CADTH RAPID RESPONSE REPORT: SUMMARY OF ABSTRACTS

Fosfomycin for Lower Urinary Tract Infections: Comparative Clinical and Cost-Effectiveness
SUMMARY OF ABSTRACTS  

Fosfomycin for Lower Urinary Tract Infections

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Acknowledgments:

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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.
Research Questions

1. What is the comparative clinical effectiveness of fosfomycin compared with other antibiotics for the treatment of lower urinary tract infections?

2. What is the comparative cost effectiveness of fosfomycin compared with other antibiotics for the treatment of lower urinary tract infections?

Key Findings

Two non-randomized studies and one economic evaluation were identified regarding the use of Fosfomycin for the treatment of lower urinary tract infections.

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, 2013 and March 29, 2018. 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 | Patients with lower urinary tract infections (UTIs) (acute uncomplicated cystitis) |
| Interventions | Fosfomycin (also termed phosphomycin, phosphonymycin, Monurol and Monuril) |
| Comparator | Other antibiotics used for lower UTIs (e.g., nitrofurantoin, trimethoprim/sulfamethoxazole, fluoroquinolones [ciprofloxacin, norfloxacin], beta-lactams [amoxicillin-clavulanate]) |
| Outcomes | Q1: Clinical effectiveness (e.g., change in infection status, safety, adverse events)  
Q2: Cost-effectiveness |
| Study Designs | Health technology assessments, systematic reviews, meta-analyses, randomized controlled trials, non-randomized studies, economic evaluations |
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 economic evaluations.

Two non-randomized studies and one economic evaluation were identified on the use of Fosfomycin for the treatment of lower urinary tract infections. No relevant health technology assessments, systematic reviews, meta-analyses, or randomized controlled trials were identified.

Overall references of potential interest are provided in the appendix.

Overall Summary of Findings

Two non-randomized studies\textsuperscript{1,2} were identified regarding the clinical effectiveness of Fosfomycin for the treatment of lower urinary tract infections (UTI). One study\textsuperscript{1} compared Fosfomycin with etrapenem in 178 patients who had extended-spectrum beta-lactamase UTIs. The study authors concluded that Fosfomycin was non-inferior to etrapenem for treating these patients and should be considered as step-down therapy to treat these infections. The second study\textsuperscript{2} examined Fosfomycin plus amikacin with ceftazidime on 129 children with vesicoureteral reflux and recurring relapsing UTIs. The study authors concluded that both Fosfomycin plus amikacin or ceftazidime were effective medications and preventive strategies in these children.\textsuperscript{2}

One economic evaluation\textsuperscript{3} examined the cost-effectiveness of Fosfomycin for the treatment of uncomplicated UTIs in Ontario. In the base case analysis, the cost-per-patient for treating uncomplicated UTIs with Fosfomycin was $105.12 as compared with other antibiotics ($96.19 for sulfonamides, $98.85 for fluoroquinolones, and $99.09 for nitrofurantoin). The study authors concluded that, in addition to being a safe and effective to treat UTIs, Fosfomycin is similar in cost to other reimbursed antibiotics.

References Summarized

Health Technology Assessments
No literature was identified.

Systematic Reviews and Meta-analyses
No literature was identified.

Randomized Controlled Trials
No literature was identified.
Non-Randomized Studies


Economic Evaluations

Appendix — Further Information

Systematic Reviews and Meta-Analyses

Multiple Indications


Prophylaxis Studies


Randomized Controlled Trials

Alternative Intervention


Prophylaxis Studies


Non-Randomized Studies

Prophylaxis Studies


No Comparator


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