INPLASY PROTOCOL

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Prognostic significance of microRNA-221 in liver cancer: A systematic review and meta-analysis

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Conflicts of interest:
None declared.

Review question / Objective: **MicroRNA-221 (miR-221) was found to be abnormally expressed in liver cancer, the clinical value of which had not been summarized. This meta-analysis was performed to assess the prognostic significance of microRNA-221 in liver cancer.**
Condition being studied: **Our team members are experienced. We are very interested in meta-analysis.**
Information sources: **Pubmed, Science Direct, Web of Science, Scopus, Ovid MEDLINE, Embase, Google Scholar, the Cochrane Library, EMbase, CNKI, CBM, VIP, and Wanfang databases**

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 06 March 2021 and was last updated on 06 March 2021 (registration number INPLASY202130014).

INTRODUCTION

Review question / Objective: **microRNA-221 (miR-221) was found to be abnormally expressed in liver cancer, the clinical value of which had not been summarized. This meta-analysis was performed to assess the prognostic significance of microRNA-221 in liver cancer.**

Rationale: **MicroRNA-221 (miR-221) was found to be abnormally expressed in liver cancer, the clinical value of which had not been summarized. We aimed to assess the prognostic significance of microRNA-221 in liver cancer.**

Condition being studied: Our team members are experienced. We are very interested in meta-analysis.

METHODS

Search strategy: The search strategy used ("liver cancer" or "cancer of the liver" or "liver neoplasms" or "liver neoplasm" or "hepatocellular cancer" or "hepatocellular carcinoma" or "hepatic neoplasm" or "hepatic cancer" or "intrahepatic cholangiocarcinoma")and ("microRNA-221" or "miRNA-221" or "miR-221" or "has-miR-221"). The search formulas were used to search Pubmed, Science Direct, Web of Science, Scopus, Ovid MEDLINE, Embase, Google Scholar, the Cochrane Library, EMbase, CNKI, CBM, VIP, and Wanfang databases. The deadline was October 10, 2020. The corresponding reference documents and conference paper abstract were searched manually. Screening titles, abstracts, and full texts to distinguish eligible studies.

Participant or population: Patients with liver cancer.

Intervention: No intervention.

Comparator: Comparing the prognosis of liver cancer patients with high and low miR-221.

Study designs to be included: Hazard ratios (HRs) with 95% confidence intervals (CIs) were used to explore the relationship between miR-221 expression and clinical survival results of liver cancer patients. Subgroup analysis and sensitivity analysis were performed. Begg's test and Egger's test were conducted to evaluate publication bias.

Eligibility criteria: Article inclusion criteria: (1) Research object: history of liver cancer; (2) Research type: only randomized clinical trials were included, and similar articles published by the same author were selected recently. (3) Outcome indicators: overall survival(OS), progression-free survival (PFS), recurrence-free survival (RFS), metastasis-free survival (MFS), disease-free survival (DFS), or Kaplan-Meier curve can be obtained from the original article or contact the original author. If the reported information lacked detailed information, or the data had already been reported (same institution, repeated period of patient recruitment), the study would be excluded. In addition, reviews, editorials, abstracts, letters, case reports, expert opinions were eliminated for meta-analysis.

Information sources: Pubmed, Science Direct, Web of Science, Scopus, Ovid MEDLINE, Embase, Google Scholar, the Cochrane Library, EMbase, CNKI, CBM, VIP, and Wanfang databases.

Main outcome(s): 10 studies including 741 patients were recruited for this meta-analysis. The pooled HR displayed that high miR-221 expression was remarkably associated with poorer overall survival (OS) (HR=1.90, 95CI%:1.56-2.33, $P<0.01$) and unfavourable PFS/RFS/MFS/DFS (HR=2.02, 95CI%:1.58-2.57, $P<0.01$). The results of Begg's test and Egger's test didn't exhibit obvious publication bias.

Additional outcome(s): No.

Data management: We recorded all the original data in the form of an electronic version.

Quality assessment / Risk of bias analysis: Begg's test and Egger's test were conducted to evaluate publication bias.

Strategy of data synthesis: Review Manager 5.0 (Cochrane Collaboration, Oxford, UK) and STATA 15.0 software (STATA, University of Texas Station, USA) were applied for data analyses.

Subgroup analysis: Subgroup analysis can be performed based on region, cancer type, and detected sample.

Sensitivity analysis: We would make sensitivity analysis by omitting each of study.

Language: Any form of language.

Country(ies) involved: China.

Other relevant information: No.

Keywords: miR-221; liver cancer; prognostic biomarker.

Contributions of each author:

Author 1 - Wenfeng Liu - The author collect the data, analyze the data and drafted the manuscript.
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