TITLE: Hyperbaric Oxygen Therapy for Thermal Burns: Clinical Effectiveness and Guidelines

DATE: 19 March 2015

RESEARCH QUESTIONS

1. What is the clinical effectiveness of hyperbaric oxygen therapy for the treatment of thermal burns?

2. What are the evidence-based guidelines regarding the treatment of thermal burns?

KEY FINDINGS

Two systematic reviews and one randomized controlled trial were identified regarding the clinical effectiveness of hyperbaric oxygen therapy for the treatment of thermal burns. In addition, two evidence-based guidelines regarding the treatment of thermal burns were identified.

METHODS

A limited literature search was conducted on key resources including PubMed, The Cochrane Library (2015, Issue 2), University of York Centre for Reviews and Dissemination (CRD), and ECRI databases, Canadian and major international health technology agencies, as well as a focused Internet search. For research question one, no filters were applied to limit the retrieval by study type. For research question two, a methodological filter for guidelines was applied to the search results. Where possible, retrieval was limited to the human population. The search was also limited to English language documents published between January 1, 2010 and March 16, 2015. 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>Adults with thermal burns</th>
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<tr>
<td>Intervention</td>
<td>Hyperbaric oxygen therapy</td>
</tr>
<tr>
<td>Comparator</td>
<td>Usual care (e.g., surgical skin grafting, conservative wound dressing and debridement, antibiotics, ointments)</td>
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<tr>
<td>Outcomes</td>
<td>Clinical benefits (e.g., improved wound healing); Clinical harms; Guidelines</td>
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<tr>
<td>Study Designs</td>
<td>Health technology assessment reports, systematic reviews, meta-analyses, randomized controlled trials, non-randomized studies, evidence-based guidelines</td>
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</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 evidence-based guidelines.

Two systematic reviews and one randomized controlled trial were identified regarding the clinical effectiveness of hyperbaric oxygen therapy for the treatment of thermal burns. In addition, two evidence-based guidelines regarding the treatment of thermal burns were identified. No relevant health technology assessments or non-randomized studies were identified.

Additional references of potential interest are provided in the appendix.

Health Technology Assessments
No literature identified.

Systematic Reviews and Meta-analyses


Randomized Controlled Trials

Non-Randomized Studies
No literature identified.

Guidelines and Recommendations


PREPARED BY:
Canadian Agency for Drugs and Technologies in Health
Tel: 1-866-898-8439
www.cadth.ca
APPENDIX – FURTHER INFORMATION:

Non-Randomized Studies – Alternate Outcome


Guidelines and Recommendations – Unclear Methodology


   See: Key Recommendations for Practice


Guidelines for Use of Hyperbaric Oxygen Therapy

   See: Undersea and Hyperbaric Medical Society Guidelines – Acute Thermal Burn Injury
See: Table 4. Indications for which inadequate evidence for efficacy exists, page 19

Review Articles


Additional References

See: Full Report – Thermal Burns, page 26
CADTH Report on Hyperbaric Oxygen Therapy

Review of Clinical Practice Guidelines for Burn Treatment