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Uterine artery embolization versus hysterectomy for hysteromyoma: a meta-analysis of ovarian function

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ADMINISTRATIVE INFORMATION

Support - None.

Review Stage at time of this submission - Data analysis.

Conflicts of interest - None declared.

INPLASY registration number: INPLASY202420021

Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 05 February 2024 and was last updated on 05 February 2024.

INTRODUCTION

Review question / Objective To compare the ovarian function between patients who underwent uterine artery embolization and hysterectomy for hysteromyoma.

Condition being studied Hysteromyoma is the most common benign tumor in female senital system, with the incident rate of 20%-25% . The common clinical manifestations are menstrual disorder, miscarriage, pressure effects, and reproductive dysfunction. Although hysterectomy and myomectomy are the two conventional surgical options for the treatment of hysteromyoma, uterine artery embolization (UAE), which was introduced for treating hysteromyoma in 1995, has become increasingly accepted as a minimally invasive and uterine-sparing nonsurgical treatment alternative when avoidance of surgery or conservation of the uterus is desired.

METHODS

Search strategy ((uterine fibroid) AND ((embolization) OR (UAE))) AND ((((surgery) OR (resection)) OR (myomectomy)) OR (hysterectomy)).

Participant or population Hysteromyoma patients.

Intervention Uterine artery embolization.

Comparator Hysterectomy.

Study designs to be included Comparative studies.

Eligibility criteria (a) Types of studies: comparative studies;(b) Diseases: patients with hysteromyoma; (c) Types of interventions: uterine artery embolization versus surgery;(d) Languages: not limited.

Information sources The PubMed, Embase, Cochrane Library, and Wanfang databases were searched to identify relevant articles.

Main outcome(s) Ovarian function test.

Quality assessment / Risk of bias analysis The Cochrane risk-of-bias tool was used to establish the quality of randomized controlled trials (RCTs), with each of the following being assigned a low, high, or unclear risk of bias: performance, attrition, detection, selection, reporting, and other bias. Observational study quality was assessed using the Newcastle-Ottawa scale (NOS), which assigns points to each study based on selection (4 points), comparability (2 points), and exposure (3 points) criteria. A NOS score ≥ 7 was considered indicative of a high-quality study.

Strategy of data synthesis This meta-analysis and associated analyses were conducted using RevMan v5.3 and Stata v12.0. For dichotomous variables, pooled odds ratios (ORs) with 95% confidence intervals (CIs) were calculated, while continuous variables were compared using mean differences (MD) values with 95% CIs. The I2 statistic and Q test were used to assess heterogeneity, with an I2 > 50% being considered indicative of significant heterogeneity. When heterogeneity was significant, random-effects models were used, whereas fixed-effect models were otherwise used. Sensitivity analyses were conducted via a “leave one out” approach in an effort to detect sources of heterogeneity. Subgroup analyses were additionally conducted of studies focused specifically on ground glass nodules (GGNs). Publication bias was analyzed using Egger’s test, with $P < 0.05$ as the significance threshold.

Subgroup analysis None.

Sensitivity analysis Yes.

Country(ies) involved China.

Keywords Uterine artery embolization; Hysteromyoma; Hysterectomy.

Contributions of each author
Author 1 - Lin Li.
Author 2 - Yi Liu.
Author 3 - Feng-Fei Xia.