TITLE: Daptomycin for Pediatrics: Clinical Effectiveness and Guidelines

DATE: 30 November 2015

RESEARCH QUESTIONS

1. What is the clinical effectiveness of daptomycin for pediatric patients?

2. What are the evidence-based guidelines regarding the optimal dose of daptomycin for pediatric patients?

KEY FINDINGS

One non-randomized study was identified regarding the clinical effectiveness of daptomycin for pediatric patients and one evidence-based guideline was identified regarding the dosage of daptomycin for pediatric patients.

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, 2010 and November 26, 2015. 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>Pediatric patients in acute care with bacteremia or infection, including:</th>
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<td></td>
<td>- Skin and soft tissue infection (SSTI)</td>
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<td></td>
<td>- Prosthetic joint infection</td>
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<td></td>
<td>- Osteomyelitis</td>
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<td>- Septic joint infection</td>
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<td>- Intraabdominal infection</td>
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| Intervention | Daptomycin (Cubicin)                                                      |

| Comparator   | Q1: Any alternative antibiotic therapy (e.g., cloxacillin, vancomycin, linezolid); |
|             | No comparator                                                            |
|             | Q2: No comparator                                                        |

| Outcomes     | Q1: Clinical effectiveness (e.g., patient compliance, survival [all cause and infection-related mortality], length of hospital or ICU stay, rate of infection, quality of life, duration of treatment, rate of relapse); |
|             | Harms (e.g., rate of complications [e.g., renal impairment, nausea and vomiting, toxicity, neuropathy, eosinophilic pneumonia, renal impairment, rhabdomyolysis], adverse drug interactions) |
|             | Q2: Evidence-based guidelines regarding the optimal dose of daptomycin |

| Study Designs | Health technology assessments, systematic reviews, meta-analyses, randomized controlled trials, non-randomized studies, 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 non-randomized study was identified regarding the clinical effectiveness (limited to adverse effects) of daptomycin for pediatric patients. One evidence-based guideline was identified regarding the dosage of daptomycin for pediatric patients. No health technology assessments, systematic reviews, meta-analyses, or randomized controlled trials were identified regarding the clinical effectiveness of daptomycin for pediatric patients.

Additional references of potential interest are provided in the appendix.
Health Technology Assessments
No literature identified.

Systematic Reviews and Meta-analyses
No literature identified.

Randomized Controlled Trials
No literature identified.

Non-Randomized Studies

Guidelines and Recommendations

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APPENDIX – FURTHER INFORMATION:

Non-Randomized Studies – Pharmacokinetics


Review Articles


Additional References
