INPLASY

Laparoscopy versus laparotomy in treatment of heterotopic pregnancy: A systematic review and meta-analysis

INPLASY202530131
doi: 10.37766/inplasy2025.3.0131
Received: 31 March 2025
Published: 31 March 2025

Zhou, Q; Fu, K.

Corresponding author:
Qifei Zhou

13975102150@163.com

Author Affiliation:
Xiangya Hospital, Central South University.

ADMINISTRATIVE INFORMATION

Support - None.

Review Stage at time of this submission - Data analysis.

Conflicts of interest - None declared.

INPLASY registration number: INPLASY202530131

Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 31 March 2025 and was last updated on 31 March 2025.

INTRODUCTION

Review question / Objective This study aimed to compare the efficacy and safety of laparoscopy and laparotomy in the treatment of heterotopic pregnancy by using a meta-analytic approach.

Condition being studied Heterotopic pregnancy is a rare but potentially life-threatening condition, and both laparoscopy and laparotomy are treatment options.

METHODS

Search strategy Wanfang: （主题：复合妊娠）OR（主题：宫内外同时妊娠）AND（主题：手术）AND（主题：妊娠结局）
CNKI: （主题：复合妊娠）OR（主题：宫内外同时妊娠）AND（主题：手术）AND（主题：妊娠结局）
VIP: （K = 复合妊娠 OR K = 宫内外同时妊娠）AND K = 手术 AND K = 妊娠结局
PubMed: (("HP"[Title/Abstract] OR "heterotopic pregnancy"[Title/Abstract] OR "Pregnancy, Heterotopic"[MeSH Terms]) AND ("LS"[Title/Abstract] OR "laparoscopic surgery"[Title/Abstract] OR "Laparoscopy"[MeSH Terms] OR "open surgery"[Title/Abstract] OR "laparotomy"[MeSH Terms]) AND ("pregnancy outcome"[Title/Abstract] OR "gestational outcome"[Title/Abstract] OR "Pregnancy Outcome"[MeSH Terms]))
Web of Science: heterotopic pregnancy (Topic) and Pregnancy Outcome (Topic)
ScienceDirect: “heterotopic pregnancy” and “Pregnancy Outcome”.

Participant or population Heterotopic pregnancy diagnosed by imaging.

Intervention Laparoscopic removal of EP foci.

Comparator The laparotomy treatment group.

Study designs to be included Observational studies or clinical trials.

Eligibility criteria The inclusion criteria are as follows: (1) patients: heterotopic pregnancy diagnosed by imaging; (2) intervention: laparoscopic removal of EP foci; (3) control: the laparotomy treatment group; (4) outcomes: intrauterine pregnancy outcomes, including live birth rate, abortion rate, preterm birth rate, full-term birth rate, caesarean section, vaginal delivery; (5) study design: observational studies or clinical trials.

Information sources Electronic searches covered three major English databases, namely PubMed, Web of Science, and ScienceDirect, as well as three major Chinese databases, namely Wanfang Data, China National Knowledge Infrastructure (CNKI), and VIP.

Main outcome(s) Intrauterine pregnancy outcomes, including live birth rate, abortion rate, preterm birth rate, full-term birth rate, caesarean section, vaginal delivery.

Quality assessment / Risk of bias analysis Newcastle-Ottawa Scale (NOS).

Strategy of data synthesis The treatment effects of laparoscopy versus laparotomy were assigned as categorical outcomes, and the odds ratio (OR) with 95% confidence interval (CI) were calculated before data pooling. The random effects model with DerSimonian-Laird method was used to combine the effect sizes to fully incorporate the clinical heterogeneity among studies.

Subgroup analysis Subgroup analyses were conducted according to sample size, patient status, and study quality.

Sensitivity analysis The leave-one-out cross-validation method was employed to assess the impact intensity of a single study on the combined results.

Country(ies) involved China.

Keywords Laparoscopy; laparotomy; heterotopic pregnancy; systematic review; meta-analysis.

Contributions of each author

Author 1 - Qifei Zhou.
Email: 13975102150@163.com
Author 2 - Kun Fu.
Email: csufranklin@163.com