NEJM Journal Watch

"Your Patient Doesn't Need a Broad-Spectrum Antibiotic"

Prompts about antibiotic stewardship safely limited extended-spectrum antibiotic use in patients with pneumonia or urinary tract infections.

Almost half of patients who are hospitalized for pneumonia or urinary tract infections (UTIs) receive unnecessary extended-spectrum antibiotics. In two studies, researchers evaluated whether real-time identification of inpatients at low risk for multidrug-resistant organisms could limit use of extended-spectrum agents. In both trials, researchers randomized 59 community-based U.S. hospitals to use routine antibiotic stewardship (i.e., education, coaching, and feedback) or routine stewardship plus real-time computerized order-entry (CPOE) prompts (recommending standard-spectrum antibiotics in patients with low estimated risk for multidrug-resistant organisms) in non–critically ill adults (mean age, 68) with pneumonia or UTIs. An 18-month baseline period was followed by a 15-month intervention period.

In the pneumonia trial, the proportion of patients who received extended-spectrum antibiotics was similar during the baseline and intervention periods in the routine-stewardship group (≈50%) but decreased to 38% during the intervention in the CPOE group. CPOE prompts lowered the number of extended-spectrum treatment days by 28%. Intensive care unit (ICU) transfer and hospital length of stay did not differ significantly between the two groups. Fewer than 2% of cultures were positive for methicillin-resistant *Staphylococcus aureus* or Pseudomonas during the study.

In the UTI trial, the proportion of patients who received extended-spectrum antibiotics increased slightly (from 41% to 43%) during the baseline and intervention periods in the routine-stewardship group but decreased from 37% to 33% during the intervention in the CPOE group. CPOE prompts significantly lowered the number of extended-spectrum treatment days by 17%. ICU transfer and hospital length of stay did not differ significantly between the two groups. Approximately 3% of cultures were positive for Pseudomonas and ≈8% of cultures were positive for extended-spectrum β-lactamase organisms during the study.

COMMENT

Most patients hospitalized with pneumonia or UTIs do not need extended-spectrum antibiotics, yet they often are prescribed. By quantifying risk, real-time electronic health record–generated recommendations can reduce these numbers substantially without sacrificing quality of care or patient safety.

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Gohil SK et al. Stewardship prompts to improve antibiotic selection for pneumonia: The INSPIRE randomized clinical trial. **JAMA** *2024 Apr 19; [e-pub]. (https://doi.org/10.1001/jama.2024.6248)*

Gohil SK et al. Stewardship prompts to improve antibiotic selection for urinary tract infection: The INSPIRE randomized clinical trial. **JAMA** *2024 Apr 19; [e-pub]. (https://doi.org/10.1001/jama.2024.6259)*