INPLASY PROTOCOL

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Helicobacter pylori infection and the progression of atherosclerosis: a protocol for systematic review and meta analysis

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Review question / Objective: **In recent years, many studies have tried to prove whether Helicobacter pylori(HP) can promote the progression of atherosclerosis(AS), but the reported results are conflicting. So we summarized the relationship between HP infection and the progression of AS through meta-analysis to provide evidence-based medicine.**
Search strategy: **We manually searched the Pubmed database, Embase database, and Cochrane database for all relevant literatures from its establishment to October 15, 2021. We use a search strategy combining MeSH terms with free terms, where MeSH terms include "Helicobacter pylori" and "atherosclerosis". Then, we will filter these literatures in EndNote software.**

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 09 October 2021 and was last updated on 20 October 2021 (registration number INPLASY2021100032).

INTRODUCTION

Review question / Objective: **In recent years, many studies have tried to prove whether Helicobacter pylori(HP) can promote the progression of atherosclerosis(AS), but the reported results are conflicting. So we summarized the relationship between HP infection and the progression of AS through meta-analysis to provide evidence-based medicine.**

Condition being studied: **(1)Age ≥ 18; (2)The population was divided into positive and negative groups based on whether they were infected with HP; (3)The patient has not been treated for HP eradication. (4)The included subjects have consistent baseline except for HP infection. (5)Other diseases**

can be different between each study, but the only difference is whether there is HP infection in any one study.

METHODS

Search strategy: We manually searched the Pubmed database, Embase database, and Cochrane database for all relevant literatures from its establishment to October 15, 2021. We use a search strategy combining MeSH terms with free terms, where MeSH terms include "Helicobacter pylori" and “atherosclerosis” . Then, we will filter these literatures in EndNote software.

Participant or population: Helicobacter pylori positive and negative people.

Intervention: None.

Comparator: Helicobacter pylori positive and negative people.

Study designs to be included: Cross-sectional study, Cohort Study, Case-control study.

Eligibility criteria: According to the purpose of this study, all published studies on the relationship between H. pylori and AS will be included in the database.

Information sources: PubMed, Cochrane trials, and Embase databases

Main outcome(s): The main outcome indicators include the incidence of atherosclerosis, Carotid intima-media thickness (CIMT), total carotid plaque area (TPA), Crouse plaque score.

Quality assessment / Risk of bias analysis: The MINORS scale is used to assess the quality of the literature. It is a clinical intervention research quality evaluation tool developed by French surgeon Slim and others on the basis of a comprehensive review of the literature and expert consensus in 2007. There are a total of 12 evaluation indicators, each of which is divided into 0 to 2 points. The first 8 are studies with no control group, and the highest score is 16; the last 4 and the first 8 are studies with a control group, and the highest score is 24. All projects are related to our research. A score of 0 means not reporting; 1 point means reporting but insufficient information; 2 points means reporting and providing adequate information. Articles with a score lower than 13 are generally considered low-quality, and low-quality articles will be excluded.

Strategy of data synthesis: We used STATA16.0 software to conduct a meta-analysis of the studies we included. Binary variables use Odds ratio and 95% CI as the statistical effect size. When continuous variables have the same measurement unit, they are expressed as a weighted average difference with 95% CI. When the units of measurement are different, use the standardized mean difference and the 95% confidence interval, and we use the random-effects model. The I2 statistic was used to evaluate the heterogeneity of the results of the combined study.

Subgroup analysis: We will conduct subgroup analysis based on gender, age, HP testing method, inclusion in the population and other reasons. Subgroup analysis is also an effective way to explore the source of heterogeneity.

Sensitivity analysis: At the same time, we use sensitivity analysis to resolve heterogeneity and explain some problems.

Language: English.

Country(ies) involved: China.

Keywords: Helicobacter pylori infection, atherosclerosis, meta-analysis.

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