

INPLASY PROTOCOL

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None declared.

Early versus delayed cholecystectomy for mild gallstone pancreatitis

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Review question / Objective: Acute pancreatitis is one of the most common gastrointestinal disorders requiring emergency admission to hospital. Gallstones remain the most common cause for acute pancreatitis. After resolution of the initial attack, approximately 25% to 63% of patients may experience a recurrent episode of gallstone pancreatitis in 2 weeks. Cholecystectomy is therefore considered as a definitive treatment for acute gallstone pancreatitis. However, the optimal timing of cholecystectomy remains controversial.

Condition being studied: Practice guidelines from various international societies recommend performing cholecystectomy during the same admission or within 2 to 4 weeks following discharge for patients with mild gallstone pancreatitis. However, the current status of adherence to the guidelines is variable, with 23% performed in Germany, 34.2% in the UK, and 50% in the USA. In practice, majority of surgeons prefer delayed cholecystectomy until complete resolution of the inflammatory process.

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 06 April 2022 and was last updated on 06 April 2022 (registration number INPLASY202240033).

INTRODUCTION

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the initial attack, approximately 25% to 63% of patients may experience a recurrent episode of gallstone pancreatitis in 2 weeks. Cholecystectomy is therefore considered as a definitive treatment for acute gallstone pancreatitis. However, the optimal timing of cholecystectomy remains controversial.

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METHODS

Participant or population: Patients with mild gallstone pancreatitis.

Intervention: Cholecystectomy.

Comparator: One group was early laparoscopic cholecystectomy (cholecystectomy performed during the same admission), and another group was delayed laparoscopic cholecystectomy (interval cholecystectomy performed at readmission).

Study designs to be included: RCTs and retrospective studies.

Eligibility criteria: (1) studies comparing the clinical outcomes of interest between early laparoscopic cholecystectomy and delayed laparoscopic cholecystectomy; (2) studies focusing on mild gallstone pancreatitis.

Information sources: We performed a systematic review of MEDLINE, Embase, and Cochrane Library before January 30, 2021 to identify all relevant studies.

Main outcome(s): The main outcome was conversion to open cholecystectomy.

Quality assessment / Risk of bias analysis: For quality assessment of included studies: RCTs were assessed by utilizing Cochrane handbook for systematic reviews of interventions (version 5.1.0), while observational studies were assessed by utilizing the Newcastle–Ottawa Scale

(NOS). Funnel plots were used to examine publication bias.

Strategy of data synthesis: Two investigators independently extracted the appropriate data onto predefined templates for further data management. Extracted data included authors, country and year of the study, study design, sample size, demographic characteristics, rate of conversion to open cholecystectomy, rate of postoperative complications, operative time, length of hospital stay, number of gallstone-related events, rate of readmission, and ERCP necessity.

Subgroup analysis: Heterogeneity among studies was tested using Cochran Chi-square test and I^2 , in which $I^2 > 50\%$ suggested significant heterogeneity. A fixed-effects model was used when $I^2 < 50\%$, while a random-effects model was used when $I^2 > 50\%$. A two-tailed p value of < 0.05 was regarded as statistically significant. If $I^2 > 50\%$, underlying sources of heterogeneity were identified by sensitivity analyses. Where possible, subgroup analyses were also performed to explore potential sources of heterogeneity.

Sensitivity analysis: Heterogeneity among studies was tested using Cochran Chi-square test and I^2 , in which $I^2 > 50\%$ suggested significant heterogeneity. A fixed-effects model was used when $I^2 < 50\%$, while a random-effects model was used when $I^2 > 50\%$. A two-tailed p value of < 0.05 was regarded as statistically significant. If $I^2 > 50\%$, underlying sources of heterogeneity were identified by sensitivity analyses.

Country(ies) involved: China.

Keywords: Gallstone pancreatitis; Cholecystectomy; Review, Meta-analysis.

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