

# INPLASY PROTOCOL

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**Review Stage at time of this submission:** Piloting of the study selection process.

**Conflicts of interest:**  
The authors declare no conflicts of interest.

## Is periodontitis associated with liver cirrhosis? A protocol of systematic review and meta-analysis

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**Review question / Objective:** Is there an association between periodontitis and liver cirrhosis?

**Condition being studied:** Periodontitis is a chronic destructive inflammatory condition affecting the supporting tissues of the teeth. Systemic conditions are capable of interfering with the balance of periodontal health. Periodontitis is more prevalent in patients with these diseases.

**Information sources:** Electronic databases such as PubMed, EMBASE, Scopus, Web of Science and Cochrane Library. The gray literature will be investigated by searching OpenGrey and analyzing the first 200 hits on a Google Scholar search. Authors of the selected articles will be contacted by email if necessary. References will be hand searched for all articles included in order to identify any study with potential to be added.

**INPLASY registration number:** This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 22 July 2020 and was last updated on 22 July 2020 (registration number INPLASY202070102).

### INTRODUCTION

**Review question / Objective:** Is there an association between periodontitis and liver cirrhosis?

**Condition being studied:** Periodontitis is a chronic destructive inflammatory condition affecting the supporting tissues of the

teeth. Systemic conditions are capable of interfering with the balance of periodontal health. Periodontitis is more prevalent in patients with these diseases.

### METHODS

**Search strategy:** We will search articles in the following electronic bibliographic

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**Participant or population:** Adult humans.

**Intervention:** Liver cirrhosis.

**Comparator:** Adult humans without liver cirrhosis.

**Study designs to be included:** Observational studies.

**Eligibility criteria:** Cross-sectional, case-control, cohort studies in adults (P) presenting with liver cirrhosis (E) and without liver cirrhosis (C), in which the outcome (O) was the prevalence of periodontitis or clinical periodontal parameters in this population.

**Information sources:** Electronic databases such as PubMed, EMBASE, Scopus, Web of Science and Cochrane Library. The gray literature will be investigated by searching OpenGrey and analyzing the first 200 hits on a Google Scholar search. Authors of the selected articles will be contacted by email if necessary. References will be hand searched for all articles included in order to identify any study with potential to be added.

**Main outcome(s):** The prevalence of periodontitis.

**Additional outcome(s):** clinical periodontal parameters.

**Quality assessment / Risk of bias analysis:** The Fowkes and Fulton checklist will be used to appraise the methodological quality and bias risk of the studies selected for this systematic review.

**Strategy of data synthesis:** We will perform five meta-analyses to evaluate the association between periodontitis and cirrhosis, including: (1) prevalence of periodontitis, (2) probing depth (PD), (3) clinical attachment loss (CAL), (4) bleeding on probing (BOP) and (5) alveolar bone loss (ABL). Odds ratio with 95% confidence intervals will be calculated for the prevalence rates of periodontitis and the mean difference will be calculated for continuous variables. Statistical analyses will be conducted using Stata version 12 (Stata Corp, College Station, TX, USA).

**Subgroup analysis:** None planned.

**Sensibility analysis:** If possible, sensitivity analysis will be conducted to explore the extent to which inferences might depend on a particular study or number of publications when significant heterogeneity of results was detected across studies.

**Country(ies) involved:** China.

**Keywords:** Periodontitis, Liver cirrhosis, Systematic review, Meta-analysis, Risk factors.

**Contributions of each author:**

Author 1 - Peiyao Wu - WPY drafted the manuscript.

Author 2 - Jieyu Zhou - The author provided statistical expertise.

Author 3 - Lei Zhao - The author contributed to the manuscript elaboration.