Antibiotic overuse linked to high incidence of diagnostic errors

New research by the Minneapolis Veterans Affairs Medical Center shows that the overuse of antibiotics may be linked to diagnostic errors, threatening patient outcomes and increasing health care costs. The study was published on May 18 in “Infection Control & Epidemiology,” the online journal for the Society for Healthcare Epidemiology of America.

According to researchers, antibiotics are administered to approximately 56 percent of all hospital patients. However, a significant portion of those patients receive antibiotics they don’t need due to misdiagnosis.

“The findings suggest that antimicrobial stewardship programs could be more impactful if they were designed to help providers make accurate initial diagnoses and to know when antibiotics can be safely withheld,” said Dr. Greg Filice, lead author of the study.

Researchers conducted a retrospective cohort study of 500 randomly selected inpatient cases at MVAMC in order to examine provider diagnoses and evaluate whether the prescribed antibiotic course was warranted. Four physicians who were board-certified in infectious diseases and internal medicine judged the cases. Each diagnosis was categorized as either correct, incorrect, indeterminate or a symptom consistent with an infectious disease.

The researchers discovered that 95 percent of the 209 patients who received an incorrect or inconclusive diagnosis were inappropriately given antimicrobial courses. By comparison, only 38 percent of the 291 patients who received a correct initial diagnosis were inappropriately administered antibiotics.

Overall, only 58 percent of patients received a correct initial diagnosis. The most common inaccurate diagnoses were identified as cystitis, urinary tract infections, pneumonia, kidney infections and urosepsis. Researchers identified several contributing factors that led health care workers to make incorrect diagnoses, including fatigue, lack of clinical experience and relying on intuitive processes rather than analytical processes.

“Diagnostic accuracy is integral to the safe use of antibiotics,” said Filice. “In order to improve the use of antibiotics in health care, we must consider this challenge and look for tools and strategies that help clinicians decrease unnecessary and potentially harmful antibiotic use.”

“Modern Healthcare” reports that there has been growing concern regarding the overuse of antimicrobials due to a worldwide increase in drug-resistant bacteria. Approximately 23,000 people die and 2 million people are sickened each year due to drug-resistant superbugs, including methicillin-resistant Staphylococcus aureus and carbapenem-resistant Enterobacteriaceae. The threat is so serious that President Obama issued an executive order in September 2014 instructing the Department of Health and Human Services, the Department of Defense and the Department of Agriculture to take aggressive action on the issue. The order specifically called for improved antibiotic stewardship in health care facilities.

Filice said efforts to combat antimicrobial overuse may be more successful if the campaigns are designed to include decision supports that help health care workers make accurate initial diagnoses. For example, he said the

Veterans Administration is looking into a four-tiered strategy that would require pharmacists to review electronic health data before filling antibiotic drug prescriptions and demand that physicians include a diagnosis with every prescription.

“It’s so easy to start an antibiotic, but that will force them to think carefully about the decision,” said Filice.

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