TITLE: Laryngeal Masks versus Endotracheal Intubation for the Management of Acute Respiratory Distress in the Pre-Hospital Setting: Comparative Clinical Effectiveness and Guidelines

DATE: 2 October 2014

RESEARCH QUESTIONS

1. What is the comparative clinical effectiveness and safety of laryngeal masks versus endotracheal intubation in the pre-hospital setting for adults in acute respiratory distress?

2. What are the evidence-based guidelines regarding the use of laryngeal masks in the pre-hospital setting for adults in acute respiratory distress?

KEY FINDINGS

Two non-randomized studies were identified regarding the use of laryngeal mask versus endotracheal intubation for the management of acute respiratory distress in the pre-hospital setting. No evidence-based guidelines were identified.

METHODS

A limited literature search was conducted on key resources including PubMed, The Cochrane Library (2010, Issue 9), University of York Centre for Reviews and Dissemination (CRD) databases, Canadian and major international health technology agencies, as well as a focused Internet search. No filters were used to limit retrieval by publication type for question 1. A methodological filter was applied to limit retrieval to guidelines for question 2. Where possible, retrieval was limited to the human population. The search was also limited to English language documents published between January 1, 2009 and September 19, 2014. Internet links were 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.

SELECTION CRITERIA

Disclaimer: The Rapid Response Service is an information service for those involved in planning and providing health care in Canada. Rapid responses are based on a limited literature search and are not comprehensive, systematic reviews. The intent is to provide a list of sources of the best evidence on the topic that CADTH could identify using all reasonable efforts within the time allowed. Rapid responses should be considered along with other types of information and health care considerations. The information included in this response is not intended to replace professional medical advice, nor should it be construed as a recommendation for or against the use of a particular health technology. Readers are also cautioned that a lack of good quality evidence does not necessarily mean a lack of effectiveness particularly in the case of new and emerging health technologies, for which little information can be found, but which may in future prove to be effective. While CADTH has taken care in the preparation of the report to ensure that its contents are accurate, complete and up to date, CADTH does not make any guarantee to that effect. CADTH is not liable for any loss or damages resulting from use of the information in the report.

Copyright: This report contains CADTH copyright material and may contain material in which a third party owns copyright. This report may be used for the purposes of research or private study only. It may not be copied, posted on a web site, redistributed by email or stored on an electronic system without the prior written permission of CADTH or applicable copyright owner.

Links: This report may contain links to other information available on the websites of third parties on the Internet. CADTH does not have control over the content of such sites. Use of third party sites is governed by the owners’ own terms and conditions.
One reviewer screened citations and selected studies based on the inclusion criteria presented in Table 1.

<table>
<thead>
<tr>
<th>Table 1: Selection Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Population</strong></td>
</tr>
<tr>
<td><strong>Intervention</strong></td>
</tr>
<tr>
<td><strong>Comparator</strong></td>
</tr>
<tr>
<td><strong>Outcomes</strong></td>
</tr>
<tr>
<td><strong>Study Designs</strong></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 evidence-based guidelines.

Two non-randomized studies were identified regarding the use of laryngeal mask versus endotracheal intubation for the management of acute respiratory distress in the pre-hospital setting.

Additional references of potential interest are provided in the appendix.

**OVERALL SUMMARY OF FINDINGS**

Two non-randomized studies\(^1\,^2\) examined laryngeal mask use in patients who experienced out of hospital cardiac arrest. One study\(^1\) assessed neurological outcome in patients who received either endotracheal intubation or supraglottic airway devices, including laryngeal masks. Overall, neurological outcomes were poor for this patient population; however, results were significantly lower for patients with laryngeal masks.\(^1\)

The second study\(^2\) compared patient survival rates between intervention and hospital admission to patient survival rates from intervention to hospital discharge for endotracheal intubation, laryngeal mask use, and bag-valve-mask airway intervention. Survival to discharge was lower for laryngeal mask use than for bag-mask-valve use and outcomes were similar for bag-valve-mask compared to endotracheal intubation.\(^2\)
REFERENCES SUMMARIZED

Health Technology Assessments
No literature identified.

Systematic Reviews and Meta-analyses
No literature identified.

Randomized Controlled Trials
No literature identified.

Non-Randomized Studies


Guidelines and Recommendations
No literature identified.

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

Systematic Reviews

Other Comparator


Non-Randomized Studies

No Comparator or Other Comparator


Review Articles


Clinical Practice Guidelines