Active versus Passive Warming Devices for Patients with Hypothermia in Pre-Hospital Settings: Clinical and Cost-Effectiveness
Research Questions

1. What is the clinical effectiveness of active versus passive warming devices for patients with hypothermia in pre-hospital settings?

2. What is the cost-effectiveness of active versus passive warming devices for patients with hypothermia in pre-hospital settings?

Key Findings

One randomized controlled trial was identified regarding the clinical effectiveness of active versus passive warming devices for patients with hypothermia in pre-hospital settings.

Methods

A limited literature search was conducted on key resources including PubMed, The Cochrane Library, University of York Centre for Reviews and Dissemination (CRD) databases and a focused Internet search. No methodological filters were applied to limit the retrieval by study type. The search was limited to English language documents published between January 1, 2008 and January 25, 2018. Internet links were provided, where available.

Selection Criteria

One reviewer screened citations and selected studies based on the inclusion criteria presented in Table 1.

Table 1: Selection Criteria

<table>
<thead>
<tr>
<th>Population</th>
<th>Any patient in the pre-hospital setting experiencing mild hypothermia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intervention</td>
<td>Active warming devices (e.g., Bair Hugger [forced warm air])</td>
</tr>
<tr>
<td>Comparator</td>
<td>Passive warming devices (e.g., warmed blankets)</td>
</tr>
<tr>
<td>Outcomes</td>
<td>Q1: Clinical effectiveness, change in body temperature, safety</td>
</tr>
<tr>
<td></td>
<td>Q2: Cost-effectiveness</td>
</tr>
<tr>
<td>Study Designs</td>
<td>Health technology assessments, systematic reviews, meta-analyses, randomized controlled trials, non-randomized studies, economic evaluations</td>
</tr>
</tbody>
</table>
Results

Rapid Response 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, non-randomized studies, and economic evaluations.

One randomized controlled trial was identified regarding the clinical effectiveness of active versus passive warming devices for patients with hypothermia in pre-hospital settings. No relevant health technology assessments, systematic reviews, meta-analyses, non-randomized studies, or economic evaluations were identified.

Additional references of potential interest are provided in the appendix.

Overall Summary of Findings

One randomized controlled trial\(^1\) was identified regarding the clinical effectiveness of active versus passive warming devices for patients with hypothermia in pre-hospital settings. The authors of this study\(^2\) evaluated the effect of providing both active warming and passive warming to mildly hypothermic trauma patients during ambulance transportation. Patients were randomized to receive either passive warming with blankets or active warming with a chemical heat pad in addition to passive warming with blankets.\(^1\) Both treatment groups showed similar increases in mean core temperature; however, patients treated with additional active warming demonstrated significant decreases in cold discomfort, heart rate, and respiratory frequency.\(^1\) The authors concluded that although adequate passive warming is an effective treatment for mildly hypothermic trauma patients, the addition of active warming may improve cold discomfort and reduce the cold induced stress response.\(^1\)

References Summarized

Health Technology Assessments

No literature identified.

Systematic Reviews and Meta-Analyses

No literature identified.

Randomized Controlled Trials


Non-Randomized Studies

No literature identified.

Economic Evaluations

No literature identified.
Appendix — Further Information

Systematic Reviews and Meta-Analyses

Alternative Population – Patients Undergoing Surgery


Non-Randomized Studies

In Vitro Studies


Qualitative Studies


Guidelines and Recommendations


Clinical Practice Guidelines – Unspecified Methodology


Review Articles


