.**

**Condition being studied:** **The efficacy of SGLT-2is on HFpEF is currently a hot topic. However, the results of SRs/MAs conducted on relevant randomized controlled trials (RCTs) are inconsistent. We**

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## METHODS

**Participant or population:** HFpEF patients.

**Intervention:** SGLT-2is.

**Comparator:** Placebo or additional conventional treatment.

**Study designs to be included:** SRs/MAs on RCTs.

**Eligibility criteria:** (a) SRs/MAs of RCTs on SGLT-2is in the treatment of HFpEF.
(b) HFpEF patients.
(c) SGLT-2is vs placebo or additional conventional treatment.
(d) Main outcomes about first or total HHF, CVD, all-cause death, the composite of HHF or CVD, and adverse events.

**Information sources:** It was mainly derived from the Cochrane Library, PubMed, and EMBASE. Some grey literatures were considered for inclusion.

**Main outcome(s):** The main outcomes are first or total HHF, CVD, all-cause death, the composite of HHF or CVD, and adverse events.

**Quality assessment / Risk of bias analysis:** The Cochrane risk of bias criteria.

**Strategy of data synthesis:** The data calculation involved in this paper is completed by R software and Stata software. We calculated the corrected cover area (CCA), carried out excess significance tests, combined effect sizes of outcomes, and finally verified the stability of the results through Egger's test and sensitivity analysis.

**Subgroup analysis:** Subgroup analysis will include subgroup analysis of different types of SGLT-2is, different doses, and duration of administration.

**Sensitivity analysis:** A sensitivity analysis will be performed to determine the size of the impact of individual studies on overall results.

**Country(ies) involved:** China.

**Keywords:** overview; Keywords: umbrella review; sodium-glucose cotransporter-2 inhibitor; heart failure with preserved ejection fraction; systematic review; meta-analysis; evidence quality assessment.

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