INPLASY

Inadvertent hypothermia in obstetric patients: Options for prevention and treatment. Scoping Review Protocol

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ADMINISTRATIVE INFORMATION

Support - No.

Review Stage at time of this submission - Data analysis.

Conflicts of interest - None declared.

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Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 3 August 2025 and was last updated on 3 August 2025.

INTRODUCTION

Review question / Objective 1. What methodologies are used in studies on the prevention and treatment of inadvertent hypothermia in obstetric patients, what outcomes are reported, and how are these outcomes measured?
2. Are there differences in the definition(s) of inadvertent hypothermia in surgical and obstetric practice?
3. What methods of treatment of inadvertent hypothermia in abdominal delivery or spontaneous vaginal delivery, as well as the postpartum period, are presented in the available literature?
4. Additional clarifying questions:
- What specific methods of delivery (spontaneous vaginal delivery, elective, urgent, or emergency cesarean section [CS]), types of anesthesia, and predicted blood loss are the current methods of prevention/treatment of hypothermia focused on?
- What factors contribute to the development and aggravation of hypothermia in obstetric patients?
- What are the negative consequences of inadvertent hypothermia in obstetrics, including in patients with PPH?
5. What are the gaps in knowledge considering the different types of evidence synthesis?

Background Inadvertent perioperative hypothermia (IPH) is an accidental or unintentional decrease in core body temperature below 36.0°C, which can cause cold injury and is a complication for the patient. In the literature, there are differences both in the definitions of IPH (inadvertent, unintentional, accidental, induced) and its temperature thresholds. IPH can impact CS and labor outcomes, including abnormal blood loss, tremors, infectious complications, delayed recovery, and cardiovascular complications. The effect of hypothermia on blood loss in the context of postpartum haemorrhage (PPH) remains largely unknown to date. Thus, there is uncertainty in the selection of the most appropriate methods of active warming of obstetric patients, in particular, in patients at high risk of PPH.

Rationale The justifications for choosing the ScR methodology in our study include a limited number of publications on the topic, the need to clarify the working definitions of inadvertent hypothermia, heterogeneous evidence regarding the methods of treatment of IPH in obstetric practice, the identification of gaps, and the desire to obtain a holistic view of the available data.

METHODS

Strategy of data synthesis Our search strategy will consist of three steps:
Step 1: Initial limited search in PubMed, EBSCO, and Mendeley (until March 2025) with analysis of words in titles and abstracts of articles and terms from the description of articles.
Step 2: Search for all identified keywords and terms in all included databases. The following terms will be included: active warming; hypothermia; epidural anesthesia, spinal anesthesia, obstetric anesthesia, anesthetic recovery; anaesthesia; epidural; spinal; obstetric*; anaesthe*; postanaesthe*; neural; caesarean section; caesarean*; cesarean, c-section; abdominal delivery; abdominal deliveries; delivery; postnatal care; postpartum; scoping reviews; systematic reviews in combination with AND and OR logical operators. The following keywords will be used in the Russian-language databases Google Scholar and eLIBRARY.RU: hypothermia; active warming; cesarean section; childbirth; spinal anesthesia; epidural anesthesia; perioperative period.
Step 3: References from relevant sources will be searched for additional references.

Eligibility criteria Population: obstetric patients, regardless of the method of delivery and its urgency (elective, urgent, emergent CS, spontaneous, or induced childbirth).
Concept: inadvertent hypothermia, warming methods (definitions, methodological approaches, study design, interventions).
Context: treatment of hypothermia in the context of blood loss, PPH, and coagulopathy. Types of evidence sources: primary studies, systematic reviews, meta-analyses, ScR, guidelines, and clinical recommendations.

Source of evidence screening and selection Two authors will perform the initial selection of titles and abstracts; the full texts will be evaluated for compliance with the inclusion criteria, and the disagreements will be resolved through discussion with a third author. A structured Excel form will be developed for data extraction.

Data management Source management will be performed using the Mendeley Desktop software. After removing duplicates, it is planned to import publications into the Rayyan review management platform.

Reporting results / Analysis of the evidence The results of all included studies with an analysis of the countries involved will be described in detail.

Presentation of the results The results of the qualitative synthesis of evidence will be presented in the form of tables, a map diagram of methods for warming patients, graphs, and text.

Language restriction There are no language restrictions.

Country(ies) involved Russian Federation.

Other relevant information Review as recommended by PRISMA-ScR.

Keywords Maternal hypothermia; perioperative hypothermia; cesarean section; spontaneous delivery; scoping review.

Dissemination plans We propose to present the results of ScR in the form of a publication covering options for the prevention and treatment of inadvertent hypothermia in obstetric patients.

Contributions of each author
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