INPLASY PROTOCOL

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Conflicts of interest:
None declared.

Ginseng and health outcomes: an umbrella review

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Review question / Objective: **The aim of this umbrella review of meta-analyses is to summarize the relationship between ginseng consumption and multiple health outcomes.**
Eligibility criteria: **Articles will be selected for inclusion if they met the following criteria concerning population, interventions or exposures, comparators, outcomes, and study design: (1) population: adults aged ≥18 years; (2) intervention/exposure: oral ginseng alone or as a supplement without limitations on dose, frequency, or duration of treatment; (3) control: placebo, no treatment, or conventional therapy (conventional interventions were accepted as a co-intervention between groups when all groups of the trial received the same co-intervention); (4) outcome: any health outcomes or indicators (e.g., inflammatory markers, blood glucose) or patient-reported outcomes (e.g., fatigue, QoL); (5) study design: meta-analysis of randomized controlled trials.**

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 23 September 2022 and was last updated on 23 September 2022 (registration number INPLASY2022900109).

INTRODUCTION

Review question / Objective: **The aim of this umbrella review of meta-analyses is to summarize the relationship between ginseng consumption and multiple health outcomes.**

Condition being studied: **Ginseng consumption and multiple health outcomes will be studied in this review.**

METHODS

Search strategy: **PubMed, Embase, Cochrane Library of systematic review and**

Scopus databases will be searched from inception to July 31, 2022, to identify mata-analysis of randomized controlled trials that investigated ginseng consumption and any health outcome. We will use the following search strategies, including "ginseng", "panax", "systematic review" or "meta-analysis".

Participant or population: Adults aged ≥18 years.

Intervention: Ginseng alone or as a supplement without limitations on dose, frequency, or duration of treatmenton.

Comparator: Placebo, no treatment, or conventional therapy.

Study designs to be included: Meta-analysis of randomized controlled trials of ginseng consumption and multiple health outcomes.

Eligibility criteria: Articles will be selected for inclusion if they met the following criteria concerning population, interventions or exposures, comparators, outcomes, and study design: (1) population: adults aged ≥18 years; (2) intervention/exposure: oral ginseng alone or as a supplement without limitations on dose, frequency, or duration of treatment; (3) control: placebo, no treatment, or conventional therapy (conventional interventions were accepted as a co-intervention between groups when all groups of the trial received the same co-intervention); (4) outcome: any health outcomes or indicators (e.g., inflammatory markers, blood glucose) or patient-reported outcomes (e.g., fatigue, QoL); (5) study design: meta-analysis of randomized controlled trials.

Information sources: PubMed, Embase, the Cochrane Library of Systematic Reviews, and Scopus will be searched from inception to July 31, 2022, to identify meta-analyses of randomized controlled trials that investigated the effects of ginseng consumption on any health outcome. The databases will be searched using the terms "ginseng", "panax", "systematic review", or "meta-analysis" without language restrictions. In addition, the references of the included reviews will be screened to identify additional articles potentially meeting the inclusion criteria.

Main outcome(s): Any health outcomes, indicators or patient-reported outcomes.

Quality assessment / Risk of bias analysis: Two reviewers will independently appraise the methodological quality of the included meta-analyses using the AMSTAR 2 tool (A Measurement Tool to Assess systematic Reviews), and will evaluate the quality of the evidence for each outcome using the GRADE (The Grading of Recommendations, Assessment, Development and Evaluation) approach.

Strategy of data synthesis: For each meta-analysis, we will extracted health-related outcomes as descriptive summaries, rather than re-analyzing the data from primary studies. Estimated pooled effects (i.e., mean difference [MD], standardized mean difference [SMD], risk ratio [RR], odds ratio [OR]) will be extracted from the included meta-analyses, along with p-values and 95% confidence intervals obtained using random-effects or fixed-effects models. Heterogeneity between studies was assessed using I2. Publication bias was assessed using funnel plots, Egger's tests, or Begg's tests. In addition, adherence rates of AMSTAR-2 items will be calculated for each meta-analysis and will be reported as the numbers and their percentages of “Y”, “PY”, or “N” responses.

Subgroup analysis: None.

Sensitivity analysis: None.

Country(ies) involved: China.

Keywords: ginseng; health outcomes; meta-analysis; AMSTAR-2; umbrella review.

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