TITLE: Warm CO₂ Insufflation in Gastrointestinal Endoscopy: Clinical and Cost-Effectiveness, Safety, and Guidelines

DATE: 25 January 2016

RESEARCH QUESTIONS

1. What is the clinical effectiveness and safety of warm CO₂ insufflation in gastrointestinal endoscopy for patients with chronic obstructive pulmonary disease?

2. What is the clinical effectiveness and safety of warm CO₂ insufflation in gastrointestinal endoscopy for patients with co-morbidities?

3. What is the cost-effectiveness of warm CO₂ insufflation in gastrointestinal endoscopy?

4. What are the evidence-based guidelines associated with warm CO₂ insufflation in gastrointestinal endoscopy?

KEY FINDINGS

One randomized controlled trial, one non-randomized study, and two evidence-based guidelines were identified regarding CO₂ insufflation in gastrointestinal endoscopy.

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, Canadian and major international health technology agencies, as well as a focused Internet search. No filters were applied to limit the retrieval by study type. Where possible, retrieval was limited to the human population. The search was also limited to English language documents published between January 1, 2006 and January 19, 2016. 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>
<thead>
<tr>
<th>Table 1: Selection Criteria</th>
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</thead>
<tbody>
<tr>
<td><strong>Population</strong></td>
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<tr>
<td>Q1: Patients with COPD who are undergoing GI endoscopy</td>
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<tr>
<td>Q2: Patient with other co-morbidities who are undergoing GI endoscopy</td>
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<td><strong>Intervention</strong></td>
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<td>Warm CO\textsubscript{2} insufflation endoscopy</td>
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<td><strong>Comparator</strong></td>
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<tr>
<td>Q1, 2, 3: Room air for insufflation in endoscopy; No comparator</td>
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<td>Q4: No comparator</td>
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<td><strong>Outcomes</strong></td>
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<tr>
<td>Clinical effectiveness; Patient safety (harms and benefits); Cost-Effectiveness; Guidelines</td>
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<tr>
<td><strong>Study Designs</strong></td>
</tr>
<tr>
<td>Health technology assessments, systematic reviews, meta-analyses, randomized controlled trials, non-randomized studies, economic evaluations, evidence-based guidelines</td>
</tr>
</tbody>
</table>

\text{CO}_2 = \text{carbon dioxide}; \text{COPD} = \text{chronic obstructive pulmonary disease}; \text{GI} = \text{gastrointestinal}.

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, economic evaluations, and evidence-based guidelines.

One randomized controlled trial, one non-randomized study, and two evidence-based guidelines were identified regarding \text{CO}_2 insufflation in gastrointestinal endoscopy. No relevant health technology assessments, systematic reviews, meta-analyses, or economic evaluations were identified.

Additional references of potential interest are provided in the appendix.

**Health Technology Assessments**
No literature identified.

**Systematic Reviews and Meta-analyses**
No literature identified.

**Randomized Controlled Trials**

   PubMed: PM22694488
Non-Randomized Studies


Economic Evaluations
No literature identified.

Guidelines and Recommendations


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APPENDIX – FURTHER INFORMATION:

Systematic Reviews and Meta-Analyses – Population Not Specified


Alternate Procedure and/or Comparator


**Randomized Controlled Trials – Population Not Specified**

**Alternate Procedure and/or Comparator**


**Warmed CO₂ Not Specified**


Non-Randomized Studies – Population Not Specified

Alternate Procedure


Warmed CO2 Not Specified


Review Articles
