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 SGLT2i
- **Exclusion 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 aldosterone 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.

**Contributions of each author:**
Author 1 - Worapaka Manosroi.
Email: worapaka.m@gmail.com