TITLE: Treatment of Botulism: Clinical-Effectiveness, Cost-Effectiveness, and Guidelines

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RESEARCH QUESTIONS:

1. What is the clinical-effectiveness of pharmaceuticals for the treatment of botulism?
2. What is the clinical-effectiveness of botulinum antitoxin for the treatment of botulism?
3. What are the guidelines for choice of pharmaceutical, dosage, and duration of treatment for botulism?
4. What is the cost-effectiveness of botulinum antitoxin for treatment of botulism?

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. No filters were applied to limit the retrieval by study type. Internet links are 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:

The literature search identified one randomized controlled trial (RCT) and one evidence-based guideline regarding clinical-effectiveness of treatments for botulism. No health technology assessments, systematic reviews, meta-analyses, controlled clinical trials, observational...
studies, or economic evaluations were identified. Additional articles of potential interest are included in the appendix.

HTIS 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, controlled clinical trials, observational studies, economic evaluations, and evidence-based guidelines.

OVERALL SUMMARY OF FINDINGS:

Arnon et al. (2006)\(^1\) performed a five-year RCT on 122 infants with botulism, using Human Botulism Immune Globulin Intravenous (BIG-IV). They concluded that the treatment was safe and effective for infants with botulism type A or type B, shortening the length of the illness and hospital stay, and decreasing costs.

The BICHAT guidelines (2004)\(^2\) recommend that patients with botulism be given trivalent (A,B,E) equine antitoxins as soon as possible after diagnosis. Heptavalent human (A-G) antitoxins can be given, if available, but anaerobic antibacterial agents are ineffective against botulinum toxin (although they can be used to treat wound infection or abscesses).

In summary, BIG-IV was considered effective treatment for infant botulism, according to one RCT. The BICHAT guidelines recommended administration of trivalent (A, B, E) equine antitoxins for immediate treatment of botulism, but did not provide recommendations for dosage or duration of treatment. No additional articles were identified regarding the dosage or duration of treatment for botulism, or the cost-effectiveness of botulinum antitoxin.
REFERENCES SUMMARIZED:

Health technology assessments
No literature identified

Systematic reviews and meta-analyses
No literature identified

Randomized controlled trials


Controlled clinical trials
No literature identified

Observational studies
No literature identified

Economic evaluations
No literature identified

Guidelines and recommendations


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APPENDIX – FURTHER INFORMATION:

Guidelines and recommendations


Review articles


Bioterrorism articles
