TITLE: Cooling Helmets for Acute Ischemic Stroke: Clinical Effectiveness

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RESEARCH QUESTION:
What is the clinical effectiveness of cooling helmets for early management of acute ischemic stroke or traumatic brain injury in the pre-hospital setting?

METHODS:
A limited literature search was conducted on key health technology assessment resources, including PubMed, the Cochrane Library (Issue 1, 2009), University of York Centre for Reviews and Dissemination (CRD) databases, ECRI, EuroScan, international health technology agencies, and a focused Internet search. Results include articles published between 2000 and March 2009, and are limited to English language publications only. No filters were applied to limit the retrieval by study type. Internet links are provided, where available.

The summary of findings was prepared from the abstracts of the relevant information. Please note that data contained in abstracts may not always be an accurate reflection of the data contained within the full article.

RESULTS:
HTIS reports are organized so that the higher quality evidence is presented first. Therefore, health technology assessment reports, systematic reviews, and meta-analyses are presented first. These are followed by randomized controlled trials, controlled clinical trials, observational studies, and evidence-based guidelines.

One randomized controlled trial regarding the clinical effectiveness of cooling helmets for early management of acute ischemic stroke or traumatic brain injury in the pre-hospital setting was identified. No relevant health technology assessments, systematic reviews, meta-analyses, controlled clinical trials, observational studies, or evidence-based guidelines were identified from the literature search results. Additional articles of interest may be found in the appendix.
OVERALL SUMMARY OF FINDINGS:

Limited information regarding the use of cooling helmets for the early management of stroke or traumatic brain injury was retrieved by our literature search. A randomized controlled trial conducted by Wang et al. evaluated the use of cooling helmets by emergency medical service (EMS) personnel. The authors suggested that using cerebral hypothermia as early as possible in the treatment process would be beneficial to patients with severe stroke or traumatic head injury. Patients were assigned to receive the cooling helmet or no cooling (control group) and the difference between core body and brain temperatures were monitored for 48 to 72 hours. The use of the cooling helmet resulted in significantly lower brain temperatures as compared to the control group. The cooling helmet was able to maintain a lower brain temperature for a mean of 6.67 hours before systemic hypothermia. The authors concluded that the delay in onset of systemic hypothermia observed with the use of the cooling helmet may allow for the early use of this technology by EMS personnel in the field.
REFERENCES SUMMARIZED:

Health technology assessments
No literature identified

Systematic reviews and meta-analyses
No literature identified

Randomized controlled trials

Controlled clinical trials
No literature identified

Observational studies
No literature identified

Guidelines and recommendations
No literature identified

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APPENDIX – FURTHER INFORMATION:

Systematic reviews and meta-analyses


Randomized controlled trials