

# Validating a tool to predict switch to open surgery in laparoscopic treatment for acute gallbladder inflammation: insights from multiple centers

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		<input type="checkbox"/> Protocol
<b>Registration date</b> 17/05/2024	<b>Overall study status</b> Completed	<input type="checkbox"/> Statistical analysis plan
		<input type="checkbox"/> Results
<b>Last Edited</b> 17/05/2024	<b>Condition category</b> Digestive System	<input type="checkbox"/> Individual participant data
		<input type="checkbox"/> Record updated in last year

## Plain English summary of protocol

### Background and study aims

This study investigates risk factors associated with conversion from early laparoscopic cholecystectomy (ELC) to open cholecystectomy in patients diagnosed with acute calculous cholecystitis (ACC). The primary objective is to develop and externally validate a predictive model based on the study research data.

### Who can participate?

Adult patients with a first-time diagnosis of ACC undergoing early laparoscopic cholecystectomy within 7 days of illness onset, according to the Tokyo Guidelines 2018 (TG18) criteria, in eight medical centers in China

### What does the study involve?

This study involves demographic characteristics, corresponding physical examination findings, serum biomarkers, transabdominal ultrasound measurements, disease severity grading, and surgical data of the acute calculous cholecystitis patients who performed early laparoscopic cholecystectomy. These data will be collected from the medical records of Huadu District People's Hospital of Guangzhou.

### What are the possible benefits and risks of participating?

This study will aid in identifying patients at higher risk of conversion, allowing surgeons to tailor surgical approaches and optimize patient outcomes.

This study is a retrospective research and did not involve intervening in the treatment of patients. The possible risk is the security and confidentiality issues of patient information. During the research process, to protect the patient's privacy rights, all of the patients' personal identity information was removed.

Where is the study run from?

Huadu District People's Hospital of Guangzhou (China)

When is the study starting and how long is it expected to run for?

January 2019 to June 2022

Who is funding the study?

1. The Internal Medicine Research Fund of Huadu District People's Hospital of Guangzhou (China)
2. The Construction of Major Subject of Huadu District People's Hospital of Guangzhou (China)

Who is the main contact?

Prof Hongsheng Wu, crazywu2007@126.com (China)

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## Contact information

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# Additional identifiers

## Protocol serial number

2019050, 2019A01, YNZDXK202201

# Study information

## Scientific Title

Multicenter external validation of a nomogram predicting conversion to open cholecystectomy during laparoscopic surgery for acute calculous cholecystitis: a cross-sectional study

## Study objectives

Risk factors associated with conversion from early laparoscopic cholecystectomy

## Ethics approval required

Ethics approval required

## Ethics approval(s)

approved 02/04/2019, Ethics Committee of Huadu District People's Hospital of Guangzhou (48, Xinhua Road, Huadu District, Guangzhou, 510800, China; +86 020-62935386; rykjk@126.com), ref: 35

## Study design

Multicenter cross-sectional study

## Primary study design

Observational

## Study type(s)

Diagnostic

## Health condition(s) or problem(s) studied

Acute calculous cholecystitis who underwent early laparoscopic cholecystectomy

## Interventions

This is a retrospective observational study, the study does not intentionally intervene in the patient's treatment measures. This study mainly involved the exposure factor - Acute calculous cholecystitis patients who performed early laparoscopic cholecystectomy transfer or without transfer to an open operation. All of the observation indicators were obtained during the same hospitalization period.

## Intervention Type

Procedure/Surgery

## Primary outcome(s)

1. Demographic characteristics, such as gender, age, body mass index (BMI), hypertension status, diabetes mellitus, chronic obstructive pulmonary disease (COPD) status, and history of abdominal surgery, measured using data obtained from the Electronic Medical Record System of Huadu District People's Hospital of Guangzhou at one time point

## **Key secondary outcome(s)**

1. White blood cell (WBC) count, C-reactive protein (CRP), procalcitonin (PCT), platelet count, creatinine, international normalized ratio (INR), alanine aminotransferase (ALT), and aspartate aminotransferase (AST), measured using laboratory examinations of blood and with a biochemical analyzer within 24 hours of the patient's onset of illness
2. Transabdominal ultrasound characteristics included gallbladder wall thickness, length and width, number of calculi (single or multiple), calculus location (gallbladder body or neck), calculus diameter ( $\geq 3$ cm or  $< 3$ cm), presence of gallbladder polyps, and pericholecystic effusion, measured using imaging examination with ultrasound machine within 24 hours of the patient's onset of illness

## **Completion date**

30/06/2022

## **Eligibility**

### **Key inclusion criteria**

1. A first-time diagnosis of acute calculous cholecystitis confirmed by the presence of fever and/or chills, laboratory evidence of inflammation and/or abnormal liver function, and imaging confirmation of gall bladder calculus
2. Patients who underwent early laparoscopic cholecystectomy within 7 days of illness onset, according to the Tokyo Guidelines 2018 (TG18) criteria

### **Participant type(s)**

Patient

### **Healthy volunteers allowed**

No

### **Age group**

Adult

### **Lower age limit**

18 years

### **Sex**

All

### **Total final enrolment**

3191

### **Key exclusion criteria**

1. Patients with chronic cholecystitis
2. Acute calculous cholecystitis complicated by acute pancreatitis
3. Non-calculous acute cholecystitis, or choledocholithiasis requiring simultaneous choledocholithotomy and T-tube drainage during laparoscopic cholecystectomy

### **Date of first enrolment**

01/10/2021

**Date of final enrolment**

30/06/2022

## Locations

**Countries of recruitment**

China

**Study participating centre**

Huadu District People's Hospital of Guangzhou

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-

China

-

## Sponsor information

**Organisation**

Huadu District People's Hospital of Guangzhou

## Funder(s)

**Funder type**

Hospital/treatment centre

**Funder Name**

Internal Medicine Research Fund from Huadu District People's Hospital of Guangzhou

**Funder Name**

Construction of Major Subject of Huadu District People's Hospital of Guangzhou

## Results and Publications

**Individual participant data (IPD) sharing plan**

The datasets generated during and/or analysed during the current study are/will be available upon request from Prof Hongsheng Wu, crazywu2007@126.com (China). The datasets and the analysis R code of this study are available.

## **IPD sharing plan summary**

Available on request