Carboprost for the Treatment of Postpartum Hemorrhage: Clinical Effectiveness, Cost-Effectiveness, and Guidelines
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(CADTH rapid response report: summary of abstracts).

Acknowledgments:

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Research Questions

1. What is the clinical effectiveness of carboprost in the treatment of postpartum hemorrhage?

2. What is the cost-effectiveness of carboprost for the treatment of postpartum hemorrhage?

3. What are the evidence-based guidelines associated with the use of carboprost for the treatment of postpartum hemorrhage?

Key Findings

One systematic review and two evidence-based guidelines were identified regarding the clinical effectiveness of carboprost for the treatment of postpartum hemorrhage. No economic evaluations were identified.

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, 2013 and October 9, 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>Postpartum patients of any age experiencing primary (first 24 hours post-delivery) or secondary (24 hours to 12 weeks post-delivery) hemorrhage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intervention</td>
<td>Carboprost (e.g., Hemabate)</td>
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<tr>
<td>Comparators</td>
<td>Q1-2: Usual care; Other interventions for postpartum hemorrhage (e.g., other medication, manual massage of the uterus, compression)</td>
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<td></td>
<td>Q3: No comparator</td>
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<tr>
<td>Outcomes</td>
<td>Q1: Acute clinical effectiveness and safety</td>
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<td></td>
<td>Q2: Cost-effectiveness</td>
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<td></td>
<td>Q3: Guidelines</td>
</tr>
<tr>
<td>Study Designs</td>
<td>Health technology assessments, systematic reviews, meta-analyses, randomized controlled trials, evidence-based guidelines</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 and evidence-based guidelines.

One systematic review, one randomized controlled trial, and two evidence-based guidelines were identified regarding the clinical effectiveness of carboprost for the treatment of postpartum hemorrhage. No relevant health technology assessments, meta-analyses, or randomized controlled trials studies were identified.

Additional references of potential interest are provided in the appendix.

Overall Summary of Findings

One systematic review and two evidence-based guidelines were identified regarding the clinical effectiveness of carboprost for the treatment of postpartum hemorrhage.

The systematic review by Agency for Healthcare Research and Quality (AHRQ) reported that there was insufficient strength of evidence regarding the use of carboprost tromethamine for bleeding control associated with postpartum hemorrhage. There was insufficient strength of evidence regarding harms associated with carboprost tromethamine intervention.

The guideline by the Royal Australian and New Zealand College of Obstetricians and Gynaecologists (RANZCOG) states that prostaglandin analogues including carboprost are the most potent uterotonics but have the most serious side effect profile which includes bronchospasm and hypertension. Recommendations associated with the administration of carboprost include one of two protocols: intra-muscular injection of 0.25mg in repeated doses as required at intervals of greater than or equal to 15 minutes with a maximum total cumulative dose of 2.0mg or intramyometrial injection of 0.5mg, which is not recommended by the manufacturer.

The guideline by the National Institute for Health and Care Excellence (NICE) recommends repeated bolus doses of carboprost as one of the second-line agents for postpartum hemorrhage, along with oxytocin, ergometrine, and misoprostol. Further randomised controlled trials comparing carboprost with different agents are encouraged.

References Summarized

Health Technology Assessments

No literature identified
Systematic Reviews and Meta-analyses


Randomized Controlled Trials

No literature identified

Guidelines and Recommendations


   See: Section 1.14.33, pages 69-70
   Section 5 Postpartum Haemorrhage, page 86
Appendix — Further Information

Randomized Controlled Trials – Prophylactic Study


Clinical Practice Guidelines – Unspecified Methodology


Review Articles