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Systematic Review Protocol:Cognitive Function and Psychological Outcomes in Out-of-Hospital Cardiac Arrest Patients Receiving Targeted Temperature Management

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We use this protocol and it's working

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Abstract

This systematic review protocol aims to evaluate the effects of targeted temperature management (TTM) on cognitive and psychological outcomes in survivors of out-of-hospital cardiac arrest (OHCA). It will assess how specific TTM parameters—such as target temperature and duration—influence anxiety, depression, and cognitive function.
Expected results will clarify the relationship between TTM and neuropsychological recovery, identify optimal TTM protocols for clinical practice, and highlight research gaps to guide future studies on personalized post-arrest care.

Guidelines

Follow the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines for the design, conduct, and reporting of this systematic review.

Materials

This systematic review is a secondary analysis of published literature and does not require experimental materials. The tools used for this review include:
1. Reference management software for literature organization and deduplication
2. Electronic databases (PubMed, Embase, Cochrane Library, Web of Science) for literature retrieval
3. Statistical software (e.g., RevMan, Stata) for data synthesis and meta-analysis (if applicable)

Troubleshooting

Problem

Insufficient or incomplete literature retrieval results.

Solution

Use multiple electronic databases (PubMed, Embase, Cochrane Library, Web of Science) and supplement with grey literature (e.g., conference abstracts, clinical trial registries). Adjust search strategies by adding synonyms and expanding keywords.

Problem

Disagreement between two reviewers during literature screening or data extraction.

Solution

Resolve discrepancies through discussion between reviewers; if consensus cannot be reached, involve a third reviewer for arbitration.

Safety warnings

Avoid selection bias by ensuring two independent reviewers conduct literature screening and data extraction.

Ethics statement

This systematic review is based on publicly available published literature and does not involve new animal experiments, human subjects research, or data collection from living individuals. Therefore, ethical approval is not required for this study.

Before start

1. Confirm that the systematic review protocol has been registered on PROSPERO (or relevant platforms).
2. Prepare reference management software for literature screening and organization.

1 Determine the PICO/PICOS framework for the systematic review:
- Population (P): Cardiac Arrest (CA) patients
- Intervention (I): Targeted Temperature Management (TTM)
- Comparison (C): conventional treatment
- Outcomes (O): Cognitive function, psychological outcomes (e.g., anxiety, depression)

2 Register the systematic review protocol on PROSPERO (or other relevant platforms) before literature search.

3 Select electronic databases: PubMed, Embase, Cochrane Library, Web of Science (time range: inception to May 10, 2025).

4 Construct search terms:
#1 MeSH descriptor: [Depression] explode all trees
#2 (Emotional Depression):ti,ab,kw OR (Depressive Symptoms):ti,ab,kw OR (Depressive Symptom):ti,ab,kw OR (Depression):ti,ab,kw
#3 #1 OR #2
#4 MeSH descriptor: [Stress Disorders, Post-Traumatic] explode all trees
#5 (Stress Disorders, Post-Traumatic):ti,ab,kw OR (Chronic Post-Traumatic Stress Disorder):ti,ab,kw OR (Chronic Post Traumatic Stress Disorder):ti,ab,kw OR (oral Injuries):ti,ab,kw OR (Moral Injury):ti,ab,kw
#6 (Injury, Moral):ti,ab,kw OR (Delayed Onset Post-Traumatic Stress Disorder):ti,ab,kw OR (Delayed Onset Post Traumatic Stress Disorder):ti,ab,kw OR (Acute Post-Traumatic Stress Disorder):ti,ab,kw OR (Acute Post Traumatic Stress Disorder):ti,ab,kw
#7 (Posttraumatic Neuroses):ti,ab,kw OR (Post Traumatic Stress Disorders):ti,ab,kw OR (Stress Disorder, Posttraumatic):ti,ab,kw OR (Posttraumatic Stress Disorders):ti,ab,kw OR (Post Traumatic Stress Disorder):ti,ab,kw
#8 (Neuroses, Post Traumatic):ti,ab,kw OR (Posttraumatic Stress Disorder):ti,ab,kw OR (Post-Traumatic Stress Disorders):ti,ab,kw OR (Stress Disorder, Post Traumatic):ti,ab,kw OR (PTSD):ti,ab,kw
#9 (Post-Traumatic Neuroses):ti,ab,kw OR (Stress Disorder, Post-Traumatic):ti,ab,kw OR (Neuroses, Posttraumatic):ti,ab,kw OR (Post-Traumatic Stress Disorder):ti,ab,kw OR (Stress Disorders, Posttraumatic):ti,ab,kw
#10 Neuroses, Post-Traumatic
#11 #4 OR #5 OR #6 OR #7 OR #8 OR #9 OR #10
#12 MeSH descriptor: [Cognitive Dysfunction] explode all trees
#13 (Disorders, Cognitive):ti,ab,kw OR (Cognitive Dysfunction):ti,ab,kw OR (Cognitive Disorder):ti,ab,kw OR (Cognitive Disorders):ti,ab,kw OR (Dysfunctions, Cognitive):ti,ab,kw

#14 (Dysfunction, Cognitive):ti,ab,kw OR (Cognitive Dysfunctions):ti,ab,kw OR (Impairments, Cognitive):ti,ab,kw OR (Cognitive Impairment):ti,ab,kw AND (Cognitive Impairments):ti,ab,kw
#15 (Impairment, Cognitive):ti,ab,kw OR (Disorder, Cognitive):ti,ab,kw OR (Deteriorations, Mental):ti,ab,kw OR (Declines, Cognitive):ti,ab,kw OR (Deterioration, Mental):ti,ab,kw
#16 (Cognitive Declines):ti,ab,kw OR (Mental Deteriorations;):ti,ab,kw OR (Decline, Cognitive):ti,ab,kw OR (Mental Deterioration):ti,ab,kw OR (Cognitive Decline):ti,ab,kw
#17 #12 OR #13 OR #14 OR #15 OR #16
#18 MeSH descriptor: [Anxiety] explode all trees
#19 (Angst):ti,ab,kw OR (Nervousness):ti,ab,kw OR (Anxiousness):ti,ab,kw OR (Hypervigilance):ti,ab,kw OR (Anxiety):ti,ab,kw
#20 #19 OR #18
#21 MeSH descriptor: [Heart Arrest] explode all trees
#22 (Heart Arrest):ti,ab,kw OR (Arrest, Cardiopulmonary):ti,ab,kw OR (Cardiopulmonary Arrest):ti,ab,kw OR (Asystoles):ti,ab,kw OR (Cardiac Arrest):ti,ab,kw
#23 (Arrest, Cardiac):ti,ab,kw OR (Arrest, Heart):ti,ab,kw OR (Asystole):ti,ab,kw
#24 #21 OR #22 OR #23
#25 #3 OR #11 OR #17 OR #20
#26 #25 AND #24

5 Remove duplicate records using reference management software.

6 Screen titles and abstracts independently by 2 reviewers: exclude studies that do not meet PICO/PICOS criteria.

7 Screen full texts of remaining studies independently by 2 reviewers: resolve discrepancies via discussion or third reviewer consultation.

8 Document the screening process (PRISMA flow diagram).

9 Develop a standardized data extraction form (include: study characteristics, sample size, TTM protocol (temperature, duration), cognitive/psychological assessment instruments and outcomes, follow-up time).

10 Extract data independently by 2 reviewers; cross-check for consistency.

11 Assess risk of bias in included studies,using Cochrane Risk of Bias Tool (RoB 2.0) for randomized controlled trials (RCTs), independently by 2 reviewers and a third solving

the disagreements.

12 Present study characteristics (table), risk of bias (summary plot), and outcome results(e.g., forest plots for meta-analysis if data are poolable; use narrative synthesis if substantial heterogeneity is present) .

13 Discuss limitations and clinical implications of findings.

Protocol references

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2.Cumpston M, Li T, Page MJ, Chandler J, Welch VA, Higgins JP, Thomas J. Updated guidance for trusted systematic reviews: a new edition of the Cochrane Handbook for Systematic Reviews of Interventions. Cochrane Database Syst Rev. 2019 Oct 3;10(10):ED000142. doi: 10.1002/14651858.ED000142. PMID: 31643080; PMCID: PMC10284251.

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