TITLE: Drug Therapies for Anthrax: Guidelines

DATE: 17 July 2009

RESEARCH QUESTIONS:

1. What are the guidelines for drug therapies to use for the prevention and treatment of anthrax?

2. What are the guidelines for dosage and duration of treatment for prevention and treatment of anthrax?

METHODS:

A limited literature search was conducted on key health technology assessment resources, including PubMed, the Cochrane Library (Issue 3, 2009), University of York Centre for Reviews and Dissemination (CRD) databases, ECRI, EuroScan, international health technology agencies, and a focused Internet search. The search was limited to English language articles published between 2004 and July 2009. Filters were applied to limit the retrieval to health technology assessments, systematic reviews, meta-analyses randomized controlled trials, controlled clinical trials, and guidelines. Internet links were provided, where available.

The summary of findings was prepared from the abstracts of the relevant information. Please note that data contained in abstracts may not always be an accurate reflection of the data contained within the full article.

RESULTS:

HTIS reports are organized so that the higher quality evidence is presented first. Therefore, systematic reviews are presented first. These are followed by randomized controlled trials, controlled clinical trials, and evidence-based guidelines.
The search identified four guidelines. No health technology assessments, systematic reviews, randomized controlled trials, or controlled clinical trials were found. The appendix includes review articles, observational studies, and decision models assessing the costs or clinical outcomes of various antibiotic and vaccination strategies related to anthrax exposure.

OVERALL SUMMARY OF FINDINGS:

Four guidelines were identified that were relevant to the research questions. Two were from Europe, \(^1,3\) and two from the US. \(^2,4\) For post-exposure prophylaxis, the guidelines recommend 60 days of antibiotic therapy.\(^1-3\) First line agents are oral ciprofloxacin or doxycycline for adults, children and pregnant women.\(^1-3\) Amoxicillin may also be used if the anthrax strain is susceptible.\(^1-3\) Second line agents include other fluoroquinolones, clindamycin, chloramphenicol, rifampin, or vancomycin.\(^1,2\)

For treatment of inhalation or systemic anthrax, intravenous ciprofloxacin is recommended combined with one or more agents such as clindamycin, ampicillin, penicillin, meropenem, rifampin, vancomycin,\(^2\) chloramphenicol, imipenem, clarithromycin,\(^3,4\) erythromycin, or gentamicin.\(^1\) Doxycycline may be used in place of ciprofloxacin\(^1-4\) but may not be preferred due to its poorer CNS penetration.\(^1,2,4\) Sixty day treatment is recommended with adjustment based on the clinical course.\(^1,2,4\) Oral therapy may be used once the patient’s condition improves.\(^1-4\) Corticosteroids may be considered in patients that develop meningitis.\(^2,4\)

Cutaneous anthrax without systemic involvement may be treated with oral ciprofloxacin or doxycycline for seven to ten days.\(^1-3\) Bioterrorism related cutaneous anthrax may require 60 days of antibiotics because of potential aerosol exposure.\(^2,3\)
REFERENCES SUMMARIZED:

Health technology assessments
No literature identified

Systematic reviews and meta-analyses
No literature identified

Randomized controlled trials
No literature identified

Controlled clinical trials
No literature identified

Guidelines and recommendations


PREPARED BY:
Gaetanne Murphy, BSc Pharm, Research Officer
Jessie Cunningham, MISt, Information Specialist

*Health Technology Inquiry Service*
Email: htis@cadth.ca
Tel: 1-866-898-8439
APPENDIX – FURTHER INFORMATION:

Systematic reviews


Observational studies


Economic evaluations


Review articles


Additional references
