INPLASY PROTOCOL

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Review Stage at time of this submission: Data analysis.

Conflicts of interest: None declared.

Comparation of magnetic resonance hysterosalpingography and hysterosalpingosonography for the assessment of fallopian tubal occlusion of female infertility: A protocol for systematic review and meta-analysis

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Review question / Objective: To evaluate the diagnostic performance of magnetic resonance hysterosalpingography (MR-HSG) for fallopian tubal occlusion in the context of female infertility when compared to the diagnostic performance of hysterosalpingosonography (Sono-HSG) in evaluation of fallopian tubal occlusion of female infertility.

Condition being studied: This study will only include high quality clinical cohort or case control studies that evaluate the diagnostic performance of MR-HSG when compared to Sono-HSG in evaluation of fallopian tubal occlusion of female infertility.

Information sources: We will search PubMed, Web of Science, Cochrane Library, and Chinese biomedical databases from their inceptions to the May 31, 2021, without language restrictions. Two authors will independently carry out searching literature records, scanning titles and abstracts, full texts, collecting data, and assessing risk of bias. Review Manager 5.2 and Stata14.0 software will be used for data analysis.

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 15 June 2021 and was last updated on 15 June 2021 (registration number INPLASY202160048).

INTRODUCTION

Review question / Objective: To evaluate the diagnostic performance of magnetic resonance hysterosalpingography (MR-HSG) for fallopian tubal occlusion in the context of female infertility when compared to the diagnostic performance of hysterosalpingosonography (Sono-HSG) in

evaluation of fallopian tubal occlusion of female infertility.

Condition being studied: This study will only include high quality clinical cohort or case control studies that evaluate the diagnostic performance of MR-HSG when compared to Sono-HSG in evaluation of fallopian tubal occlusion of female infertility.

METHODS

Participant or population: The patients should be those who had undergone fallopian tubal occlusion of female infertility.

Intervention: Fallopian tubal occlusion of female infertility of all patients were assessed with MR-HSG or Sono-HSG.

Comparator: Fallopian tubal occlusion of female infertility of all patients were assessed with Laparoscopic examination and conventional X-ray hysterosalpingography (X-HSG).

Study designs to be included: This study will only include high quality clinical cohort or case control studies that evaluate the diagnostic performance of MR-HSG when compared to Sono-HSG in evaluation of fallopian tubal occlusion of female infertility.

Eligibility criteria: 1.1. Type of study. This study will only include high quality clinical cohort or case control studies that evaluate the diagnostic performance of MR-HSG when compared to Sono-HSG in evaluation of fallopian tubal occlusion of female infertility. 1.2. Type of patients. The patients should be those who had undergone fallopian tubal occlusion of female infertility. 1.3. Intervention and comparison. Fallopian tubal occlusion of female infertility of all patients were assessed with Laparoscopic examination and conventional X-ray hysterosalpingography (X-HSG). 1.4. Type of outcomes. The primary outcomes include a semi-quantitative scoring system, through which fallopian tubal occlusion of female infertility

was graded by means of both MR-HSG and Sono-HSG.

Information sources: We will search PubMed, Web of Science, Cochrane Library, and Chinese biomedical databases from their inceptions to the May 31, 2021, without language restrictions. Two authors will independently carry out searching literature records, scanning titles and abstracts, full texts, collecting data, and assessing risk of bias. Review Manager 5.2 and Stata14.0 software will be used for data analysis.

Main outcome(s): This systematic review will investigate whether MR-HSG has more diagnostic value than Sono-HSG in evaluation of fallopian tubal occlusion of female infertility.

Quality assessment / Risk of bias analysis: Two authors will independently select the trials according to the inclusion criteria, and import into Endnote X9. Then remove duplicated or ineligible studies. Screen the titles, abstracts, and full texts of all literature to identify eligible studies. All essential data will be extracted using previously created data collection sheet by 2 independent authors. Discrepancies in data collection between 2 authors will be settled down through discussion with the help of another author. The following data will be extracted from each included research: year of article, first author's surname, sample size, number of microvascular flow grades within the MN, number of every grade. The quality of selected studies will be independently evaluated according to a tool for the quality assessment of methodological index for non-randomized studies (MINORS). The MINORS criteria included 12 assessment items. Each of these items is scored as "yes" (2), "no" (0), or "unclear" (1). MINORS score ranged from 0 to 24; and score≥17 indicate a good quality. Any disagreements between 2 investigators will be solved through discussion or consultation by a 3rd investigator.

Strategy of data synthesis: The STATA version 15.1 software (Stata Corporation,

College Station, TX, USA) will be used for meta-analysis. We calculated the pooled summary odds ratio (OR) and its 95% confidence interval (CI). The Cochran's Q-statistic and I2 test will be used to evaluate potential heterogeneity between studies [15]. If the Q-test shows a P50%, indicating significant heterogeneity, and the random effect model will be employed or if heterogeneity is not significant, the fixed-effects model was used. If it is possible, we will perform meta-analysis to analyze the pooled outcome data when acceptable homogeneity has been identified. Otherwise, we will conduct subgroup analysis to investigate potential causes for substantial heterogeneity among eligible studies. Sensitivity analysis will be performed to evaluate the influence of a single study on the overall estimate. We will use Begger's funnel plots and Egger's linear regression test to investigate publication bias.

Subgroup analysis: We will conduct subgroup analysis to investigate potential causes for substantial heterogeneity among eligible studies. Sensitivity analysis will be performed to evaluate the influence of a single study on the overall estimate.

Sensitivity analysis: Sensitivity analysis will be performed to evaluate the influence of a single study on the overall estimate.

Country(ies) involved: China.

Keywords: female infertility; magnetic resonance hysterosalpingography; hysterosalpingosonography; fallopian tubal occlusion.

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