CADTH RAPID RESPONSE REPORT: SUMMARY OF ABSTRACTS

Oral Antibiotics versus IV Antibiotics for Patients with Cellulitis or Soft Tissue Infections: Clinical Effectiveness and Guidelines
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Questions or requests for information about this report can be directed to requests@cadth.ca
Research Questions

1. What is the comparative clinical effectiveness of oral antibiotics versus IV antibiotics for patients with cellulitis and/or other soft tissue infections?

2. What are the evidence-based guidelines regarding treatment of patients with cellulitis and/or other soft tissue infections with oral antibiotics or IV antibiotics?

Key Findings

One systematic review and one randomized controlled trial were identified regarding the clinical effectiveness of oral versus IV antibiotics for patients with cellulitis or other soft tissue infections. In addition, one evidence-based guideline was identified regarding treatment of patients with cellulitis or other soft tissue infections with oral or IV antibiotics.

Methods

A limited literature search was conducted by an information specialist on key resources including PubMed, 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 oral and IV antibiotics and cellulitis. For question #1 no search filters were applied to limit the retrieval by study type. For question #2, search filters were applied to limit retrieval to guidelines only. Where possible, retrieval was limited to the human population. The search was also limited to English language documents published between January 1, 2014 and November 26, 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>Q1-2: Patients of any age with cellulitis and/or other soft tissue infections in either the outpatient or hospital setting</th>
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<tr>
<td>Intervention</td>
<td>Q1-2: Oral antibiotics for cellulitis or soft tissue infection (e.g., oral cephalexin, clindamycin, probenecid, doxycycline, primethoprime-sulphmethoxyzole)</td>
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<tr>
<td>Comparator</td>
<td>Q1-2: Intravenous antibiotics with or without oral antibiotics for cellulitis or soft tissue infection (e.g., cefazolin, cefazolin plus oral probenecid, ceftriaxone, clindamycin, penicillin)</td>
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| Outcomes | Q1: Clinical effectiveness: recovery; clinical cure; infection, Safety: adverse events (e.g., risk of C. difficile infection, diarrhea, headaches)  
Q2: Evidence-based guidelines |
| Study Designs | Health technology assessments, systematic reviews, meta-analyses, randomized controlled trials, non-randomized studies, 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, and evidence-based guidelines.

One systematic review and one randomized controlled trial were identified regarding the clinical effectiveness of oral antibiotics versus IV antibiotics for patients with cellulitis or other soft tissue infections. In addition, one evidence-based guideline was identified regarding treatment of patients with cellulitis or other soft tissue infections with oral or IV antibiotics. No relevant health technology assessments or non-randomized studies were identified.

Additional references of potential interest are provided in the appendix.

Overall Summary of Findings

One systematic review and one randomized controlled trial were identified regarding the clinical effectiveness of oral antibiotics versus intravenous (IV) antibiotics for patients with cellulitis and/or other soft tissue infections. The authors of the systematic review found no evidence to support the use of IV antibiotics over oral antibiotics, however further higher quality evidence is needed. The authors of the randomized controlled trial aimed to determine if oral cephalexin taken four times daily at 500mg was non-inferior to 2 grams of IV cefazolin plus probenecid. The authors found no significant difference in treatment failure at 72 hours or clinical cure at 7 days, and concluded that oral cephalexin was a safe and effective alternative to outpatient IV cefazolin in the treatment of mild skin and soft tissue infections.

Guidelines from the National Institute of Health Care Excellence (NICE) recommend oral antibiotics be used as a first line therapy if the patient can take oral medicines, and if the severity of their condition does not require intravenous antibiotics. In the case that intravenous antibiotics are given, NICE recommends reviewing treatment after 48 hours and considering a switch to oral antibiotics if possible. When MRSA infection is suspected or confirmed, NICE recommends using either vancomycin (IV), teicoplanin (IV) or linezolid (oral or IV) in combination with other IV or oral antibiotics.

References Summarized

Health Technology Assessments

No literature identified.

Systematic Reviews and Meta-analyses

Randomized Controlled Trials


Non-Randomized Studies

No literature identified.

Guidelines and Recommendations


See: Recommendations 1.1.5 & 1.1.6 – Managing cellulitis and erysipelas, page 6 and Choice of Antibiotic, page 8
Appendix — Further Information

Systematic Reviews – Protocol Paper


Randomized Controlled Trial – Alternative Intervention

*IV Administration Not Specifically Mentioned*


Non-Randomized Studies

*No Comparator*


Alternative Intervention


Alternative Outcome


Clinical Practice Guidelines – Methods Not Specified

   See: Antibiotic Selection, page 48 to 49


   See: Treatment

Review Articles


Additional References