Alcohol for Skin Preparation During Minor Procedures: Clinical Effectiveness
SUMMARY OF ABSTRACTS

Alcohol for Skin Preparation During Minor Procedures

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Research Question
What is the clinical effectiveness of alcohol wipes for adults undergoing skin preparation for minor procedures?

Key Findings
One systematic review, two randomized controlled trials, and two non-randomized studies were identified regarding the clinical effectiveness of alcohol for skin preparation during minor procedures.

Methods
A limited literature search was conducted by an information specialist on key resources including PubMed, Cumulative Index to Nursing and Allied Health Literature (CINAHL), the Cochrane Library, the University of York Centre for Reviews and Dissemination (CRD) databases, the websites of Canadian and major international health technology agencies, as well as a focused Internet search. The search strategy was comprised of both controlled vocabulary, such as the National Library of Medicine’s MeSH (Medical Subject Headings), and keywords. The main search concepts were alcohol, antisepsis and minor procedures. No filters were applied to limit the retrieval by study type. The search was also limited to English language documents published between January 1, 2009 and May 23, 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.

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<th>Table 1: Selection Criteria</th>
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<td><strong>Population</strong></td>
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<td><strong>Outcomes</strong></td>
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<td><strong>Study Designs</strong></td>
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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 non-randomized studies.

One systematic review, two randomized controlled trials, and two non-randomized studies were identified regarding the clinical effectiveness of alcohol for skin preparation during minor procedures. No relevant health technology assessments or meta-analyses were identified.

Additional references of potential interest are provided in the appendix.

Overall Summary of Findings

One systematic review,\(^1\) two randomized controlled trials,\(^2\,3\) and two non-randomized studies\(^4\,5\) were identified regarding the clinical effectiveness of alcohol for skin preparation during minor procedures.

The authors of the systematic review aimed to assess the clinical effectiveness of isopropyl alcohol wipes with isopropyl alcohol in a two-step procedure to prevent contamination of blood collection; however, relevant studies were identified.\(^1\)

The authors of one randomized controlled trial aimed to assess the clinical effectiveness of isopropyl alcohol with chlorhexidine gluconate (CHG) compared to isopropyl alcohol and CHG alone. The authors found a significant difference in catheter related infections between the three antiseptic solutions, with the CHG-isopropyl alcohol formulation being the most effective in preventing infection.\(^2\) The authors of a second randomized controlled trial\(^3\) aimed to compare 75% isopropyl alcohol to 5% sodium bicarbonate and found that disinfecting central venous catheters with sodium bicarbonate improved pain, and that patient and nurse satisfaction were greater with sodium bicarbonate than when using isopropyl alcohol.\(^3\)

The authors of a non-randomized study that assessed the effectiveness of isopropyl alcohol in preventing catheter associated infection found that disinfecting catheter caps with isopropyl alcohol reduced contamination, organism density, and central-line associated bloodstream infection.\(^4\) The authors of another study\(^5\) compared isopropyl alcohol with isopropyl alcohol with povidone-iodine and found no significant difference in contamination rates between the two groups.

References Summarized

Health Technology Assessments

No literature identified.
Systematic Reviews and Meta-analyses


Randomized Controlled Trials


Non-Randomized Studies


Appendix — Further Information

Previous CADTH Reports


Systematic Reviews and Meta-Analyses - Aqueous versus Alcohol-Based Antiseptics


Non-Randomized Studies – Pediatric Population


Review Articles – Aqueous versus Alcohol-Based Antiseptics
