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Interruption of enteral tube feeding during chest physiotherapy in critically ill adults. A scoping review protocol

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ADMINISTRATIVE INFORMATION

Support - None.

Review Stage at time of this submission - Preliminary searches.

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 28 August 2023 and was last updated on 28 August 2023.

INTRODUCTION

Review question / Objective With this scoping review, we want to ask: " What does the evidence say about withholding enteral tube feeding during chest physiotherapy in critically ill adults?"
This scoping review aims to summarize the evidence discussing the interruption of feeding during chest physiotherapy in critically ill adults. In addition, this review aims to describe whether the evidence reports on the risks associated with chest physiotherapy in critically ill adults receiving enteral tube feeding.

Background Providing nutritional support to critically ill patients is crucial for their recovery. Early feeding in these patients can attenuate the severity of the disease, modulate the immune response, and positively impact their clinical outcomes.
Feeding for critically ill patients can begin within 24 to 48 hours of admission to the intensive care unit (ICU). The parenteral or enteral route can provide this, the latter preferred. The enteral route offers the advantage of preventing gastrointestinal mucosal atrophy and bacterial translocation, among other benefits.
Enteral feeding in critically ill patients may be associated with intolerance and adverse effects. This may be mainly due to gastrointestinal tract dysfunction, such as delayed gastric emptying. This alteration, added to the fact that nasoenteric feeding tubes interfere with esophageal sphincter function, could increase the risk of aspiration pneumonia. The administration of large volumes of food could increase this risk, which could be mitigated if the enteral tube is positioned posterior to the pylorus.

Rationale Chest physiotherapy in critically ill adults with an artificial airway includes multiple interventions to increase lung volumes and promote airway clearance. The techniques are based on generating pressure and flow changes in the thoracic and abdominal compartments.
One of the techniques used involves applying pressure to the anterior abdominal wall when the patient is in a supine or lateral decubitus. The force exerted should have a cephaloposterior direction

to promote expiration by increasing the positive pressure in the pleural space adjacent to the diaphragm. This procedure may promote gastroesophageal reflux in enteral tube-fed patients with slow gastric emptying who are fed large volumes.
Although critically ill adults on invasive mechanical ventilation have their airways protected and sealed, aspiration of gastric contents has been reported to be an essential risk factor for pneumonia. For this reason, interruption of enteral tube feeding is often recommended before and during various procedures, most notably chest physiotherapy. However, frequent interruption of feeding may fail to achieve adequate nutritional requirements in critically ill patients.

METHODS

Strategy of data synthesis A systematic search will be conducted in the MEDLINE (Ovid), Embase (Ovid), Cochrane Library, and CINHAL databases. The strategy will be constructed for MEDLINE (Ovid) and adapted for the other databases. It will include controlled language (MeSH, Emtree, CINHAL Headings) and keywords for three groups of concepts: "critically ill patient", "chest physiotherapy" and "enteral feeding".
The search strategy will be designed by one researcher and reviewed by a second.
In addition, the references of the included studies will be screened.

Eligibility criteria Participants: Studies considering critically ill adults fed through enteral tubes will be included. Study participants must have an artificial airway, either an orotracheal tube or tracheostomy, or have been recently extubated or decannulated.
The medical diagnosis of the participants will not limit the inclusion of the studies.
Concept: We will include studies that discuss aspects that should be considered to decrease the risks of adverse events associated with the performance of chest physiotherapy in critically ill adults. In addition, we will include studies that report on the occurrence of vomiting or gastroesophageal reflux during chest physiotherapy.
Context: Studies conducted in a hospital setting will be included. The inpatient unit will not limit the inclusion of studies.
Study design: Primary experimental, quasi-experimental, and observational studies, whether prospective or retrospective, will be included.
Secondary studies (systematic reviews and narrative reviews, among others) on the research topic of this scoping review will be reviewed to access the primary studies.
The language and date of publication will not limit the inclusion of studies. Studies will be excluded if they do not have full text (e.g., conference proceedings).

Source of evidence screening and selection The selection of the studies will be made in duplicate. First, titles and abstracts will be screened to discard irrelevant studies. Then, the full texts of potential studies to be included will be reviewed. Disagreements will be resolved by consensus.

Data management Data extraction from the included studies will be performed in duplicate. A standard form designed for this review will be used. We will extract bibliometric and methodological information, participant characteristics, and outcomes associated with our research question.

Reporting results / Analysis of the evidence The methodological quality or risk of bias of the included studies will not be assessed.

Presentation of the results The study selection process will be presented in a PRISMA flow chart. The findings will be presented in narrative form and using tables and figures.

Language restriction The publication language of the studies will not limit the search.

Country(ies) involved Chile.

Keywords Chest physiotherapy; enteral tube feeding; critical care; safety; aspiration pneumonia.

Dissemination plans The findings of this scoping review will be used to update local protocols that aim to promote the safety of critically ill adults during chest physiotherapy.
In addition, this review will be presented at specialty conferences and published in a peer-reviewed journal.

Contributions of each author

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