

INPLASY PROTOCOL

Effects of oxymatrine on the proliferation of human liver cancer Bel-7404 cells: a protocol of systematic review and meta-analysis

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Review question / Objective: Is oxymatrine effective on the proliferation of human liver cancer Bel-7404 cells (HLCBC)?
Condition being studied: Oxymatrine and human liver cancer Bel-7404 cells.

Information sources: This study will search electronic bibliographic databases of PubMed, EMBASE, Cochrane Library, Scopus, Cumulative Index to Nursing and Allied Health Literature, China Biology Medicine, and China National Knowledge Infrastructure from their inception to the February 29, 2020 without restrictions on language and publication time. We will search available CCSs or RCSs that assessing the effects of oxymatrine on the proliferation of HLCBC. A sample of search strategy for PubMed is presented. Similar search strategies for other electronic databases will be modified and applied. In addition, we will also search related conference proceedings, and reference lists of included studies, as well as relevant reviews.

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 05 April 2020 and was last updated on 05 April 2020 (registration number INPLASY202040026).

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Review Stage at time of this submission: The review has not yet started.

Conflicts of interest:
None.

INTRODUCTION

Review question / Objective: Is oxymatrine effective on the proliferation of human liver cancer Bel-7404 cells (HLCBC)?

Condition being studied: Oxymatrine and human liver cancer Bel-7404 cells.

METHODS

Participant or population: This study will include HLCBC as its research targets.

Intervention: All studies utilized oxymatrine to manage HLCBC in the experimental group.

Comparator: All studies which used any treatments as their comparators will be included, except oxymatrine.

Study designs to be included: We will include case-controlled studies (CCSs) or randomized controlled studies (RCSs) that assessed effects of oxymatrine on HLCBC proliferation.

Eligibility criteria: This study will include CCSs or RCSs that assessed effects of oxymatrine on HLCBC proliferation compared with the effects of any treatments.

Information sources: This study will search electronic bibliographic databases of PubMed, EMBASE, Cochrane Library, Scopus, Cumulative Index to Nursing and Allied Health Literature, China Biology Medicine, and China National Knowledge Infrastructure from their inception to the February 29, 2020 without restrictions on language and publication time. We will search available CCSs or RCSs that assessing the effects of oxymatrine on the proliferation of HLCBC. A sample of search strategy for PubMed is presented. Similar search strategies for other electronic databases will be modified and applied. In addition, we will also search related conference proceedings, and reference lists of included studies, as well as relevant reviews.

Main outcome(s): Primary outcome is HLCBC proliferation, as measured by MTT assay kit.

Additional outcome(s): Secondary outcomes are HLCBC-related genes expression, including E2F transcription factor 1 and c-myc genes, as measured by Real-time polymerase chain reaction; and HLCBC-related proteins expression, consisting of c-myc mitogen-activated protein kinase 1 and cyclin D1 expressions, as measured by immunofluorescence or western blot test.

Data management: Two authors will independently collect data using a standard data extraction sheet. It includes study information (e.g. title, first author, year of publication, et al), types of studies (CCSs or RCSs), sample size, information of HLCBC, details of intervention and

controls (e.g. dosage, frequency, et al), outcomes, and other relevant data. Any disagreements will be resolved by consultation with another experienced author. If any missing or unclear data will be identified, we will contact primary authors to request them.

Quality assessment / Risk of bias analysis: Two authors will independently evaluate the methodological quality for each included study. Any divergences will be settled by another author through discussion. The methodological quality for CCSs will be appraised by Newcastle-Ottawa Scale, and that for RCSs will be examined by Cochrane risk of bias tool.

Strategy of data synthesis: We will conduct statistical analyses using RevMan 5.3 software. The treatment effects of dichotomous data will be expressed as risk ratio and 95% confidence intervals (CIs), and those of continuous data will be presented as mean difference or standardized mean difference and 95% CIs. I^2 test will be utilized to identify heterogeneity across eligible studies. $I^2 \leq 50\%$ suggests homogeneity, and we will place a fixed-effects model to pool data. We will carry out a meta-analysis when necessary. $I^2 > 50\%$ means obvious heterogeneity, and we will employ a random-effects model to synthesize data. Additionally, a subgroup analysis will be investigated to explore sources of considerable heterogeneity.

Subgroup analysis: A subgroup analysis will be conducted according to the different types of studies, study characteristics, and types of intervention and comparators.

Sensibility analysis: A sensitivity analysis will be performed to examine the robustness of study findings by eliminating low methodological quality studies.

Countries involved: China

Keywords: Oxymatrine; human liver cancer Bel-7404 cells; effect.