

Medical News

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Additional news items in this issue: *Knowledge, Attitudes, and Behavior of Operating Room Staff*, page 659; *HCV in HIV-Infected Hemophiliacs: An Opportunistic Infection*, page 663; *Trends in Nosocomial Pneumonia in Surgical Patients*, page 675; *Parenteral Antibiotic Administration on Persistence of VRE*, page 684; *Efficacy of Intranasal Influenza Vaccine*, page 694; *Antimicrobial Resistance and Genomic Diversity of Escherichia coli From Urinary Tract Infections*, page 707.

Cephalosporin-Resistant Gram-Negative Bacilli in ICUs

D'Agata and coworkers from Beth Israel Deaconess Medical Center and Harvard Medical School in Boston conducted a study to define the epidemiology of broad-spectrum cephalosporin-resistant gram-negative bacilli in ICUs during a non-outbreak period, including prevalence, risk factors for colonization, frequency of acquisition, and rate of infection.

In this prospective cohort study, subjects were consecutive patients admitted to two surgical ICUs. The outcome measurements were serial patient surveillance cultures screened for ceftazidime (CAZ) resistance, antibiotic and hospital exposure, and infections.

The results showed that, of the 333 patients enrolled, 60 (18%) were colonized with CAZ-resistant gram-negative bacilli (CAZ-RGN) at admission. Clinical cultures detected CAZ-RGN in only 5% (3/60) of these patients. By using logistic regression, CAZ-RGN colonization was associated with duration of exposure to cefazolin and to broad-spectrum cephalosporins/penicillins, Acute Physiology and Chronic Health Evaluation III score, and previous hospitalization. Of the 100 patients who remained in the surgical ICU for >3 days, 26% acquired a CAZ-RGN. Of the 14 infections caused by CAZ-RGN, 11 (79%) were attributable to the same species present in surveillance cultures at admission to the surgical ICU.

The authors concluded that colonization with CAZ-RGN was common and usually was not recognized by clinical cultures. Most patients colonized or infected with CAZ-RGN had positive surveillance cultures at the time of admission to the surgical ICU, suggesting that acquisition frequently occurred in other wards and institutions. Patients exposed to first-generation cephalosporins, as well as broad-spectrum cephalosporins/penicillins, were at high risk of colonization with CAZ-RGN. They suggested that empirical treatment of nosocomial gram-negative infections with broad-spectrum cephalosporins, especially in the critically ill patient, should be reconsidered.

FROM: D'Agata EM, Venkataraman L, DeGirolami P, Burke P, Eliopoulos GM, Karchmer AW, et al. Colonization with broad-spectrum cephalosporin-resistant gram-negative bacilli in intensive care units during a nonoutbreak period: prevalence, risk factors, and rate of infection. *Crit Care Med* 1999;27:1090-1095.

Isolation of *Acinetobacter baumannii* From Vegetables and Implications for Hospital-Acquired Infections

Acinetobacter baumannii is rarely recovered from the skin of patients or healthy European subjects, but it is a significant nosocomial pathogen. The natural reservoir of this organism is uncertain. Berlau and colleagues from the Laboratory of Hospital Infection, Central Public Health Laboratory, London, determined the isolation rates of *Acinetobacter* species from vegetables (as an indicator of the natural environment) using a selective technique and classified the genospecies by amplified ribosomal DNA restriction analysis.

Of the 177 samples of vegetables examined, 30 yielded *Acinetobacter*, with genospecies 2 and 11 being the most common, each with a frequency of 27%. Minimum inhibitory concentration assays showed that strains of genospecies 1, 2, 3, and 13TU (the *Acinetobacter calcoaceticus-A baumannii* complex) were significantly more resistant than other genospecies to ciprofloxacin and gentamicin. Vegetables may therefore be a natural habitat of *A. baumannii* and provide a route by which these bacteria are introduced into hospitals, with implications for infection control. Patients with immune deficiency or reduction probably should not be exposed to these vegetables to prevent colonization and subsequent infection.

FROM: Berlau J, Aucken HM, Houang E, Pitt TL. Isolation of *Acinetobacter* spp including *A. baumannii* from vegetables: implications for hospital-acquired infections. *J Hosp Infect* 1999;42:201-204.

VRE Colonization in ICUs

Ostrowsky and colleagues from Beth Israel Deaconess Medical Center and Harvard Medical School, Boston, Massachusetts, conducted a study to define the epidemiological associations of vancomycin-resistant enterococci (VRE) in ICUs during a non-outbreak period by examining prevalence, risk factors for colonization, frequency of acquisition, and molecular strain types. A prospective cohort design was followed. Consecutive patient admissions to two surgical ICUs at a tertiary-care hospital were enrolled. The main outcome measures