INPLASY PROTOCOL

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Support: None.

Review Stage at time of this submission: Preliminary searches.

Conflicts of interest:
None declared.

Health effects of berberine: an umbrella review of clinical and preclinical meta-analyses

Lu, CC[1]; Wang, ZF[2]; Zhang, Q[3].

Review question / Objective: To identify the clinical and preclinical meta-analyses of berberine, summarize the health effects of berberine, and relevant mechanisms.
Condition being studied: The health effects of berberine and relevant mechanisms.
Information sources: PubMed, Embase, Web of Science, Cochrane Library, and CNKI will be searched to identify relevant meta-analyses from inception to September 12th, 2022. The reference lists of included meta-analyses also will be checked manually to identify potential eligible articles. PubMed and CNKI will be used to update the previous meta-analyses.

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 12 September 2022 and was last updated on 12 September 2022 (registration number INPLASY202290052).

INTRODUCTION

Review question / Objective: To identify the clinical and preclinical meta-analyses of berberine, summarize the health effects of berberine, and relevant mechanisms.

Rationale: Several meta-analyses of berberine have been published in recent years, but their methodological quality remains unknown. Moreover, the health effects and relevant mechanisms have not been systematically summarized.

Condition being studied: The health effects of berberine and relevant mechanisms.

METHODS

Search strategy:
PubMed
#1 OR/
"Berberine"[Mesh]
Berberine[Title/Abstract]
Huangliansu[Title/Abstract]
Xiaobojian[Title/Abstract]
#2 OR/
"Systematic Review"[Publication Type]
"Systematic Reviews as topic"[Mesh]
"Meta-analysis"[Publication Type]
"Meta-analysis as topic"[Mesh]
"Systematic review"[Title/Abstract]
"Meta-analysis"[Title/Abstract]
#3 #1 AND #2.

Participant or population: Humans or animals treated by berberine.

Intervention: Berberine alone or in combination with other interventions.

Comparator: Any intervention, such as drugs.

Study designs to be included: Pairwise meta-analyses of clinical and preclinical comparative studies.

Eligibility criteria: Pairwise meta-analyses published in English or Chinese.

Information sources: PubMed, Embase, Web of Science, Cochrane Library, and CNKI will be searched to identify relevant meta-analyses from inception to September 12th, 2022. The reference lists of included meta-analyses also will be checked manually to identify potential eligible articles. PubMed and CNKI will be used to update the previous meta-analyses.

Main outcome(s): Outcomes regarding effectiveness.

Additional outcome(s): Outcomes regarding safety or economics.

Data management: Two independent reviewers will screen literature and extract data. Any disagreement will be resolved through a discussion. We will extract the key features of articles and participants.

Quality assessment / Risk of bias analysis: AMSTAR-2 will be used to assess the methodological quality of included meta-analyses. RoB 1.0, NOS, and SYRCLE tools will be used to assess the methodological quality of included primary studies.

Strategy of data synthesis: Outcomes will be re-estimated through random-effect model. RR or OR with 95% CI will be used to present binary outcomes, while MD or SMD with 95% CI will be used to present continuous outcomes. I2 will be used to measure the heterogeneity. $P < 0.05$ will be statistically significant. Data analyses will be conducted via Stata 17.

Subgroup analysis: Subgroup analysis will be conducted accoridng to the quality of included studies, different comparators, etc.

Sensitivity analysis: Sensitivity analysis will be conducted to explore the heterogeneity.

Language restriction: None.

Country(ies) involved: China.

Keywords: Health effects, Berberine, Umbrella review, Meta-analyses.

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