CADTH RAPID RESPONSE REPORT: SUMMARY OF ABSTRACTS

Vaginal Cleansing Immediately Before Cesarean Delivery: Clinical Effectiveness, Cost-Effectiveness, and Guidelines
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About CADTH: CADTH is an independent, not-for-profit organization responsible for providing Canada’s health care decision-makers with objective evidence to help make informed decisions about the optimal use of drugs, medical devices, diagnostics, and procedures in our health care system.

Funding: CADTH receives funding from Canada’s federal, provincial, and territorial governments, with the exception of Quebec.
Research Questions

1. What is the clinical effectiveness of vaginal cleansing immediately before cesarean delivery?

2. What is the cost-effectiveness of vaginal cleansing immediately before cesarean delivery?

3. What are the evidence-based guidelines regarding vaginal cleansing immediately before cesarean delivery?

Key Findings

Three systematic reviews with meta-analyses, four randomized controlled trials, three non-randomized trials, and one evidence-based guideline were identified regarding vaginal cleansing immediately before cesarean delivery.

Methods

A limited literature search was conducted on key resources including Medline, 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 methodological filters were applied to limit. Where possible, retrieval was limited to the human population. The search was also limited to English language documents published between January 1, 2014 and February 14, 2019. 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>Pregnant persons undergoing cesarean section</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intervention</td>
<td>Vaginal cleansing immediately before cesarean delivery (e.g., povidone-iodine scrub, other antiseptic solutions)</td>
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<tr>
<td>Comparator</td>
<td>Q1-2: Standard of care (e.g., prophylactic antibiotics) or placebo</td>
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<td></td>
<td>Q3: No comparator</td>
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<tr>
<td>Outcomes</td>
<td>Q1: Occurrence of post-partum endometriosis, post-operative wound infection, or other complications, adverse events related to vaginal preparation</td>
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<td></td>
<td>Q2: Cost-effectiveness</td>
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<td></td>
<td>Q3: Guidelines</td>
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<tr>
<td>Study Designs</td>
<td>Health technology assessments, systematic reviews, meta-analyses, randomized controlled trials, non-randomized trials, economic evaluations, evidence-based guidelines</td>
</tr>
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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, economic evaluations, and evidence-based guidelines.

Three systematic reviews with meta-analyses, four randomized controlled trials, three non-randomized trials, and one evidence-based guideline were identified regarding vaginal cleansing immediately before cesarean delivery.

Additional references of potential interest are provided in the appendix.

Overall Summary of Findings

Three systematic reviews with meta-analyses, four randomized controlled trials, and three non-randomized trials were identified regarding vaginal cleansing immediately before cesarean delivery. A wide range of health outcomes were reported and the conclusions were inconsistent. Detailed study characteristics are provided in Table 2.

The 2015 WHO guideline recommends vaginal cleansing with povidone-iodine immediately before caesarean section.

Table 2: Characteristics of Included Literature

<table>
<thead>
<tr>
<th>First Author, Publication Year, Country</th>
<th>Study Designs, Number of Studies Included and Population Characteristics</th>
<th>Intervention and Comparator(s)</th>
<th>Outcomes</th>
<th>Authors’ Conclusions</th>
</tr>
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<tbody>
<tr>
<td><strong>Systematic Reviews and Meta-analyses</strong></td>
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<tr>
<td>Haas, 2018¹ US</td>
<td>11 studies included: 8 studies on povidone-iodine 2 studies on</td>
<td>Vaginal cleansing immediately before cesarean delivery</td>
<td>Endometritis  Postoperative fever  Postoperative</td>
<td>&quot;Vaginal preparation with povidone-iodine or chlorhexidine solution compared to saline or not cleansing immediately before cesarean delivery&quot;</td>
</tr>
<tr>
<td>First Author, Publication Year, Country</td>
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<tr>
<td>Martin, 2018&lt;sup&gt;2&lt;/sup&gt; Australia</td>
<td>44 studies included MA performed N = NR Age: NR</td>
<td>Vaginal cleansing with iodine-povidone solution Comparators NR</td>
<td>wound infection Adverse effects</td>
<td>probably reduces the risk of postcesarean endometritis. Subgroup analysis could not rule out larger reductions in endometritis with antiseptics in women who were in labor or in women whose membranes had ruptured when antiseptics were used. The quality of the evidence using GRADE was moderate for all reported outcomes. We downgraded the outcome of post-cesarean endometritis and composite of wound complications or endometritis for risk of bias and postoperative fever and postoperative wound infections for wide CIs. As a simple, generally inexpensive intervention, providers may consider implementing preoperative vaginal cleansing with povidone-iodine or chlorhexidine before performing cesarean deliveries.&lt;sup&gt;1&lt;/sup&gt;</td>
</tr>
<tr>
<td>Caissutti, 2017&lt;sup&gt;3&lt;/sup&gt; US</td>
<td>16 studies included MA performed N = 4,837 Age: NR</td>
<td>Vaginal cleansing (including 10% povidone-iodine solution) Comparators: Placebo No intervention</td>
<td>Endometritis Postoperative fever</td>
<td>“Vaginal cleansing immediately before cesarean delivery in women in labor and in women with ruptured membranes reduces the risk of postoperative endometritis. Because it is generally inexpensive and a simple intervention, we recommend preoperative vaginal preparation before cesarean delivery in these women with sponge stick preparation of povidone-iodine 10% for at least 30 seconds. More data are needed to assess whether this intervention may be also useful for cesarean deliveries performed in women not in labor and for those without ruptured membranes.”&lt;sup&gt;3&lt;/sup&gt;</td>
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</tbody>
</table>
| Aref, 2019<sup>4</sup>                 | n = 226 Vaginal cleansing | Post CS infectious | “Vaginal cleansing with povidone-
<table>
<thead>
<tr>
<th>First Author, Publication Year, Country</th>
<th>Study Designs, Number of Studies Included and Population Characteristics</th>
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<th>Outcomes</th>
<th>Authors’ Conclusions</th>
</tr>
</thead>
</table>
| **Saudi Arabia**                       | Age: NR                                                                  | using 10% povidone-iodine solution vs. no treatment | morbidities:  
- Endometritis  
- Febrile morbidity  
- Wound infection | iodine solution 10% prior to elective CS appears to be effective in reducing rates of post-CS infectious morbidity mainly endometritis.4 |
| **Ahmed, 2017**                        | n = 218  
Age: NR                                                                  | Vaginal cleansing using chlorhexidine 0.25% antiseptic wipes for about 1 min vs. no treatment | Post CS infectious morbidities:  
- Endometritis  
- Fever  
- Wound infection | “Vaginal cleansing with povidone-iodine solution 10% prior to elective CS appears to be effective in reducing rates of post-CS infectious morbidity mainly endometritis.”5 |
| **Goymen, 2017**                       | n = 120  
n = 41 povidone iodine  
n = 39 benzalkonium chloride  
n = 40 control  
Age: NR                                                                  | Vaginal cleansing using povidone iodine vs. benzalkonium chloride vs. control |  
- Duration of operation  
- Hospital stay  
- Postoperative pain  
- Haematological parameters including c-reactive protein | “The preoperative vaginal cleansing with povidone iodine could reduce the postoperative pain, analgesic need and infection parameter.”6 |
| **Nandi, 2015**                        | n = NR  
Age: NR                                                                  | Vaginal antiseptic preparation with povidone iodine vs. no treatment |  
- Endometritis  
- Abdominal wound infection  
- Readmission for late infection | “[V]aginal antiseptic preparation is not significantly effective in reducing post cesarean infectious morbidities in present day obstetrics.”7 |
| **Felder, 2018**                       | n = NR  
Age: NR                                                                  | Vaginal cleansing protocol vs. no vaginal cleansing protocol |  
- Endometritis  
- Postoperative fever  
- Wound infection | “Vaginal cleansing with povidone-iodine solution 10% prior to elective CS appears to be effective in reducing rates of post-CS infectious morbidity mainly endometritis.”8 |
| **Mohammed, 2015**                     | n = 226  
Age: NR                                                                  | Vaginal cleaning before cesarean section by antiseptic Cetrimide and standard abdominal scrub vs. standard abdominal scrub only |  
- Endometritis  
- Fever  
- Wound infection | “Using antiseptic Cetrimide (Setavlon) for cleaning the vagina before cesarean section decreased the occurrence of postpartum morbidity as fever and endometritis.”9 |
| **Yavuz, 2014**                        | n = 250  
Age: NR                                                                  | Vaginal cleansing using povidone-iodine solution vs. no cleansing |  
- Endometritis  
- Fever  
- Wound infection | “Vaginal cleansing with povidone iodine before cesarean delivery may decrease post-operative fever and wound infection morbidities, although this is not statistically significant.”10 |

CI = confidence interval; CS = cesarean section; GRADE = Grading of Recommendations, Assessment, Development and Evaluations; MA = meta-analysis; NR = not reported; UK = United Kingdom; US = United States; vs. = versus.
References Summarized

Health Technology Assessments
No literature identified

Systematic Reviews and Meta-analyses


Randomized Controlled Trials


Non-Randomized Studies


Economic Evaluations

No literature identified

Guidelines and Recommendations

Appendix — Further Information

Previous CADTH Reports


Secondary Analyses of Randomized Controlled Trials


Non-Randomized Studies - Alternative Intervention