Medical News

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VRE Bacteremia

Enterococci are the third eading cause of nosocomial bloodstream infections (NBSI), and the rate of vancomycin resistance is increasing rapidly. Dr. Michael Edmond and colleagues from the University of Iowa's Surveillance and Control of Pathogens of Epidemiologic Importance (SCOPE) Project analyzed 23 months of surveillance data submitted from 49 consortium hospitals participating in SCOPE. They identified 419 cases of NBSI; of these, vancomycin susceptibility was reported for 364 (87%). Overall, 17% of the organisms were vancomycin resistant. *Enterococcus faecalis* accounted for 60% of the enterococcal isolates and *Enterococcus faecium* represented 20%, but vancomycin resistance was 10 times more common among *E faecium* (47% vs 5%). Vancomycin resistance was significantly more common in larger hospitals (<400 beds, 3%; 400-699 beds, 12%; >700 beds, 25%) and varied significantly by geographic region (Northeast, 28%; Southwest, 16%; Northwest, 5%; Southeast, 4%). Comparing patients with vancomycin-resistant enterococci (VRE) and vancomycin-susceptible NBSI, there were no significant differences in age, gender, the presence of an intravascular catheter, urinary catheter, or ventilatory support. VRE bacteremia was not more likely to occur in critical-care units when compared to wards. Patients with VRE were significantly more likely to be receiving hemodialysis or peritoneal dialysis. Multivariate analysis revealed that peritoneal dialysis and hemodialysis were independent risk factors for the development of VRE bacteremia, possibly reflecting the higher utilization of vancomycin in these patients.

FROM: Edmond MB, Wallace SE, Pfaller MA, Jones RN, Wenzel RP. Surveillance at 49 US medical centers for VRE bacteremia. Presented at the 34th Annual Meeting of the Infectious Disease Society of America; September 18-20, 1996; New Orleans, LA. Abstract 49.

HCV Exposure Prevalence

Researchers from San Francisco General Hospital evaluated the prevalence of bloodborne pathogens among source patients whose blood was involved in an occupational exposure reported to their Needlestick Hotline. All source patients were evaluated by chart review, interview, and testing for HIV (ELISA/IFA), hepatitis B virus (HBV) (hepatitis B surface antigen [HBsAg]/hepatitis B e antigen [HBeAg]), and hepatitis C virus (HCV) (ELISA/RIBA). In 1995, 128 source patients were implicated in the 137 reported exposures (7 were unknown, and 2 were involved in two separate exposures). Ninety-three (73%) of the 128 known source patients were available for testing; the others were discharged before evaluation, refused blood draws, or the blood sample was insufficient for testing.

The HCV status was known for 88 of 93 available source patients; 30 of 88 (34.1%) were infected with HCV. Two were known before the exposure; the other 28 were diagnosed as a consequence of the source patient testing. Two (2.3%) of the 88 available for testing were positive for HBsAg. HIV status was determined for 85 of 93 available source patients; 19 (22.4%) were infected. All 19 infections were diagnosed before the exposure; none of the 66 tested source patients whose HIV status at the time of the exposure was not known tested positive for HIV.

The researchers concluded that HCV and HIV are both highly prevalent among source patients at San Francisco General Hospital. HCV is unlikely to be diagnosed before exposure. HIV among untested source patients is rare. The researchers recommend that hospitals like San Francisco General should evaluate source patients and exposed workers for HCV.

FROM: Evans SE, Fahrner R, Gerberding JL. HIV, HBV, and HCV prevalence among source patients reported to the San Francisco General Hospital Hotline. Presented at the 34th Annual Meeting of the Infectious Disease Society of America; September 18-20, 1996; New Orleans, LA. Abstract 24.

Malaria Transmission Aboard Airline

Brazilian health authorities are tracing the passengers of a flight from Beirut to São Paulo after three passengers developed malaria. A director of the airline said this was the first report of malarial infection on this route, which has been running for 8 months.

According to a federal agency in charge of control of endemic disease, two passengers and one crew member were infected during a mid-flight stop in the Ivory Coast. During the 2-hour stop, the doors of the aircraft were left open, presumably letting in an infected mosquito. The three passengers were diagnosed with *Plasmodium falciparum* malaria approximately 2 weeks after the flight and were treated at hospitals in São Paulo. Government officials issued a public call for all passengers on the route, informing them of the risks of exposures. Twenty of the 360 passengers that were available for testing were found to be negative.

This outbreak emphasizes the need for airlines to be vigilant when landing in malarial areas.

FROM: Csillag C. Science and medicine: mosquitoes stow away on aircraft. *Lancet* 1996;348:880.

FDA Approves Test for TB

Traditional methods for laboratory diagnosis of tuberculosis (TB) may require weeks, and delay can impede treatment and control efforts. Nucleic acid amplification (NAA) tests, such as polymerase chain reaction (PCR) and other methods for amplifying DNA and ribonucleic acid (RNA), may facilitate rapid detection of microorganisms. An NAA test for *Mycobacterium tuberculosis* complex (Amplified *Mycobacterium tuberculosis* Direct Test or MTD [Gen-Probe, San Diego, CA]) recently was approved by the FDA for use on processed clinical specimens, and several other NAA tests are currently under commercial develop-

ment. Although NAA tests have been offered by individual laboratories, approval of commercial kits may result in increased use for clinical practice and TB control.

NAA tests for TB diagnosis do not replace any previously recommended tests. The CDC recently published interim guidelines for the use of NAA tests for TB diagnosis for public health and clinical decisions. These guidelines note that decisions about when and how to use NAA tests for TB diagnosis should be individualized. The tests may enhance diagnostic certainty, but should be interpreted in a clinical context and on the basis of local laboratory performance.

FROM: Centers for Disease Control and Prevention. Nucleic acid amplification tests for tuberculosis. *MMWR* 1996;45:950-951.

Gloves and VRE Control

Researchers at Cook County Hospital in Chicago recently evaluated the efficacy of the use of gloves and gowns compared to the use of gloves alone for the prevention of nosocomial transmission of vancomycin-resistant enterococci (VRE) in a facility where this pathogen is endemic. The study was conducted in a medical intensive-care unit (MICU) that contains 12 beds in single rooms and 4 beds in double rooms. During the study, the unit was geographically divided, so that eight beds were in a glove-and-gown section, and eight beds were in a glove-only section; 181 consecutive patients were assigned to either group based on the availability of beds.

All hospital employees were required to use gloves and gowns when attending to the patients in the glove-and-gown section of the unit and were required to wear gloves when attending to patients in the gloves-only section of the MICU. Hospitals employees were required to wear clean, nonsterile latex gloves when entering a room and to remove the gloves and wash their hands with antibacterial soap before leaving the room. In double rooms, hands were washed, and fresh gloves were donned if the worker moved from one patient to the other.

Disposable, nonwoven, water-resistant isolation gowns were worn when entering a glove-and-gown area and were removed before leaving a room. Because VRE culture results often are delayed, gown-and-glove and glove-only precautions were implemented on admission to the unit with a sign posted on the door of each room outlining the precautions to be taken. Visitors were asked to comply with the precautions. Blood pressure cuffs and thermometers were dedicated for use on individual patients. Rooms were cleaned daily with a phenolic disinfectant detergent. The use of oral vancomycin was restricted to patients who had antibiotic-associated colitis that did not respond to metronidazole.

Compliance with precautions was monitored on all shifts for approximately 7 hours per week by unobtrusive observers. Compliance was evaluated on the basis of room entry, regardless of whether the person being evaluated had contact with the patient or objects in the room.

Rectal surveillance cultures were performed on patients daily. Cultures of environmental surfaces, such as bedrails, bedside tables, and other frequently touched objects in patient rooms and common areas, were taken monthly. Pulsed-field gel electrophoresis (PFGE) was used for molecular epidemiologic typing of VRE.

The 93 patients in the glove-and-gown rooms and the 88 patients in the glove-only rooms had similar demographic and clinical characteristics. Fifteen (16.1%) patients in the glove-and-gown group and 13 (14.8%) in the glove-only group had VRE on admission to the MICU. Twenty-four patients in the glove-and-gown group (25.8%) and 21 in the glove-only group (23.9%) acquired VRE while in the MICU. The mean times to colonization among the patients that became colonized was 8 days in the glove-and-gown group and 7.1 days in the glove-only group. None of these comparisons were statistically significant. In a multivariate analysis, risk factors for acquisition of VRE included length of stay in the MICU, use of enteral feeding, and use of sucralfate. Compliance with precautions was 79% in the glove-and-gown rooms and 62% in the glove-only room. Only 25 of 397 environmental cultures were positive for VRE. Nineteen types of VRE were documented by PFGE during the study period.

These results do not show an added benefit for the use of gloves and gown compared with gloves alone in preventing colonization by VRE in a hospital in which several strains of endemic VRE are circulating. The authors note that the use of fecal incontinence bags for all incontinent patients may have decreased environmental contamination and contributed to the low number of VRE recovered from the environment. The low colony counts on contaminated surfaces may explain why gowns offered no advantage.

The authors caution that this study was done in a facility in which VRE is endemic. They point out that the use of gloves and gown may be effective in specific contexts, such as during an outbreak of a single strain in a nonendemic environment or to control the spread from infected or colonized patients in institutions where prevalence is still low or environmental contamination is extensive.

FROM: Slaughter S, Hayden MK, Nathan C, et al. A comparison of the effect of universal use of gloves and gowns with that of glove use alone in acquisition of VRE in a medical intensive-care unit. *Ann Intern Med* 1996;125:448-456.

Additional news items in this issue: Protease Inhibitors and Rifampin—Serious Drug Interactions, page 18; HCV Transmission by Tattooing, page 23; Vibrio fluvialis *and Leech Therapy, page 27; VRE and Long-Term Care, page 41; Perinatal AIDS Declines, page 57.*

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