

Antibiotic use increases at academic medical centers

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Antibacterial drug use appears to have increased at academic medical centers between 2002 and 2006, driven primarily by greater use of broad-spectrum agents and the antibiotic vancomycin, according to a report in the Nov. 10 issue of *Archives of Internal Medicine*.

Using antibacterial drugs increases the risk that pathogens will become resistant to their effects, according to background information in the article. Infection with drug-resistant bacteria is associated with greater illness and death and higher health care costs than infection with bacteria susceptible to antibiotics. "Many professional societies and national agencies have recommended monitoring antibacterial use and linking patterns of use to resistance," the authors write.

Amy L. Pakyz, Pharm.D., M.S., of Virginia Commonwealth University, Richmond, and colleagues measured antibiotic use documented in claims data from university teaching hospitals between 2002 and 2006. In 2006 and 2007, pharmacists or physicians specializing in infectious diseases at 19 hospitals completed a 12-question survey about factors that may influence antimicrobial drug use, including whether the hospital had a stewardship program to reduce antibiotic use.

Data were available from 35 hospitals in 2006—that year, a total of 775,731 patients were discharged, with 492,721 (63.5 percent) receiving an antibacterial drug. Between 2002 and 2006, the average total antibacterial use at the 22 hospitals providing five-year data increased from 798 days of therapy per every 1,000 days patients were in the

hospital to 855 per 1,000 patient-days in 2006.

When antibiotic use was examined by class, fluoroquinolones were the most commonly used, and their use remained constant. Five broad-spectrum antibiotic classes—those that act against a wide range of bacteria—increased significantly, driving the overall increase. "The other change contributing to the increase in total use was the marked increase in the use of vancomycin," the authors write. "During five years, the mean [average] vancomycin use increased by 43 percent," and this drug became the single most commonly used antibacterial in the hospitals studied between 2004 and 2006.

"With few new antibacterials in development, antimicrobial stewardship programs in concert with aggressive infection control efforts represent the best chance for control of resistant pathogens," the authors write. "Stopping antibacterials when they are not needed, switching to more narrow-spectrum drug regimens and optimal dosing using pharmacokinetic and pharmacodynamic principles [interactions between drugs and the body] are critical. Equally important will be investigations designed to identify shorter durations of antibacterial treatments for nosocomial [hospital-acquired] infections that have the potential to dramatically decrease antibacterial exposure."

Source: JAMA and Archives Journals

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