INPLASY

Effects of early mobilization on the prognosis of critically ill patients in the intensive care units: a meta-analysis

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ADMINISTRATIVE INFORMATION

Support - None.

Review Stage at time of this submission - Preliminary searches.

Conflicts of interest - None declared.

INPLASY registration number: INPLASY202450026

Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 07 May 2024 and was last updated on 07 May 2024.

INTRODUCTION

Review question / Objective Early mobilization has an impact on the prognosis of ICU patients compared to routine care or other care models. Population: Patients in Intensive Care Units; Intervention:early mobilization; Comparison: Routine Nursing Care; Outcome: Length of Stay in ICU,Duration of Mechanical Ventilation,Difference in MRC (Medical Research Council) Score Before and After Intervention,ICU Mortality Rate,Incidence of Adverse Events, Incidence of ICU-AW (ICU-Acquired Weakness) at ICU Discharge. Study: Randomized controlled trials.

Condition being studied Disease Introduction, Disease Burden, and Current Treatment Status of the Disease.

METHODS

Search strategy 1 MeSH descriptor: [Intensive Care Units] explode all trees

2 (Intensive Care Units):ti,ab,kw OR (Intensive Care Unit):ti,ab,kw OR (Unit, Intensive Care):ti,ab,kw OR (ICU Intensive Care Units):ti,ab,kw
3 1 OR 2
4 MeSH descriptor: [Early Ambulation] explode all trees
5 (Early Ambulation):ti,ab,kw OR (Accelerated Ambulation):ti,ab,kw OR (Ambulation, Accelerated):ti,ab,kw OR (Ambulation, Early):ti,ab,kw OR (Early Mobilization):ti,ab,kw OR (Mobilization, Early):ti,ab,kw
6 4 OR 5
7 MeSH descriptor: [Randomized Controlled Trial] explode all trees
8 (Randomized Controlled Trial):ti,ab,kw OR (randomized controlled trial):ti,ab,kw OR (random):ti,ab,kw OR (randomized):ti,ab,kw OR (randomly):ti,ab,kw OR (randomize):ti,ab,kw OR (randomization):ti,ab,kw
9 7 OR 8
10 3 AND 6 AND 9.

Participant or population ICU patients aged 16 years and older will be included without limitation of race,sex,economic level,and severity.

Intervention The intervention measures for the experimental group include early mobilization, which primarily consists of different early mobilization programs such as passive exercises using a bed cycle ergometer. There are no restrictions on the methods, duration, or frequency of early mobilization for the experimental group.

Comparator The intervention measures for the control group include routine care or other standard physical therapies.

Study designs to be included Only randomized controlled trials(RCTs) will be included in this study.

Eligibility criteria We will only include randomized controlled trial (RCT) literature on the use of early mobilization in the treatment of ICU patients. This study will not include any non-randomized controlled trials, case reports, case series analyses, or review articles.

Information sources We will conduct a computer-based search of CBM,China National Knowledge Infrastructure, VIP, Wanfang, PubMed, Embase, Cochrane Library, and Web of Science to collect RCTs on the impact of early mobilization on the prognosis of ICU patients. The search period covers from the establishment of each database to November 18, 2023.

Main outcome(s) 1. Length of stay in ICU (days) 2. Duration of mechanical ventilation (days) 3. Improvement in MRC (Medical Research Council) score before and after intervention 4. Incidence of ICU-AW (ICU-Acquired Weakness) at ICU discharge.

Additional outcome(s) 1. ICU mortality rate 2. Incidence of adverse events, including falls, accidental dislocations of attachments, hemodynamic instability, orthostatic hypotension, or any other adverse events defined by the study authors.

Quality assessment / Risk of bias analysis The quality of all randomized controlled trials will be evaluated using the Cochrane Collaboration tool. Two authors will independently conduct the quality assessments, and any disputes will be discussed and resolved with the other author.

Strategy of data synthesis The meta analysis of data from included outcomes will be performed using the RevMan V.5.4.1,and we will choose a randomized or fixed effect model for data statistics according to the results of the heterogeneity test. The enumeration data were expressed as relative risk (RR), and the weight mean difference (WMD) was used as the measurement data; each effect amount was expressed in 95% confidence interval(CI). The specific methods were as follows:If the heterogeneity was low ($I2$ 50%), the random-effects model will be used for data synthesis after excluding possible heterogeneity sources. The investigation methods included subgroup and sensitivity analyses. If data cannot be synthesized, we provide a descriptive analysis to solve this problem.

Subgroup analysis If there was high heterogeneity ($I2 > 50\%$) among the included studies, we conducted a subgroup analysis to analyze the sources of heterogeneity according to the following factors:literature quality, age, gender, and APACHE II scores and other possible factors affecting the results.If necessary, we will further conduct a subgroup analysis specifically focused on different age groups.

Sensitivity analysis To test the stability and reliability of the results of this study, we conducted a sensitivity analysis according to the following points: method quality,sample size, and missing data. After that,we will perform a data analysis again and compare the results. If there was no directional change after the sensitivity analysis, the results were stable.

Country(ies) involved China.

Keywords Early mobilization, Intensive Care Unit.

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