INPLASY PROTOCOL

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None declared.

Clinical effect of rhubarb on the treatment of chronic renal failure: a Meta- analysis

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Review question / Objective: **To evaluate the benefits of Rhubarb in the treatment of chronic renal failure (CRF) by conducting a meta-analysis. Methods: The randomized and semi randomized controlled trials of Rhubarb in the treatment of chronic renal failure in medical electronic databases (up to September 2021) were searched.**
Condition being studied: **The initial search yielded 740 relevant records (145 from CBM, 271 from CNKI, 151 from VIP and 173 from Wanfang). NoteExpress software was used for de-weighting, and the exclusion of ineligible papers was carried out according to the pre-designed de-weighting criteria, and a total of 34 papers were finally identified for inclusion.**
Information sources: **Databases searched include the China Biology Medicine disc (CBMdisc), China Academic Journal Network Publishing Database (CAJD) China, Wanfang Database, EMBA, MEDLINE, PUBMED, and Cochrane Library.**

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 16 October 2021 and was last updated on 16 October 2021 (registration number INPLASY2021100052).

INTRODUCTION

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METHODS

Participant or population: Diagnostic criteria: according to the criteria formulated at the meeting, the staging criteria are divided into five stages according to the renal function staging criteria proposed in the clinical practice guide for chronic kidney disease (K/DOQI) formulated by the American kidney disease foundation.

Intervention: The treatment group was treated with rhubarb single prescription or traditional Chinese medicine compound containing rhubarb (including traditional Chinese medicine pill, traditional Chinese medicine glue coating, traditional Chinese medicine granule and traditional Chinese medicine decoction) orally, with unlimited dosage form / dose mode. The treatment and follow-up time were more than 2 months.

Comparator: Routine symptomatic treatment.

Study designs to be included: The randomized and semi randomized controlled trials of Rhubarb in the treatment of chronic renal failure in medical electronic databases (up to September 2021) were searched, and meta-analysis was carried out by revman5.3 software.

Eligibility criteria: A total of 2786 patients were included in 34 literatures, including 1474 cases in the treatment group and 1312 cases in the control group. The results of meta-analysis showed that Serum creatinine (SCR) [MD = 123.57, 95% CI (111.59, 131.96)], Blood urea nitrogen (BUN) [MD = -3.26, 95% CI (- 4.22, - 2.31)], Creatinine clearance rate (CCR) [MD = 3.95, 95% CI (- 0.03, 7.93)], Hemoglobin (Hb) [MD = 7.70, 95% CI (- 0.18, 15.58)] and Uric acid (UA) [MD = - 42.79, 95% CI (- 66.29, -19.29)].The total effective rate of improving symptoms and signs in CRF patients [Peto or = 4.14, 95% CI (3.32, 5.16)].

Information sources: Databases searched include the China Biology Medicine disc (CBMdisc), China Academic Journal Network Publishing Database (CAJD) China, Wanfang Database, EMBA, MEDLINE, PUBMED, and Cochrane Library.

Main outcome(s): This systematic review and meta-analysis demonstrated the positive therapeutic effects of rhubarb on patients with chronic renal failure. Rhubarb reduced SCR, BUN and UA, increased CCR and improved the total effective rate. However, potential biases remain. Larger, high-quality and rigorously designed studies are needed to obtain more accurate and stable analytical results.

Quality assessment / Risk of bias analysis: The methodological quality of the included literature was evaluated by using the "bias risk assessment" tool in Cochrane evaluation manual hand book 5.1.0: (1) random allocation method; (2) allocation concealment scheme; (3) Whether the blind method is used for the research object and the implementer of the treatment plan; (4) Whether the outcome indicators were evaluated by blind method; (5) the result data are completely reported (whether the number of lost visits and withdrawals are described, and whether an intention analysis is conducted); (6) selective reporting of research results; (7) Other sources of bias. Each document is evaluated according to the above points: it is divided into three levels: "yes" stands for low bias, "no" stands for high bias, "unclear" stands for lack of relevant information or uncertainty of bias, which shall be cross checked by two researchers. If there are differences or difficult conditions to be determined, it shall be solved after discussion with other personnel.

Strategy of data synthesis: The four areas under were evaluated separately: (1) The randomisation method; (2) Allocation concealment and methodological correctness; (3) whether blinding was used; and (4) mention of missing visits or withdrawals, and intentional analysis.

Subgroup analysis: Subgroup analysis was not performed.

Sensitivity analysis: Sensitivity analysis is conducted to reduce heterogeneity as much as possible according to the possible heterogeneity factors. If heterogeneity still existed but there was clinical homogeneity, Meta-analysis was performed using a random effects model. Descriptive analysis was used if there was too much heterogeneity, too little data in the literature sample or if the source of data could not be found. An 'inverted funnel plot' was used to assess publication bias.

Country(ies) involved: China.

Keywords: Rhubarb, Chronic renal failure, Systematic review, Meta-analysis.

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