

CADTH RAPID RESPONSE REPORT: SUMMARY OF ABSTRACTS

Vaginal Cleansing Immediately Before Cesarean Delivery: Clinical Effectiveness, Cost- Effectiveness, and Guidelines

Service Line: Rapid Response Service
Version: 1.0
Publication Date: March 01, 2019
Report Length: 9 Pages

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Cite As: *Vaginal Cleansing Immediately Before Cesarean Delivery: Clinical Effectiveness, Cost-Effectiveness, and Guidelines*. Ottawa: CADTH; 2019 Mar. (CADTH rapid response report: summary of abstracts).

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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

Population	Pregnant persons undergoing cesarean section
Intervention	Vaginal cleansing immediately before cesarean delivery (e.g., povidone-iodine scrub, other antiseptic solutions)
Comparator	Q1-2: Standard of care (e.g., prophylactic antibiotics) or placebo Q3: No comparator
Outcomes	Q1: Occurrence of post-partum endometriosis, post-operative wound infection, or other complications, adverse events related to vaginal preparation Q2: Cost-effectiveness Q3: Guidelines
Study Designs	Health technology assessments, systematic reviews, meta-analyses, randomized controlled trials, non-randomized trials, economic evaluations, evidence-based guidelines

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,¹⁻³ four randomized controlled trials,⁴⁻⁷ and three non-randomized trials⁸⁻¹⁰ were identified regarding vaginal cleansing immediately before cesarean delivery. A wide range of health outcomes were reported and the conclusions were inconsistent.¹⁻¹⁰ Detailed study characteristics are provided in Table 2.

The 2015 WHO guideline recommends vaginal cleansing with povidone-iodine immediately before caesarean section.¹¹

Table 2: Characteristics of Included Literature

First Author, Publication Year, Country	Study Designs, Number of Studies Included and Population Characteristics	Intervention and Comparator(s)	Outcomes	Authors' Conclusions
Systematic Reviews and Meta-analyses				
Haas, 2018¹ US	11 studies included: <ul style="list-style-type: none"> 8 studies on povidone-iodine 2 studies on 	Vaginal cleansing immediately before cesarean delivery	<ul style="list-style-type: none"> Endometritis Postoperative fever Postoperative 	“Vaginal preparation with povidone-iodine or chlorhexidine solution compared to saline or not cleansing immediately before cesarean delivery

First Author, Publication Year, Country	Study Designs, Number of Studies Included and Population Characteristics	Intervention and Comparator(s)	Outcomes	Authors' Conclusions
	<p>chlorhexidine</p> <ul style="list-style-type: none"> 1 study on benzalkonium chloride <p>MA performed</p> <p>N = 3,403</p> <p>Age: NR</p>	<p>Comparators:</p> <ul style="list-style-type: none"> placebo solution standard of care 	<ul style="list-style-type: none"> wound infection Adverse effects 	<p>probably reduces the risk of post-cesarean 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.”¹</p>
<p>Martin, 2018²</p> <p>Australia</p>	<p>44 studies included</p> <p>MA performed</p> <p>N = NR</p> <p>Age: NR</p>	<p>Vaginal cleansing with iodine-povidone solution</p> <p>Comparators NR</p>	<ul style="list-style-type: none"> Clinical effectiveness 	<p>“We recommend clinicians implement pre-incision antibiotic prophylaxis, vaginal preparation and spontaneous placenta removal as an infection control bundle for caesarean section.”²</p>
<p>Caissutti, 2017³</p> <p>US</p>	<p>16 studies included</p> <p>MA performed</p> <p>N = 4,837</p> <p>Age: NR</p>	<p>Vaginal cleansing (including 10% povidone-iodine solution)</p> <p>Comparators:</p> <ul style="list-style-type: none"> Placebo No intervention 	<ul style="list-style-type: none"> Endometritis Postoperative fever 	<p>“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.”³</p>
Randomized Controlled Trials				
<p>Aref, 2019⁴</p>	<p>n = 226</p>	<p>Vaginal cleansing</p>	<p>Post CS infectious</p>	<p>“Vaginal cleansing with povidone-</p>

First Author, Publication Year, Country	Study Designs, Number of Studies Included and Population Characteristics	Intervention and Comparator(s)	Outcomes	Authors' Conclusions
Saudi Arabia	Age: NR	using 10% povidone-iodine solution vs. no treatment	morbidities: <ul style="list-style-type: none"> 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, 2017⁵ Egypt	n = 218 Age: NR	Vaginal cleansing using chlorhexidine 0.25% antiseptic wipes for about 1 min vs. no treatment	Post CS infectious morbidities: <ul style="list-style-type: none"> 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, 2017⁶ Turkey	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	<ul style="list-style-type: none"> 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, 2015⁷ India	n = NR Age: NR	Vaginal antiseptic preparation with povidone iodine vs. no treatment	<ul style="list-style-type: none"> 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
Non-Randomized Studies				
Felder, 2018⁸ US	n = NR Age: NR	Vaginal cleansing protocol vs. no vaginal cleansing protocol	<ul style="list-style-type: none"> 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, 2015⁹ Egypt	n = 226 Age: NR	Vaginal cleaning before cesarean section by antiseptic Cetrimide and standard abdominal scrub vs. standard abdominal scrub only	<ul style="list-style-type: none"> 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, 2014¹⁰ Turkey	n = 250 Age: NR	Vaginal cleansing using povidone-iodine solution vs. no cleansing	<ul style="list-style-type: none"> 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

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Non-Randomized Studies

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Accessed 2019 Feb 28.

Economic Evaluations

No literature identified

Guidelines and Recommendations

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<https://extranet.who.int/rhl/topics/preconception-pregnancy-childbirth-and-postpartum-care/who-recommendation-vaginal-cleansing-povidone-iodine-immediately-caesarean-section>. Accessed 2019 Feb 28.

Appendix — Further Information

Previous CADTH Reports

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