



Effective Health Care

De-escalation of Antibiotic Treatment for Nosocomial Pneumonia

Nomination Summary Document

Results of Topic Selection Process & Next Steps

- De-escalation of antibiotic treatment for nosocomial pneumonia is not feasible for a full systematic review due to the limited data available for a review at this time.
- Given the limited number of studies on and clinical uncertainties about de-escalation of antibiotic treatment for nosocomial pneumonia, this topic could potentially be considered for new research in comparative effectiveness.

Topic Description

Nominators: Health care professional associations and an organization

Nomination Summary: This topic addresses the role of de-escalation in optimizing antibiotic therapy in patients with one of the most common healthcare-associated illnesses—pneumonia.

Staff-Generated PICO:

Population(s): Adult patients with hospital-acquired pneumonia (HAP) or ventilator-associated pneumonia (VAP), shock or sepsis of any severity caused by any gram-negative or gram-positive pathogen, not previously treated with empirical but inadequate antibiotics for the same infection

Intervention(s): De-escalation strategy consisting of narrowing the spectrum or number of antimicrobial agents or both

Comparator(s): Non-de-escalation strategy based on physician judgment

Outcome(s): Clinical response (e.g., clinical pulmonary infection score, clinical cure rate, Acute Physiology and Chronic Health Evaluation II [APACHE II] score), duration of therapy, adverse events such as nephrotoxicity, relapse after discontinuation of antibiotic, rate of MDR pathogens during therapy, rate of drug-resistant pathogens after discontinuation of therapy, rate of superinfection, mortality (e.g., 30-day or in-hospital mortality), rate of mechanical ventilation, duration of mechanical ventilation, length of stay (intensive care unit [ICU] or in-hospital), frequency of de-escalation, frequency of antibiotic use, microbiologic eradication, time to microbiologic eradication/resolution of pneumonia.

Key Questions from Nominator:

1. Does de-escalation of antimicrobials lead to better outcomes for persons with VAP and potentially with healthcare-associated pneumonia (HCAP) or HAP? (or at least better utilization of antimicrobials?)

Considerations

- The topic meets Effective Health Care (EHC) Program appropriateness and importance criteria. (For more information, see <http://effectivehealthcare.ahrq.gov/index.cfm/submit-a-suggestion-for-research/how-are-research-topics-chosen/>.)
- HAP is one of the most common hospital-acquired infections and the leading cause of infection and reason for antibiotic use in the intensive care unit. HAP is associated with increased morbidity and mortality, length of stay, and costs of care despite advances in antimicrobial therapy, supportive care, and prevention. Concerns for the increasing rates of superinfection (i.e., infection with a new organism) and multidrug resistant pathogens call for ways to optimize existing antibiotic treatment for HAP.
- A literature scan for comparative studies that evaluate the effectiveness of de-escalation in patients with HAP treated for any gram positive or gram negative infection yielded a limited number of studies. Therefore, the topic is not feasible for a full systematic review at this time.
- Conflicting information about the effectiveness of de-escalation has emerged. New research may be important in order to address the uncertainty. This topic may be a good candidate for new research specific to trials of various de-escalation schemes, with attention to patient subgroups based on culture results and illness severity.