

## Excessive Use Increasing Antimicrobial-Resistant Infections



According to a recent survey, approximately 50 percent of hospitalised patients were receiving antimicrobial drugs and around half of these patients were receiving two or more antimicrobial drugs. In majority of the cases, the antimicrobial had been prescribed for infection treatment.

However, based on factors such as lack of indication or incorrect drug selection, dosing levels, or treatment duration, a large proportion of this use of antimicrobials in acute care hospitals may be inappropriate. Excessive exposure to antimicrobial drugs is actually a risk factor for the acquisition of resistant and difficult-to-treat pathogens. It is also a leading cause of adverse drug events. That is why it is important to improve the use of antimicrobial drugs and to reduce antimicrobial-resistant infections.

The study was conducted by Shelley S. Magill MD, PhD, of the Centers for Disease Control and Prevention, Atlanta, and her colleagues. The aimed to gauge the prevalence of inpatient antimicrobial drug use, the most commonly used antimicrobial drugs and the reasons for using them.

183 acute care hospitals in ten states in the US were included in the survey. 11,283 patients were randomly selected from each hospital's morning census. 49.9 percent of these patients had received one or more antimicrobial drugs at the time of this survey. 49.9 percent were receiving one antimicrobial drug; 32.7 percent were receiving two antimicrobial drugs, 12.1 percent and 5.4 percent were receiving three and four antimicrobial drugs respectively.

With respect to reasons of usage, 75.9 percent were receiving the drugs for the treatment of infections. 19 percent received it for surgical prophylaxis while 6.9 percent received them for medical prophylaxis. 6.9 percent of patients were being prescribed antimicrobial drugs for no documented rationale.

54 percent of antimicrobial drugs were given for the treatment of lower respiratory tract, urinary tract, or skin and soft tissue infections. Of the 83 different antimicrobial drugs being administered, vancomycin, piperacillin-tazobactam, ceftriaxone and levofloxacin accounted for 45 percent of all antimicrobial drug treatment. These four drugs were also the most commonly used for the treatment of community-onset infections and for patients outside of the critical care setting.

According to the study authors, "Taken together, focusing stewardship efforts on these 4 drugs and 3 infection syndromes could address more than half of all inpatient antimicrobial drug use." The authors point out that the results of this study highlight the need to improve antimicrobial use and to identify specific areas where interventions can be made to achieve this goal. They also suggest that all acute care hospitals should implement an antimicrobial stewardship program in line with CDC's recommendation.

"To minimize patient harm and preserve effectiveness, it is imperative to critically examine and improve the ways in which antimicrobial drugs are used," the researchers write. "Improving antimicrobial use in hospitals benefits individual patients and also contributes to reducing antimicrobial resistance nationally."

Source: JAMA  
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