

INPLASY PROTOCOL

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None declared.

Neuromuscular blockade for cardiac arrest patients treated with targeted temperature management: A protocol of systematic review and meta-analysis

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Review question / Objective: Neuromuscular-blocking agents (NMBA) are often administered to control shivering in comatose cardiac arrest (CA) survivors during targeted temperature management (TTM) management. Thus, we performed a systematic review and meta-analysis to investigate the effectiveness and safety of NMBA in such a patient population.

Condition being studied: Neuromuscular blockade for cardiac arrest patients treated with targeted temperature management. Our team members are familiar with antibiotic atomization treatment. Furthermore, the team members have published several meta-analyses and can successfully complete this study.

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 18 September 2021 and was last updated on 18 September 2021 (registration number INPLASY202190057).

INTRODUCTION

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(TTM) management. Thus, we performed a systematic review and meta-analysis to investigate the effectiveness and safety of NMBA in such a patient population.

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METHODS

Participant or population: Adult comatose CA survivors managed with any NMBA regimens.

Intervention: CA survivors managed with any NMBA regimens.

Comparator: CA survivors managed without any NMBA regimens.

Study designs to be included: Two arms studies.

Eligibility criteria: Studies were considered for inclusion if they focused on CA survivors during TTM and compared different NMBA strategies, including but not limited to prophylactic NMBA, bolus if demanded or managed without NMBA).

Information sources: We searched studies in PubMed, Embase, and Cochrane Library from inception. Language restriction was limited in English and Chinese. We also reviewed reference lists of relative articles.

Main outcome(s): Mortality at the longest follow-up available and the neurological outcome.

Quality assessment / Risk of bias analysis: We evaluated the quality of included studies using the risk of bias tool recommended by the Cochrane Collaboration in randomized clinical trials (RCTs) and the Newcastle-Ottawa scale for assessing the risk of bias in observational studies.

Strategy of data synthesis: We assessed heterogeneity using the Mantel-Haenszel χ^2 test and the I^2 statistic. An $I^2 < 50\%$ was considered to indicate insignificant heterogeneity, and a fixed-effect model was used, whereas a random-effect model

was used in cases of significant heterogeneity ($I^2 > 50\%$).

Subgroup analysis: We further conducted subgroup analyses basing NMBA strategies.

Sensitivity analysis: Sensitivity analyses were performed by excluding trials that potentially biased the results of primary outcomes.

Country(ies) involved: China.

Keywords: neuromuscular-blocking agents; cardiac arrest; targeted temperature management; neurological outcome; meta-analysis.

Contributions of each author:

Author 1 - Tong Lin.

Author 2 - Yan Yao.

Author 3 - Yuan Xu.

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