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Ultra-Short-Course Antibiotics for Suspected Pneumonia With Preserved Oxygenation

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Abstract

Background

Suspected pneumonia is the most common indication for antibiotics in hospitalized patients but is frequently overdiagnosed. We explored whether normal oxygenation could be used as an indicator to support early discontinuation of antibiotics.

Methods

We retrospectively identified all patients started on antibiotics for pneumonia in 4 hospitals with oxygen saturations ≥95% on ambient air, May 2017–February 2021. We propensity-matched patients treated 1–2 days vs 5–8 days and compared hospital mortality and time to discharge using subdistribution hazard ratios (SHRs). Secondary outcomes included readmissions, 30-day mortality, *Clostridioides difficile* infections, hospital-free days, and antibiotic-free days.

Results

Among 39 752 patients treated for possible pneumonia, 10 012 had median oxygen saturations ≥95% without supplemental oxygen. Of these, 2871 were treated 1–2 days and 2891 for 5–8 days; 4478 patients were propensity-matched. Patients treated 1–2 vs 5–8 days had similar hospital mortality (2.1% vs 2.8%; SHR, 0.75 [95%

confidence interval {CI}, .51–1.09]) but less time to discharge (6.1 vs 6.6 days; SHR, 1.13 [95% CI, 1.07–1.19]) and more 30-day hospital-free days (23.1 vs 22.7; mean difference, 0.44 [95% CI, .09–.78]). There were no significant differences in 30-day readmissions (16.0% vs 15.8%; odds ratio [OR], 1.01 [95% CI, .86–1.19]), 30-day mortality (4.6% vs 5.1%; OR, 0.91 [95% CI, .69–1.19]), or 90-day *C. difficile* infections (1.3% vs 0.8%; OR, 1.67 [95% CI, .94–2.99]).

Conclusions

One-quarter of hospitalized patients treated for pneumonia had oxygenation saturations ≥95% on ambient air. Outcomes were similar with 1–2 vs 5–8 days of antibiotics. Normal oxygenation levels may help identify candidates for early antibiotic discontinuation. Prospective trials are warranted.

Keywords: pneumonia, antibiotic stewardship, oxygenation, quality improvement

Issue Section: Major Article

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