INPLASY PROTOCOL

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None declared.

Chinese Herbal Medicine Combined with Acupuncture-related therapy as Complementary Therapies for Diabetic Nephropathy: A Protocol for Systematic Review and Network Meta-Analysis

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Review question / Objective: Evaluating the efficacy of various Chinese herbal medicines combined with acupuncture-related therapies in the treatment of diabetic nephropathy.

Information sources: We will search the following databases for relevant randomised controlled trials: PubMed, EMBASE, Cochrane Library, Scopus, OVID,Web of Science, Cochrane Central Register of Controlled Trials, China Biology Medicine (CBM), the China National Knowledge Infrastructure (CNKI), Wanfang data, and the Chinese Scientifific Journal Database (VIP). Search until April 10, 2022, with a combination of MeSH terms and free words.

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 17 April 2022 and was last updated on 17 April 2022 (registration number INPLASY202240095).

INTRODUCTION

Review question / Objective: Evaluating the efficacy of various Chinese herbal medicines combined with acupuncture-related therapies in the treatment of diabetic nephropathy.

Condition being studied: Chronic kidney disease (CKD) is a chronic structural and functional disorder of the kidney caused by various causes, of which diabetic nephropathy is one of the most serious complications of diabetes. Studies have reported that about 20% to 40% of diabetic

patients in China have co-morbid diabetic nephropathy, and more than 3/4 of them will progress to end-stage renal disease after 20 years if there is no intervention. In addition, epidemiological studies have shown that patients with early-onset T2DM (diagnosed before the age of 40 years) have a significantly higher risk of developing diabetic nephropathy than patients with late-onset T2DM in China. Etiological studies have shown that in addition to blood glucose, blood pressure, blood lipids, dietary structure, and body weight also have an important influence on the occurrence and development of diabetic nephropathy. Therefore, effective control of blood glucose levels, adjustment to a poor lifestyle, and control of risk factors (hyperglycemia, hypertensive disorder, etc.) can effectively protect the kidney function of diabetic patients. In recent years, there have been more and more reports on the use of integrative therapies such as Chinese herbs and acupuncture to assist in the treatment of diabetes. Studies have shown that Chinese medicine therapies can effectively assist in lowering fasting blood glucose (FBG) and hemoglobin A1c (HbA1c), which is also confirmed in recent meta-analyses. There are also more clinical studies reported on the use of Chinese herbs and acupuncture in the treatment of complications of diabetes, which confirmed that these therapies are also effective. However, there are many therapies involved in these studies, and in order to systematically assess the advantages and disadvantages of these treatments, we used Chinese herbal medicine combined with acupuncture-related therapy as a bridge to include related studies with controls, and compared all interventions using reticulated meta-analysis, with the aim of assessing the efficacy and safety of Chinese herbal medicine combined with acupuncture-related therapy in the treatment of diabetic nephropathy.

METHODS

Participant or population: Patients with diabetic nephropathy treated by using Chinese herbal medicine combined with acupuncture-related therapies.

Intervention: The included studies used various types of Chinese herbal medicine combined with acupuncture-related therapies as the main intervention, including Chinese herbal medicine combined with simple acupuncture, Chinese herbal medicine combined with electro-acupuncture, Chinese herbal medicine combined with moxibustion, etc.

Comparator: For the control group, no restrictions were imposed.

Study designs to be included: Randomized controlled trials (RCTs).

Eligibility criteria: The included studies used various types of Chinese herbal medicine combined with acupuncture-related therapies as the main intervention, including Chinese herbal medicine combined with simple acupuncture, Chinese herbal medicine combined with electro-acupuncture, Chinese herbal medicine combined with moxibustion, etc. For the control group, no restrictions were imposed. We request that at least one of urinary microalbumin excretion rate (UAER), blood creatinine, and 24-h urine protein quantification be reported as an outcome indicator in the included literature.

Information sources: We will search the following databases for relevant randomised controlled trials: PubMed, EMBASE, Cochrane Library, Scopus, OVID,Web of Science, Cochrane Central Register of Controlled Trials, China Biology Medicine (CBM), the China National Knowledge Infrastructure (CNKI), Wanfang data, and the Chinese Scientifific Journal Database (VIP). Search until April 10, 2022, with a combination of MeSH terms and free words.

Main outcome(s): We request that at least one of urinary microalbumin excretion rate (UAER), blood creatinine, and 24-h urine protein quantification be reported as an

outcome indicator in the included literature.

Quality assessment / Risk of bias analysis: Two of our researchers will independently assess the risks of the included studies according to the Cochrane Handbook 5.1, which includes seven sections: random sequence generation (selection bias), allocation concealment (selection bias), blinding of participants and personnel (performance bias), blinding of outcome assessment (detection bias), incomplete outcome data (attrition bias), selective reporting (reporting bias), and other bias. We will assess each one individually and the results of the assessment will include three levels: low risk, unclear, and high risk.

Strategy of data synthesis: We will use RevMan 5.4, Stata 15.0, and WinBUGS 1.4.3 software for the data analysis. First we will use RevMan 5.4 to conduct a pairwise meta-analysis of the included studies to determine the efficacy of the two interventions directly compared. In this process we will use the I2 test to determine the size of heterogeneity, if I2 < 50% indicates less heterogeneity we will use a fixed-effects model, if I2 > 50% indicates more heterogeneity and a random effects model will be applied, and we will also do a sensitivity analysis to determine the source of heterogeneity. Then we will plot network evidence and inconsistency tests using Stata 15.0: the size of the network evidence plot nodes represents the sample size of the corresponding intervention, while the thickness of the lines is proportional to the number of studies. We next conducted a network meta-analysis using WinBUGS 1.4.3 to make direct and indirect comparisons of all included interventions. Finally we will use Stata 15.0 to generate a surface under the cumulative ranking curve (SUCRA) to rank the included intervention and calculate the probability of ranking each intervention best.

Subgroup analysis: We will conduct subgroup analyses based on different outcome indicators.

Sensitivity analysis: Following our analysis of heterogeneity in the included literature, if the results suggest a high rate of heterogeneity, we will conduct a sensitivity analysis to find the source of heterogeneity.

Language: The language of the publication was limited to Chinese or English.

Country(ies) involved: China.

Keywords: Chinese Herbal Medicine; Acupuncture-related therapy; Diabetic Nephropathy; Network Meta-Analysis.

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