INPLASY PROTOCOL

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Conflicts of interest:
None declared.

Association of metformin use with asthma development and adverse outcomes: a systematic review and meta-analysis of observational studies

Liu, CY[1]; Chen, YJ[2]; Rao, R[3]; Chai, YH[4]; Chen, YZ[5]; Li, W[6].

Review question / Objective: **1 Whether metformin can reduce the incidence of asthma in patients with T2D. 2 Whether T2D patients with concurrent asthma can safely use metformin to reduce adverse outcomes.**
Condition being studied: **Recent epidemiological studies suggest that metformin, the first-line medication used for T2D patients, may reduce the risk of asthma exacerbations. Therefore, this article aims to explore two research questions: first, whether metformin can reduce the incidence of asthma in patients with T2D, and second, whether T2D patients with concurrent asthma can safely use metformin to reduce adverse outcomes. This study may shed light on the efficacy of metformin as an adjunct therapy for asthma care in patients with co-morbid T2D.**

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 03 April 2023 and was last updated on 03 April 2023 (registration number INPLASY202340004).

INTRODUCTION

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patients with concurrent asthma can safely use metformin to reduce adverse outcomes. This study may shed light on the efficacy of metformin as an adjunct therapy for asthma care in patients with co-morbid T2D.

METHODS

Participant or population: Type 2 diabetes.

Intervention: Metformin.

Comparator: No metformin.

Study designs to be included: Meta-analysis of observational research.

Eligibility criteria: The study's inclusions criteria were delineated as follows: 1. utilization of observational studies; 2. participants who were over 18 years old; 3. examined the utilization of metformin for individuals afflicted with both asthma and diabetes; 4. Odds ratios (ORs) or Hazard ratios (HRs) were compared between metformin users and non-users related to the development or aggravation of asthma.

Information sources: Electronic databases.

Main outcome(s): The incidence of newly developed asthma.

Quality assessment / Risk of bias analysis: Revman.

Strategy of data synthesis: The dataset underwent screening using Microsoft Excel. Subsequently, the statistical calculations, plotting, sensitivity analysis, and publication bias test will be conducted using R programming language.

Subgroup analysis: No subgroup.

Sensitivity analysis: Sensitivity analysis will be conducted using R programming language.

Language restriction: English and Chinese.

Country(ies) involved: China.

Keywords: Metformin; Asthma.

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