

# INPLASY PROTOCOL

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**Corresponding author:**  
Wei-ping Zhang

740090325@qq.com

**Author Affiliation:**  
Zhuji People's Hospital of  
Zhejiang Province

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submission:** The review has  
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**Conflicts of interest:**  
None.

## INTRODUCTION

**Review question / Objective:** Can  
acupuncture therapy help prevent  
postoperative complications in  
laparoscopic cholecystectomy and which  
one is best?

## Acupuncture therapy strategy options in postoperative management after laparoscopic cholecystectomy: A protocol for systematic review and Bayesian meta-analysis

Zhang, WP<sup>1</sup>; Zhao, DQ<sup>2</sup>; Qian, GY<sup>3</sup>; Jin, J<sup>4</sup>; Yao, YP<sup>5</sup>; Bian, XM<sup>6</sup>.

**Review question / Objective:** Can acupuncture therapy help  
prevent postoperative complications in laparoscopic  
cholecystectomy and which one is best?

**Condition being studied:** Laparoscopic cholecystectomy is a  
common type of surgical procedure. However, postoperative  
pain, discomfort of shoulder and back, postoperative nausea  
and vomiting and other complications seriously affect the  
postoperative recovery quality of patients. Acupuncture is a  
worldwide-use method complementary and alternative  
method, and some studies have showed its application in  
preventing postoperative complications in laparoscopic  
cholecystectomy but it is still controversy which acupuncture  
treatment is best. Thus, we decide to make a network meta-  
analysis to solve it.

**INPLASY registration number:** This protocol was registered with  
the International Platform of Registered Systematic Review and  
Meta-Analysis Protocols (INPLASY) on 10 December 2020 and  
was last updated on 10 December 2020 (registration number  
INPLASY2020120056).

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Acupuncture is a worldwide-use method complementary and alternative method, and some studies have showed its application in preventing postoperative complications in laparoscopic cholecystectomy but it is still controversy which acupuncture treatment is best. Thus, we decide to make a network meta-analysis to solve it.

## METHODS

**Participant or population:** Patients who underwent laparoscopic cholecystectomy.

**Intervention:** Patients in experimental group used any acupoint stimulation regimens will be included, for instance, manual acupuncture, electroacupuncture, moxibustion, transcutaneous electric nerve stimulation and acupressure. Considering that clinicians may combine acupuncture with medications, those studies will also be included.

**Comparator:** Patients in control group used usual care, placebo/sham acupuncture, medications. But other complementary or alternative therapies were excluded

**Study designs to be included:** Randomized control trials

**Eligibility criteria:** Peer-reviewed randomized control trails will be eligible for inclusion. And language will be restricted to English and Chinese.

**Information sources:** PubMed, Cochrane library, Web of Science, Embase, China National Knowledge Infrastructure, Wanfang Database, VIP Database, and China Biology Medicine disc.

**Main outcome(s):** (1) postoperative pain (2) postoperative nausea and vomiting.

**Additional outcome(s):** (1) assumption of analgesics; (2) assumption of antiemetics; (3) safety of acupuncture; (4) other outcomes will also be assessed if necessary.

**Quality assessment / Risk of bias analysis:** Cochrane risk-of-bias tool (ROB 2.0) will be used to evaluate the quality.

**Strategy of data synthesis:** Pairwise meta-analysis. Only 3 or more studies reported the same outcome will be performed by Stata 14.0. Odds ratio (OR) and 95% confidence interval (CI) and standard mean difference (SMD) with the 95% CI will be adopted to calculate dichotomous variables and continuous variables, respectively. I-square will be used to statistic heterogeneity. It's regarded as the boundary that if  $I\text{-square} \leq 50\%$ , a fixed will be more suitable, otherwise a random effect model will be performed. When pairwise comparison studies  $\geq 10$ , a Begg's testing will be performed to explore the publication bias. NMA. NMA will be performed by Addis1.16.8, OpenBUGS 3.2.3, R3.6.3 and STATA 14.0. Our reasonable PICOS will help lower the clinical heterogeneity by limiting the participants' characteristics, interventions and outcomes of the included trials. R was used to assess the methodological heterogeneity. Node spilt analysis through the comparison of direct and indirect effect will be performed to assess inconsistency. League figures will be used to demonstrate the results of multiple treatment comparisons. The surface under the cumulative ranking curve (SUCRA) values will point out the best choice based on the included studies.

**Subgroup analysis:** Subgroup analysis and regression analysis will be conducted according to elements like acupuncture regimens and publication year if reasonable.

**Sensibility analysis:** Sensitivity analysis will be accomplished if sufficient studies are available before selecting model.

**Language:** English and Chinese.

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

**Keywords:** acupuncture therapy; laparoscopic cholecystectomy; postoperative nausea and vomiting;

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analgesia; enhanced recovery after surgery; network meta-analysis.

**Contributions of each author:**

Author 1 - Wei-ping Zhang.

Email: 740090325@qq.com

Author 2 - Dong-qing Zhao.

Email: 148253864@qq.com

Author 3 - Guang-yu Qian.

Email: clark101@126.com

Author 4 - Jing Jin.

Email: 304857080@qq.com

Author 5 - Yin-ping Yao.

Email: 116115881@qq.com

Author 6 - Xing-mao Bian.

Email: 13515752658@163.com