INPLASY PROTOCOL

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None declared.

Effects of portal vein resection and hepatic artery resection on long-term survival in hilar cholangiocarcinoma: a protocol for meta-analysis

Song, Y[1]; Zhang, Y[2]; Zhen, Z[3]; Huang, Z[4].

Review question / Objective: **This meta-analysis aims to clarify the safety and efficacy of combined vascular resection and reconstruction for HCCA. In addition, the effects of vascular resection and reconstruction on long-term survival of HCCA patients will also be evaluated.**
Condition being studied: **Around 50% of patients with cholangiocarcinoma currently suffer from is classified as hilar cholangiocarcinoma. Surgical resection is the only way to cure this cancer. However, it is still controversial whether resection and reconstruction of the portal vein and hepatic artery should be performed during surgery.**
Information sources: **Relevant articles will be searched using the following electronic databases: Pubmed, Embase, and EBSCO, and the keywords were Hilar Cholangiocarcinoma, Hilar Bile Duct Cancer, Klatskin Tumor, Vascular Resection, Hepatic Artery Resection, and Portal Vein Resection. The search period will be set from January 2000 to December 2020. In addition, reference lists of all retrieved articles will be manually searched to find additional studies missed during the electronic search. Emails will be sent to the original corresponding author for confirmation of uncertain data.**

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 11 March 2022 and was last updated on 11 March 2022 (registration number INPLASY202230042).

INTRODUCTION

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the only way to cure this cancer. However, it is still controversial whether resection and reconstruction of the portal vein and hepatic artery should be performed during surgery.

METHODS

Participant or population: Patients included in previously published studies on this subject who had had hilar cholangiocarcinoma either combined portal vein or hepatic artery resection and reconstruction or, as a control group, did not undergo vascular resection.

Intervention: With portal vein or hepatic artery resection during resection of cholangiocarcinoma of the porta hepatis.

Comparator: Study designs to be included: Randomized control trials (RCTs).

Study designs to be included: The randomized control trials (RCTs) or retrospective study.

Eligibility criteria: Inclusion criteria: 1. Papers on surgeries combined with vascular resection for HCCA; 2. English papers and human studies; 3. The hazard ratios (HR) and 95% confidence interval (CI) of patients between the vascular resection group and non-vascular resection group (control group) or the prognostic survival curve that can be used to extract the data were presented in the paper; 4. Survival types included were overall survival (OS), recurrence-free survival (RFS), or disease-free survival (DFS). Exclusion Criteria: 1. Articles on palliative surgery or without a control group; 2. Articles not identifying the type of vascular resection or the type of resection that did not belong to the PVR or HAR when describing the prognostics of patients; 3. Articles without complete data or graphs required; 4. Individual case report or studies with less than 10 eligible cases included; 5. Repeated Articles; 6. Patients with intrahepatic cholangiocarcinoma and perihilar cholangiocarcinoma mixed in the required data in the article; 7. The study with the largest sample size was selected when articles with the same series of cases were reported repeatedly by the same author.

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Main outcome(s): The first author, country, date of publication, type of resection and survival, the total number of cases, the number of cases in the control group and both vascular resection group, the HR with 95% CI, 3, 5-year survival rate, and median survival time.

Quality assessment / Risk of bias analysis: The Newcastlee-Ottawa Scale (NOS) 9 scoring standard will be used to evaluated the quality of all the included studies indepentently by two authors. A total of 9 assessment indicators will be used to evaluate 3 aspects: selection, comparability, and exposure. The indicators wiil be scored from 0 to 9 points, and studies with 5-9 points were included in the analysis. Publication bias will be assessed by Begg's and Egger's tests, which was considered to exist when a $P < 0.10$.

Strategy of data synthesis: Hazard ratios (HR) with the 95% confidence interval (CI) of patient survival (Overall survival (OS), recurrence-free survival (RFS), and disease-free survival (DFS)) will be used to assess the association between the status of vascular resection and the long-term survival in HCCA. An observed HR > 1 indicates a worse prognostic significance for the corresponding vascular resection group compared with the control group. In contrast, HR < 1 indicates a better

prognostic significance of the vascular resection group than the control group. In addition, the relative risk (RR) will be calculated with the 3, 5-year survival rate, and the result analyses were the same as the HR. The median survival time will also be compared between the vascular resection group and the non- vascular resection group.

Subgroup analysis: **Subgroup analysis will be used to explore possible sources of heterogeneity.**

Sensitivity analysis: **Sensitivity analyses will be used to assess publication bias. We will conduct it by removing the involved study at a time to evaluate the reliability stability of the results.**

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

Keywords: **portal vein resection; hepatic artery; hilar cholangiocarcinoma; survival; meta-analysis.**

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