

Unnecessary antibiotic use in asthma exacerbations may increase hospital stay, costs

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Unnecessary antibiotic use in Asthma exacerbations may increase hospital stay, costs. Credit: ATS

Administering antibiotics to adults hospitalized with an asthma

exacerbation without any documented indication of lung infection appears to lengthen hospital stay, increase cost and result in increased risk for antibiotic-related diarrhea, according to new research presented at the ATS 2018 International Conference.

"Clinical guidelines, including the Global Initiative for Asthma, state that there is no role for antibiotics in [asthma exacerbations](#) unless there is strong evidence of lung infection," said lead study author Mihaela S. Stefan, MD, Ph.D., a research scientist at the Institute for Healthcare Delivery and Population Science and associate professor at the University of Massachusetts Medical School in Springfield.

Dr. Stefan noted that a prior study conducted by her research group found that 60 percent of [patients](#) received antibiotics without an indication of [lung infection](#). "Nevertheless, few studies have assessed whether antibiotics could be beneficial in these patients," she added.

In the largest observational comparative effectiveness study to date, the researchers analyzed the medical records of patients hospitalized for asthma over a two-year period at 554 U.S. hospitals. They excluded patients with any potential reason for receiving antibiotics, including being diagnosed with a sinus infection, pneumonia, bronchitis, emphysema, sepsis or any other condition that should be treated with antibiotics.

Of the remaining 22,043 patients, 46.1 percent were treated with antibiotics within their first two hospital days. The researchers conducted several types of analyses. Using propensity-matched analysis, which they characterized as the most "robust," they found that those receiving antibiotics had:

- longer hospital stays, 4.64 vs 3.4 days;
- higher hospitalization costs, \$6,427 vs. \$5,387; and

- a 55 percent higher risk of antibiotic-related diarrhea.

There was no difference in treatment failure between those who received antibiotics and those who did not. Treatment failure was defined as the initiation of invasive or noninvasive mechanical ventilation, transfer to the [intensive care unit](#) after hospital day two, and in-[hospital](#) mortality or readmission for asthma exacerbation within 30 days of discharge.

"Our results strengthen the evidence that antibiotics should not be prescribed routinely in adult patients hospitalized with asthma," Dr. Stefan said, adding that all patients in the study had received systemic steroids and bronchodilators, the standard of care for patients experiencing an asthma exacerbation. "All hospitals should assess their practice in caring for patients hospitalized with asthma and increase their antibiotic stewardship."

She added that her research group is planning a qualitative study to understand why physicians use [antibiotics](#) in [asthma](#).

Provided by American Thoracic Society

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