INPLASY PROTOCOL

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A meta-analysis of the efficacy of SGLT2 inhibitors on diabetic nephropathy and fibrosis

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Review question / Objective: To systematically review the renal protection and SGLT2 inhibitor safety in diabetic nephropathy (DN) and.fibrosis.

Condition being studied: Relevant literature on acupuncture treatment of ear diseases published before September 2022 was searched, and related literatures on Efficacy and safety of SGLT2 inhibitors in treating diabetic nephropathy.

Information sources: According to the search strategy recommended by the Cochrane Collaboration, Chinese databases such as CNKI and Wanfang Full-text Database were searched with Chinese search terms; English search terms were used to search literature published in Pubmed, Medline, and Cochrane library foreign language databases.

INTRODUCTION

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METHODS

Participant or population: Patients with diabetic nephropathy.

Intervention: SGLT2 inhibitors.

Comparator: Estimated glomerular filtration rate (eGFR).

Study designs to be included: Case-control studies.

Eligibility criteria: Related literatures on Efficacy and safety of SGLT2 inhibitors in treating diabetic nephropathy.

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Main outcome(s): SGLT2 inhibitors, the urinary microalbumin-to-creatinine ratio (UACR), the α-smooth actin, and the relative area of glomerulosclerosis.

Quality assessment / Risk of bias analysis: 2 reviewers assessed literature quality by NOS. Articles 's NOS score of ≥6 were high-quality. In case of disagreement, the two raters were resolved by discussion.

Strategy of data synthesis: This study used RevMan5.2 software provided by Cochrane Collaboration. Pooled OR was tested with Z-test, test level α=0.1. Subgroup analysis was performed according to possible heterogeneity factors, and the I2 test was used to verify the heterogeneity between studies. If no statistical heterogeneity (p>0.1, I2<50%), used fixed effect model; if there was statistical heterogeneity (p≦0.1, I2≧ 50%), using a random effects model. Through subgroup analysis, looking for sources of heterogeneity. Sensitivity analysis is done by removing each study one by one, looking for sources of heterogeneity, and checking the stability of the results of this study by looking at heterogeneity, effect scales. P < 0.05 was statistical significance.

Subgroup analysis: Subgroup analysis during follow-up also showed that SGLT2 inhibitors had relatively fewer adverse reactions at 48 weeks and 96 weeks after treatment (p<0.01).

Sensitivity analysis: Sensitivity analysis was carried out for each research factor with obvious heterogeneity in this study, and there was no significant change in the results, indicating that the results were robust and credible.

Country(ies) involved: China (Jiading Branch of Shanghai General Hospital, Shanghai Jiao Tong University School of Medicine).

Keywords: SGLT2 inhibitors, diabetic nephropathy, renal fibrosis, efficacy, systematic review.

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