INPLASY PROTOCOL

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Support: None.

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

Conflicts of interest:
None declared.

Nitrogen balance and Outcomes in Critically Ill Patients: A Systematic Review and Meta-Analysis

Zhu, YB[1]; Yao, Y[2]; Xu, Y[3]; Huang, HB[4].

Review question / Objective: This study aimed to evaluate the impact of Nitrogen balance (NB) on prognosis in such a patient population.
Condition being studied: Nitrogen balance and Outcomes in Critically Ill Patients.
Eligibility criteria: 1) The study focused on the association between NB level and the mortality risk in adult (≥18 years old) patients; 2) The outcome data included any reporting form of survival data that could be extracted; and 3) The study design was limited to cohort, case-control, or RCT design.

INTRODUCTION

Review question / Objective: This study aimed to evaluate the impact of Nitrogen balance (NB) on prognosis in such a patient population.

Condition being studied: Nitrogen balance and Outcomes in Critically Ill Patients.

METHODS

Participant or population: Adult (≥18 years old) critically ill patients.

Intervention: Patients with improved NB.

Comparator: Patients without improved NB.

Study designs to be included: cohort, case-control, or RCT design.

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Information sources: We will search the references in the included studies and personal files. We will request advice from experts in the field. Additionally, we will search associated articles from critical care, surgical, and infection meetings; and contacted the authors of included trials, if needed.

Main outcome(s): All-causes mortality.

Quality assessment / Risk of bias analysis: Newcastle-Ottawa Scale.

Strategy of data synthesis: We combined the results from all relevant studies to estimate the pooled odds ratio (OR) and associated 95% confidence intervals (CIs) for dichotomous outcomes and to estimate mean differences (MD) and 95% CI as the effective results for continuous outcomes. Before data analysis, we estimated the mean from the median and standard deviations (SD) from IQR using the previous study's methods, if required. We used the $I2$ statistic to examine the heterogeneity across these trials. An $I2 > 50\%$ indicates significant heterogeneity. We chose a fixed-effect model for $I2 < 50\%$ and a random-effect model for $I2 \geq 50\%$. Publication bias was performed when at least 10 studies are included in the meta-analysis. In all analyses, we used RevMan version 5.4 (Cochrane Collaboration, Oxford, UK).

Subgroup analysis: (1) Geographic location: Asian or not Asian countries; (2) Sample size: >200 or ≤200; (3) Acute kidney injury (AKI) percentage: >50% or ≤50%; (4) CRRT percentage: >50% or ≤50%; (5) study design: prospective or retrospective study; (6) study quality(NOS): >7 or ≤7; and (7) or mortality prevalence.

Sensitivity analysis: None.

Country(ies) involved: China.

Keywords: nitrogen balance, critically ill, mortality, meta-analysis.

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