INPLASY PROTOCOL

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Review Stage at time of this submission: **The review has not yet started.**

Conflicts of interest:
None.

Neonatal effect of remifentanil in caesarean section with general anesthesia: A protocol of systematic review and meta-analysis

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Review question / Objective: **Does remifentanil have neonatal effect (NE) during the cesarean section (CS) under general anesthesia?**
Condition being studied: **Caesarean section, neonatal effect, and remifentanil.**
Information sources: **Electronic searches In conjunction with a specialist librarian, following electronic databases will be searched from MEDLINE, EMBASE, Cochrane Library, Web of Science, Chinese Biomedical Literature Database, and China National Knowledge Infrastructure. All databases will be searched from the beginning of each database to March 20, 2020. We will not impose any language and publication status limitations. Other resources In addition, we will also check conference proceedings and reference lists of all included studies.**

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 05 April 2020 and was last updated on 05 April 2020 (registration number INPLASY202040028).

INTRODUCTION

Review question / Objective: **Does remifentanil have neonatal effect (NE) during the cesarean section (CS) under general anesthesia?**

Condition being studied: **Caesarean section, neonatal effect, and remifentanil**

METHODS

Participant or population: **We will include pregnant adult women (more than 18 years old), who received remifentanil in CS under general anesthesia, without limitations of their race, and educational background.**

Intervention: **We will include all participants who underwent remifentanil in CS under general anesthesia in the experimental group.**
Comparator: **In the control group, all the participants can receive any anesthesia intervention except the remifentanil.**

Study designs to be included: We will consider all randomized controlled trials (RCTs) that assessing the NE of remifentanil in CS under general anesthesia for inclusion.

Eligibility criteria: We will consider all RCTs that assessing the NE of remifentanil vs. any anesthesia in CS under general anesthesia for inclusion.

Information sources: Electronic searches In conjunction with a specialist librarian, following electronic databases will be searched from MEDLINE, EMBASE, Cochrane Library, Web of Science, Chinese Biomedical Literature Database, and China National Knowledge Infrastructure. All databases will be searched from the beginning of each database to March 20, 2020. We will not impose any language and publication status limitations. Other resources In addition, we will also check conference proceedings and reference lists of all included studies.

Main outcome(s): The primary outcome is the evaluation of neonatal adaptation, as measured using Apgar score or relevant tools.

Additional outcome(s): The secondary outcomes are requirements for postoperative respiratory support of neonates, systolic and diastolic non-invasive blood pressure, mean blood pressure, heart rate, electrocardiography, umbilical cord blood gas analysis (such as pulse oximetry, and base excess), and adverse events.

Data management: Data from all eligible studies will be extracted using a previous designed standardized data collection sheet. At least two authors will collect data independently. Any discrepancies between two authors will be resolved by another author through discussion to reach final decision. The extracted information includes study information (such as time of publication, first author, journal information, et al), study characteristics (such as design, setting, location, funding information, et al), participant characteristics (such as race, age, sample size, inclusion and exclusion criteria, et al), intervention and control details (such as dosage, types, duration, et al), and outcomes (such as primary, secondary outcomes, safety, et al). If we identify any missing or insufficient, or unclear data, we will contact primary authors to request those data.

Quality assessment / Risk of bias analysis: At least two independent authors will assess risk of bias for each included study using Cochrane risk of bias tool, respectively. Conflicts regarding the risk of bias between two authors will be verified and solved by a third author if needed. It will assess each study through 7 fields, and each one is classified as low, unclear or high risk of bias.

Strategy of data synthesis: We will undertake all statistical analysis using RevMan V.5.3 software. Whenever there is low heterogeneity, a fixed-effects model will be applied, and meta-analysis will be conducted if sufficient studies focusing on the same treatments, comparators, and outcome measurements. Whenever there is high heterogeneity, a random-effects model will be used, and subgroup analysis will be undertaken to investigate the reasons of high heterogeneity among included studies. Additionally, we will also report outcome results as narrative summary.

Subgroup analysis: If feasible from available data, we will carry out subgroup analysis to explore the possible reasons of high heterogeneity in according to the different interventions, comparators, and outcome measurements.

Sensibility analysis: We will undertake sensitivity analysis to establish stability of outcome results by eliminating high risk of bias studies.

Countries involved: China

Keywords: Caesarean section; neonatal effect; remifentanil; randomized controlled trials.