TITLE: Salbutamol for Treatment of Asthma Symptoms: Clinical Effectiveness and Guidelines

DATE: 9 March 2010

RESEARCH QUESTIONS:

1. What is the clinical effectiveness of administration of salbutamol via inhaled nebulizer or metered dose inhaler for the treatment of suspected asthma symptoms in the pre-hospital or emergency room setting?

2. What are the guidelines for the administration of salbutamol prior to a defined diagnosis of asthma?

METHODS:

A limited literature search was conducted on key health technology assessment resources, including PubMed, the Cochrane Library (Issue 2, 2010), 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 2000 and Feb 2010. No filters were applied to limit the retrieval by study type for research question 1 while a guideline filter was applied to research question 2. 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, health technology assessment reports, systematic reviews, and meta-analyses are presented first. These are followed by randomized controlled trials, controlled clinical trials, observational studies, and evidence-based guidelines.
Five randomized controlled trials and one observational study were identified pertaining to the clinical effectiveness of administration of salbutamol via inhaled nebulizer or metered dose inhaler for the treatment of suspected asthma symptoms in the pre-hospital or emergency room setting. No relevant health technology assessment reports, systematic reviews, meta-analyses, or controlled clinical trials were identified. No evidence-based guidelines pertaining to the administration of salbutamol prior to a defined diagnosis of asthma were identified. Additional information that may be of interest has been included in the appendix.

OVERALL SUMMARY OF FINDINGS:

Evidence from randomized controlled trials indicates that both nebulizers\(^2\)-\(^5\) and metered dose inhalers in conjunction with spacers\(^1\)-\(^6\) are effective methods of delivering salbutamol to children experiencing acute wheezing who present to emergency departments. One trial found that patients responded faster to salbutamol delivered via metered dose inhalers with spacers than by nebulizer.\(^5\) No trials were identified that studied the effectiveness of either delivery method for salbutamol in adults with suspected asthma.

Data from one observational study indicates that emergency medical technicians can be trained to identify bronchospasm and can safely administer salbutamol via nebulizer.\(^6\) No evidence-based guidelines were identified for the administration of salbutamol prior to a defined diagnosis of asthma.
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

Guidelines and recommendations
No literature identified.
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APPENDIX – FURTHER INFORMATION:

Observational studies


Additional references