Addition of Steroids Improves Outcomes in Children and Adults with CAP

Clinical Question
In adults and children with community-acquired pneumonia (CAP), does the addition of corticosteroid treatment to usual care improve outcomes?

Bottom Line
Adding corticosteroid treatment to the management of CAP is beneficial for children and adults. Treatment decreases clinical failures, time in the hospital, and the risk of death in adults with severe pneumonia. (Level of Evidence = 1a)

Synopsis
To conduct this systematic review and meta-analysis, the authors searched four databases without language restriction, including Cochrane CENTRAL, and identified 17 randomized controlled trials with a total of 2,264 cases of radiographically confirmed pneumonia in children and adults treated with corticosteroid vs. placebo or no treatment in addition to usual care. Two investigators independently selected the trials for inclusion and abstracted the data. The corticosteroid varied in type, dosage, and route, with the average dosage in adults being 40 to 50 mg of prednisone equivalents daily for an average of seven days. Corticosteroids decreased mortality in adults with severe CAP (relative risk = 0.58; 95% CI, 0.4 to 0.84) but not nonsevere CAP. Treatment resulted in a reduced time to clinical cure, fewer clinical failures, shorter overall hospital stays, fewer intensive care unit stays, and reduced rates of pneumonia complications. In children, corticosteroid treatment reduced the likelihood of clinical failure and decreased the time to clinical cure. Children’s mortality rates, studied in only two trials, were not different. Hyperglycemia occurred more often with corticosteroid treatment. The researchers did not evaluate the risk of publication bias. Study results were homogeneous across studies for most outcomes.

Study design: Meta-analysis (randomized controlled trials)
Funding source: Unknown/not stated
Setting: Inpatient (any location)

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Editor’s Note: Dr. Ebell is deputy editor for evidence-based medicine for AFP and cofounder and editor-in-chief of Essential Evidence Plus, published by Wiley-Blackwell. Dr. Shaughnessy is an assistant medical editor for AFP.