INPLASY

Effects of early water intake alone and early water and food intake on postoperative outcomes after adult non-gastrointestinal surgeries under general anesthesia

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ADMINISTRATIVE INFORMATION

Support - No.

Review Stage at time of this submission - Formal screening of search results against eligibility criteria.

Conflicts of interest - None declared.

INPLASY registration number: INPLASY202560015

Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 4 June 2025 and was last updated on 4 June 2025.

INTRODUCTION

Review question / Objective P: patients aged 18 years and older who are scheduled to undergo non-gastrointestinal surgical procedures with general anesthesia.
I: The intervention is characterized by the early postoperative administration of water alone or both water and food, as delineated by the authors.
C: The control is defined by the intake of water or food occurring 4-6 hours postoperatively, or by the conventional methods of intake.
O: The outcomes assessed in the study include the incidence of nausea or vomiting.
S: The study design is randomized controlled trial.
P: patients aged 18 years and older who are scheduled to undergo non-gastrointestinal surgical procedures with general anesthesia.
I: The intervention is characterized by the early postoperative administration of fluids or food, as delineated by the authors.
C: The control is defined by the intake of fluids or food occurring 4-6 hours postoperatively, or by the conventional methods of intake.
O: The outcomes assessed in the study include the incidence of nausea or vomiting.
S: The study design is randomized controlled trial.

Condition being studied The global rise in the frequency of surgical interventions has intensified the focus on promoting rapid recovery for surgical patients within the domain of perioperative medicine. Historically, it has been suggested that to reduce the risks of nausea, vomiting, and aspiration linked to residual anesthetics and incomplete recovery from anesthesia, a safe interval for oral intake following general anesthesia in non-gastrointestinal surgeries is approximately 4 to 6 hours. However, the adoption of Enhanced Recovery After Surgery (ERAS) protocols has led both the American Society of Anesthesiologists and ERAS guidelines to endorse early postoperative feeding as a strategy to improve intestinal motility and accelerate patient recovery. Currently, two established protocols exist for early feeding after general anesthesia: the first allows patients to consume small amounts of water multiple times after meeting hydration criteria, with

solid food intake commencing either 6 hours post-surgery or upon the passage of gas, referred to as early water intake alone; the second protocol permits the introduction of liquid or semi-liquid foods once early water intake has been tolerated without adverse effects, termed early water and food intake. Three meta-analyses have demonstrated that, compared to traditional postoperative feeding practices, both early water intake alone and early water and food intake do not increase the incidence of nausea, vomiting, or abdominal distension, while significantly reducing the occurrence of constipation and decreasing the time to the first passage of gas and bowel movement, thereby facilitating the recovery of gastrointestinal function. Nevertheless, there is a lack of clinical studies that directly compare the recovery outcomes associated with early water intake alone versus early water and food intake following general anesthesia. Therefore, this study aims to utilize network meta-analysis to indirectly assess the effects of early water intake alone and early water and food intake on recovery outcomes in patients undergoing non-gastrointestinal surgeries under general anesthesia.

METHODS

Participant or population Patients aged 18 years and older who are scheduled to undergo non-gastrointestinal surgical procedures with general anesthesia.

Intervention Early postoperative administration of water alone or both water and food, as delineated by the authors.

Comparator Intake of water or food occurring 4-6 hours postoperatively, or by the conventional methods of intake.

Study designs to be included Randomized controlled trial.

Eligibility criteria Exclusion criteria: ① Unclear dietary intervention; ② Duplicate publications; ③ Studies with significant contradictions in the results; ④ Incomplete data that cannot calculate the Mean Difference (MD) or Odds Ratio (OR).

Information sources Pubmed, Embase, Cochrane, Web of Science, Weipu, CNKI, Wanfang, China Biomedical Literature Database, with the search period from the establishment of the database to June 1, 2025.

Main outcome(s) Incidence of nausea or vomiting postoperatively.

Quality assessment / Risk of bias analysis Two researchers conducted an independent evaluation of the literature quality and the risk of bias utilizing the Cochrane Collaboration framework. This evaluation encompassed several criteria, including random sequence generation, allocation concealment, blinding of participants, implementers, and outcome assessors, as well as the handling of incomplete outcome data, selective reporting of results, and other potential biases. In instances where discrepancies arose between the assessments of the two researchers, a third researcher was consulted to render a final decision.

Strategy of data synthesis Continuous data were analyzed using mean differences (MD) accompanied by 95% confidence intervals (CIs), whereas categorical data were represented through odds ratios (OR) and 95% CIs. A frequentist methodology was applied for the network meta-analysis, conducted using STATA version 16.0. Due to the diversity of surgical interventions included in the study, a random effects model was employed for all analyses. The effects of various feeding methods on outcomes were ranked according to the surface under the cumulative ranking curve (SUCRA) analysis. Additionally, a funnel plot was utilized to evaluate the presence of publication bias.

Subgroup analysis Subgroup analysis based on the type of surgery and country.

Sensitivity analysis Sensitivity analysis by excluding low-quality studies.

Country(ies) involved China.

Keywords Early eating; Adult; Non-gastrointestinal surgery; General anesthesia; Meta-analysis.

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