Our objective was to examine whether an PCT algorithm compared with standard practice would reduce antibiotic exposure in patients with LRTI (pneumonia and acute exacerbations of chronic obstructive pulmonary disease (AECOPD)) in an American urban academic hospital.

Methods. From April 17, 2017 until November 1, 2017, consecutive patients admitted to a medicine service were enrolled in the PCT intervention if they were receiving antibiotics for LRTI and gave consent. Providers were encouraged to discontinue antibiotics using a PCT algorithm with predefined cutoffs. Serum PCT was measured in the hospital laboratory once daily. Results and recommendations were communicated to providers by study team and in the medical record. Control patients were selected by reviewing charts for patients admitted to a medicine service for LRTI from December 1, 2016 to April 16, 2017. The primary endpoint was median antibiotic duration. Overall adverse outcomes at 30 days comprised death, transfer to an intensive care unit, antibiotic side effects, *Candida* difficult infection, disease-specific complications, and new antibiotic prescription for LRTI after discharge.

Results. 174 patients were enrolled in the intervention group and 200 patients in the control group. Intervention group providers complied with the PCT algorithm in 75% of encounters. The rate of overall adverse outcomes was similar in PCT and control groups (21.8% vs. 23.5%; difference, -0.02; 95% CI, -0.10 to 0.07). PCT-guided therapy reduced the median antibiotic duration for pneumonia from 7 days to 6 (P = 0.05), and AECOPD from 4 days to 3 (P = 0.01). Noncompliance with the PCT algorithm developed in 260 excess antibiotic days in 44 patients.

Conclusion. In our center, 75% adherence to a PCT-guided algorithm safely reduced the duration of antibiotics for treating LRTI. Incentivizing providers to comply with PCT-guided algorithms could lead to further reductions in antibiotic use.

Disclosures. J. Townsend, Brahms: Grant Investigator, Research Grant.

1969. Comparison of Adverse Event Rates Between Patients Treated With Ceftaroline or Ceftriaxone

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Background. At the VA St. Louis Health Care System 17.3% of patients treated with ceftaroline developed an adverse drug reaction (ADR). This evaluation compares ADR rates between patients treated with ceftaroline and those treated with ceftriaxone.

Methods. This was a retrospective, single-center cohort study of patients treated with ceftaroline or ceftriaxone at the VA St. Louis Health Care System between October 29, 2010 and March 28, 2017. Patients included received at least two doses of either medication and were treated for osteomyelitis, acute bacterial skin and skin structure infections, blood stream infections, pneumonia, infective endocarditis, septic arthritis, prosthetic joint infections, or an empyema. Once identified, patients were matched 1:1 utilizing the nearest neighbor method accounting for age, indication, and baseline comorbidities.

Results. 174 patients were enrolled in the intervention group and 200 patients in the control group. Intervention group providers complied with the PCT algorithm in 75% of encounters. The rate of overall adverse outcomes was similar in PCT and control groups (21.8% vs. 23.5%; difference, -0.02; 95% CI, -0.10 to 0.07). PCT-guided therapy reduced the median antibiotic duration for pneumonia from 7 days to 6 (P = 0.05), and AECOPD from 4 days to 3 (P = 0.01). Noncompliance with the PCT algorithm developed in 260 excess antibiotic days in 44 patients.

Conclusion. In our center, 75% adherence to a PCT-guided algorithm safely reduced the duration of antibiotics for treating LRTI. Incentivizing providers to comply with PCT-guided algorithms could lead to further reductions in antibiotic use.

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