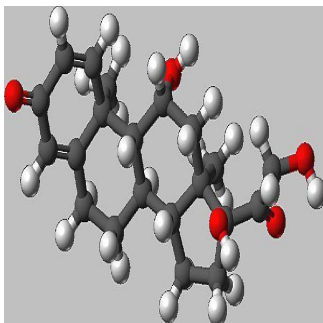


## Corticosteroids for Severe Community-Acquired Pneumonia



A new study published in *JAMA* shows that the use of the corticosteroid methylprednisolone compared with placebo reduced treatment failure for patients with severe community-acquired pneumonia and high initial inflammatory response. "If replicated, these findings would support the use of corticosteroids as adjunctive treatment in this clinical population," according to researchers.

Corticosteroids decrease the expression and action of many cytokines (various proteins secreted by cells of the immune system that serve to regulate the immune system) involved in the inflammatory response associated with pneumonia, but the benefit of using corticosteroids for these patients is uncertain, the researchers explain.

In the study, Antoni Torres, MD, PhD, of the Hospital Clinic in Barcelona, Spain, and colleagues randomly assigned patients at three Spanish teaching hospitals with severe community-acquired pneumonia and a high inflammatory response (defined as blood test for C-reactive protein of greater than 150 mg/L at admission) to receive intravenously the corticosteroid methylprednisolone (n = 61) or placebo (n = 59) for five days started within 36 hours of hospital admission.

Dr. Torres et al. found that there was less treatment failure — defined using outcomes such as development of shock (abnormally low blood pressure), need for invasive mechanical ventilation, and death within 72 hours of treatment — among patients from the methylprednisolone group (13 percent compared with 31 percent in the placebo group). Patients who received corticosteroid treatment had 66 percent lower odds of treatment failure, the research team points out.

The results of the study also showed that:

- In-hospital deaths did not differ between groups (10 percent in the methylprednisolone group vs. 15 percent in the placebo group).
- Hyperglycaemia (abnormally high blood sugars) occurred in 11 patients (18 percent) in the methylprednisolone group and in seven patients (12 percent) in the placebo group.

In an accompanying editorial, Richard G. Wunderink, MD, of the Northwestern University Feinberg School of Medicine, Chicago, comments on Dr. Torres' findings: "A more important question is what exactly are steroids preventing? Because radiographic progression during the period between 72 hours and five days was the primary driver of treatment differences, understanding what this clinical finding represents is key to acceptance of the findings."

The two logical explanations for radiographic progression are uncontrolled pneumonia and development of acute respiratory distress syndrome, says Dr. Wunderink. "Although the latter is supported by a body of literature, a beneficial effect on uncontrolled pneumonia is less logical. A more intriguing possibility is that corticosteroids block a Jarisch-Herxheimer-like reaction to initiation of antibiotics in patients with high genomic bacterial load," he notes.

Community-acquired pneumonia is the leading infectious cause of death in developed countries. Despite advances in antibiotic treatment, mortality among hospitalised patients remains high, especially in those with severe pneumonia and in those who experience treatment failure (observed in 10-20 percent of patients). Treatment failure is associated with excessive inflammatory response and worse outcomes.

Source: *JAMA*  
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