Corticosteroid treatment of severe community-acquired pneumonia

Gorman S K, Slavik R S, Marin J

CRD summary
This review aimed to assess the evidence for adjunctive corticosteroids on the treatment of severe community-acquired pneumonia. The authors concluded that, given the paucity of information on their effects, systemic corticosteroids could not be recommended for adjunctive treatment of severe community-acquired pneumonia. Reporting limitations make it difficult to establish the reliability of the authors' conclusions.

Authors' objectives
To assess the evidence for adjunctive corticosteroids in the treatment of severe community-acquired pneumonia.

Searching
MEDLINE and EMBASE databases were searched from inception to February 2007 for relevant papers. Search terms were reported. In addition, the bibliographies of retrieved articles were scanned for further relevant studies.

Study selection
Clinical studies that evaluated the use of corticosteroids for community-acquired pneumonia in adults were eligible for inclusion in the review.

Studies included in the review evaluated the effects of intravenous hydrocortisone and methylprednisolone in patients admitted to an intensive care unit for severe community-acquired pneumonia and mechanically ventilated patients with severe community-acquired pneumonia or hospital-acquired pneumonia.

The authors did not state how the papers were selected for the review, or how many reviewers performed the assessment.

Assessment of study quality
The authors did not state that they assessed validity.

Data extraction
Data on the main characteristics of the included studies were presented.

The authors did not state how the data were extracted for the review, or how many reviewers performed the extraction.

Methods of synthesis
The included studies were briefly summarised in a narrative synthesis.

Results of the review
Three studies were included in the review (n=96 patients).

Two studies (n=50 patients) reported statistically significant improvements on some surrogate endpoints of pulmonary and systemic inflammation (e.g. lower serum C-reactive protein and interleukin-6 levels), although the effects were not consistent for all markers. The studies were too small to detect a difference on clinically important outcomes.

One small randomised controlled trial (n=46 patients) indicated that, compared to placebo, hydrocortisone may have improved markers of inflammation, oxygenation and organ dysfunction scores and reduced the duration of intensive care unit and hospital stay. There was no observed benefit on overall mortality.

Authors' conclusions
Given the paucity of information on their effects on meaningful clinical endpoints and adverse drug events, systemic corticosteroids cannot be recommended for adjunctive treatment of severe community-acquired pneumonia.

**CRD commentary**
The review question was broadly defined in terms of participants and interventions of interest. Two electronic databases were searched with hand searching of bibliographies. However, it does not appear that efforts were made to identify unpublished or grey literature, so the potential for publication bias cannot be excluded. The authors did not formally assess the methodological quality of the included studies, but they did discuss aspects of validity in their discussion. Studies were individually and briefly summarised in the text of the review. Given the small number of heterogeneous studies, a narrative synthesis was appropriate. It does not appear that any attempts were made to minimise the potential for bias or error in the selection or data extraction processes. Overall, the limitations in reporting make it difficult to establish the reliability of the authors' conclusions.

**Implications of the review for practice and research**

**Practice:** The authors stated that systemic corticosteroids cannot be recommended for adjunctive treatment of severe community-acquired pneumonia.

**Research:** The authors did not state any implications for research.

**Funding**
Not stated.

**Bibliographic details**

**PubMedID**
17519300

**DOI**
10.1345/aph.1H660

**Original Paper URL**
http://aop.sagepub.com/content/41/7-8/1233

**Indexing Status**
Subject indexing assigned by NLM

**MeSH**
Adrenal Cortex Hormones /pharmacokinetics /therapeutic use; Community-Acquired Infections /blood /drug therapy; Humans; Pneumonia /blood /drug therapy; Randomized Controlled Trials as Topic

**AccessionNumber**
12007002660

**Date bibliographic record published**
09/08/2008

**Date abstract record published**
26/08/2009

**Record Status**
This is a critical abstract of a systematic review that meets the criteria for inclusion on DARE. Each critical abstract contains a brief summary of the review methods, results and conclusions followed by a detailed critical assessment on
the reliability of the review and the conclusions drawn.