INPLASY PROTOCOL

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None declared.

SGLT2 inhibitor and aldosterone and renin levels: a meta-analysis

Manosroi, W[1].

Review question / Objective: **Can SGLT2i affect levels of renin and aldosterone in type 2 diabetes patients?**
Eligibility criteria: **Inclusion criteria-Adult patients aged > 18 years old diagnosed with diabetes mellitus type 2-Used SGLT2 inhibitor-Reported data of renin and aldosterone before and after the use of SGLT2iExclusion criteria-Articles published in a language other than English-Review articles, case reports, grey literature, editorial comments, conference abstracts and animal studies-Studies involving special populations such as pregnant women or children were also excluded.**

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 11 June 2022 and was last updated on 11 June 2022 (registration number INPLASY202260050).

INTRODUCTION

Review question / Objective: **Can SGLT2i affect levels of renin and aldosterone in type 2 diabetes patients?**

Condition being studied: **Patients with type 2 diabetes who use SGLT2 inhibitor.**

METHODS

Search strategy: **The search will be performed on the following database; MEDLINE, Scopus, Web of Science, Cochrane The search date will be started from mid of May-June 2022. Only English language articles will be included.**

Participant or population: Type 2 diabetes with SGLT2i use.

Intervention: The use of SGLT2i.

Comparator: None.

Study designs to be included: Observational study (cohort, case-control, crossectional) or randomized controlled trial.

Eligibility criteria: Inclusion criteria-Adult patients aged > 18 years old diagnosed with diabetes mellitus type 2-Used SGLT2 inhibitor-Reported data of renin and aldosterone before and after the use of SGLT2iExclusion criteria-Articles published in a language other than English-Review articles, case reports, grey literature, editorial comments, conference abstracts and animal studies-Studies involving special populations such as pregnant women or children were also excluded.

Information sources: MEDLINE, Scopus, Web of Science, Cochrane.

Main outcome(s): Main outcomes are levels of aldosterone and renin changes before and after the use of SGLT2i in diabetes type 2 patients.

Data management: Data extraction will be conducted by 2 authors. The variables extracted from each study included: 1) study characteristics, i.e., the name of the first author, year of publication, ethnicity of the included population and study design; 2) patient characteristics, i.e., means and standard deviations (SD) of age, percentage of males, mean and SD of body mass index (BMI), duration of SGLT2i used, type and brand of SGLT2i; 3) plasma renin and aldosteorne levels before and after SGLT2i use.

Quality assessment / Risk of bias analysis: Risk of bias will be performed by ROBIN-I tool.

Strategy of data synthesis: Meta-analysis was performed using the STATA program version 16.0. (StataCorp LLC, College Station, TX, USA). SMD (standardized mean difference) will be calculated for changes of plasma aldosterone and renin levels.

Subgroup analysis: Subgroup will be categorized by duration of SGLT2i use as long-term and short-term use.

Sensitivity analysis: None.

Country(ies) involved: Thailand.

Keywords: primary aldosteronism, PAC, PRA, SGLT2i.

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