Medical News

EDITED BY GINA PUGLIESE, RN, MS; MARTIN S. FAVERO, PHD

CMS and CDC Launch National Surgical Infection Prevention Project

The Centers for Medicare & Medicaid Services (CMS) and the Centers for Disease Control and Prevention (CDC) are collaborating on a national initiative, the CMS/CDC Surgical Infection Prevention (SIP) Project. The project's goal is to improve the selection and timing of administration of prophylactic antibiotics, both factors proven to reduce the risk of surgical infections. State Quality Improvement Organizations (QIOs), formerly known as Peer Review Organizations (PROs), will oversee the project, which will be phased in during 3 years. Twenty states will begin the project on August 1, 2002; 16 states plus the District of Columbia on November 1, 2002; and the remaining 14 states plus Puerto Rico and the Virgin Islands on February 1, 2003.

This project builds on the experience of the CDC's National Nosocomial Infections Surveillance system and previous CMS projects administered through its Health Care Quality Improvement Program. Surgical procedures to be studied for this project include coronary artery bypass graft (CABG), cardiac, colon, hip and knee arthroplasty, abdominal and vaginal hysterectomy, and selected vascular procedures. Quality indicators will include the proportion of patients (1) who receive antibiotics within 1 hour before surgical incision; (2) who receive prophylactic antibiotics consistent with current recommendations; and (3) whose prophylactic antibiotics were discontinued within 24 hours after surgery.

For more information, visit the project's web site at www.surgicalinfectionprevention.org.

Acquired Rifamycin Resistance in Persons With Advanced HIV

Rifamycin drugs (ie, rifampin, rifabutin, and rifapentine) are essential for short-course chemotherapy in persons with active tuberculosis (TB). However, adverse drug–drug interactions complicate the concurrent use of rifamycins and protease inhibitor drugs in persons with active TB who also are infected with human immunodeficiency virus (HIV-TB). The Centers for Disease Control and Prevention (CDC) has recommended the use of rifabutin in place of rifampin in multidrug regimens for the treatment of active TB in HIV-TB because rifabutin can be administered with antiretroviral treatment regimens that include protease inhibitors. These recommendations included twice-weekly intermittent therapy. Because intermittent rifabutin-based regimens had not been evaluated in clinical trials of HIV-TB, the CDC's TB Trials Consortium (TBTC) initiated TBTC Study 23, a single-arm trial of twice-weekly rifabutin-based therapy for the treatment of HIV-TB.

On March 6, the TBTC's Data and Safety Monitoring Board advised the CDC to suspend enrollment in Study 23 because of the occurrence of five cases of acquired rifamycin resistance among patients enrolled in the study. Although the rate of treatment failure or relapse in the study has been low (preliminary life table rate of 4.1% among the 156 patients with some time at risk), all five patients with failure or relapse had acquired rifamycin resistance. All are responding well to treatment with alternative regimens.

In the study, common features in patients with acquired rifamycin resistance were very low CD4 cell count (all < 60/mm^3) at diagnosis of TB and receipt of twice-weekly therapy (in four of five) during the intensive phase (ie, the first 2 months of rifamycin-based short-course therapy for TB); all five received twice-weekly therapy in the continuation phase. The low relapse rate suggests that rifabutin has excellent activity in the treatment of HIV-TB. However, a relation appears to exist between the frequency of dosing and the risk for acquired resistance. In an earlier study of treatment of HIV-TB using once-weekly rifapentine plus isoniazid, acquired rifamycin resistance was common. Acquired rifamycin resistance also occurred in a previous study of HIV-TB treated with twice-weekly rifampin plus isoniazid. It is not known whether the risk for acquired rifamycin resistance is greater with rifabutin than with rifampin. In all of these studies, patients with acquired rifamycin resistance had very low CD4 cell counts at the time of diagnosis of TB. The consistency of these findings suggests that once- or twice-weekly therapy including isoniazid and a rifamycin increases the risk for acquired rifamycin resistance among patients with TB who have advanced HIV.

Additional data are needed to clarify these issues. Until data become available, the CDC recommends that persons with HIV-TB and CD4 cell counts below 100/mm^3 not be treated with highly intermittent (ie, once- or twice-weekly) regimens. These patients should receive daily therapy during the intensive phase, and daily or three doses a week during the continuation phase. In this group of patients, the CDC recommends directly observed therapy for both daily and three-doses-a-week regimens. The low relapse rate suggests that current recommendations concerning duration are sufficient (ie, 6 months minimum, extended to 9 months in patients with a delayed response to therapy).

The CDC does not advise additional action at this time for patients with advanced HIV who have completed TB therapy with intermittent regimens and are clinically stable. However, clinicians should treat suspected relapse in such patients with regimens active against rifamycin-resistant TB until the results of susceptibility testing are available.

For HIV-TB patients with CD4 cell counts of less than 100/mm^3 who are being treated with twice-weekly rifamycin-based therapy, the CDC recommends more frequent thera-

py with the same agents (ie, daily or three times a week).

FROM: Centers for Disease Control and Prevention. Notice to readers: acquired rifamycin resistance in persons with advanced HIV disease being treated for active tuberculosis with intermittent rifamycin-based regimens. *MMWR* 2002;51:214-215.

Patients in Long-Term-Care Facilities: A Reservoir for VRE

Elizaga and coinvestigators from Rush Medical College and Cook County Hospital, Chicago, Illinois, conducted a prospective cohort study with culture surveys and chart reviews to determine the prevalence of rectal colonization with vancomycin-resistant enterococci (VRE) and to identify risk factors for colonization among 100 residents of 20 different long-term–care facilities (LTCFs) who were admitted to two medical wards of an academic acute-care hospital. On admission to the hospital, 45 (45%) of these 100 patients were determined to be harboring VRE. Prior use of antibiotics and the presence of a decubitus ulcer were identified as risk factors. Fourteen other LTCF residents—33% of those at risk—acquired VRE in the hospital.

Antecubital skin colonization with VRE was detected in 28% of patients. Hospital ward surveillance revealed a 60% mean point prevalence of VRE colonization among patients in LTCFs, compared with 21% for other patients ($P < .001$). Patients in LTCFs in urban referral hospitals are a major reservoir for VRE, which can be transmitted to other inpatients in the hospital, in the LTCF, and in smaller community hospitals.

FROM: Elizaga ML, Weinstein RA, Hayden MK. Patients in long-term care facilities: a reservoir for vancomycin-resistant enterococci. *Clin Infect Dis* 2002;34:441-446.

Nosocomial Bloodstream Infections Among Patients Infected With HIV

Petrosillo and colleagues from the Istituto Nazionale per le Malattie Infettive "L. Spallanzani," Istituto di Ricovero e Cura a Carattere Scientifico, Rome, Italy, conducted a 1-year, multicenter, prospective study of patients with advanced human immunodeficiency virus (HIV) infection who were consecutively admitted to 17 Italian infectious diseases wards to assess the incidence of nosocomial bloodstream infections (NBSIs) in these patients and to analyze the main associated risk factors. As of May 1999, a total of 65 NBSIs (4.7%) occurred in 1,379 admissions, for an incidence of 2.45 NBSIs per 1,000 patient-days. Twenty-nine NBSIs were catheter-related bloodstream infections, with a rate of 9.6 central venous catheter–associated infections per 1,000 device-days. Multivariate analysis indicated that variables independently associated with NBSIs included active injection drug use, a Karnofsky Performance Status score of less than 40, presence of a central venous catheter, and length of hospital stay. Mortality rates were 24.6% and 7.2% among patients with and without NBSIs, respectively ($P < .00001$).

It was noted that because the central venous catheter is the main risk factor associated with BSIs, it is important that intravascular catheters not remain in place long after their intended use and are limited to the administration of drugs. The researchers concluded that in the era of highly active antiretroviral therapy, nosocomial BSIs continue to occur frequently and remain severe and life-threatening manifestations.

FROM: Petrosillo N, Viale P, Nicastri E, et al. Nosocomial bloodstream infections among human immunodeficiency virus-infected patients: incidence and risk factors. *Clin Infect Dis* 2002;34:677-685.

Hepatitis E Virus Infection in Hemodialysis Patients in Saudi Arabia

Ayoola and coinvestigators from the King Fahd Central Hospital Gizan, Saudi Arabia, conducted a study to determine the prevalence of antibody to hepatitis E virus (IgM anti-HEV) among hemodialysis patients and to evaluate whether there was an increased risk of infection and exposure to HEV in an area of endemic viral hepatitis. Serum samples were obtained from 83 Saudi patients receiving chronic hemodialysis (group 1), 400 gender- and age-matched healthy subjects (group 2), and hospital patients (group 3). Tests were done for the IgM anti-HEV and IgG anti-HEV.

The prevalence rates of anti-HEV among the patients (group 1) and the healthy controls were 4.8% and 0.3%, respectively. The difference (4.5%) was statistically significant, with a calculated odds ratio (OR) of 20.2 (95% confidence interval [CI_{95}] = 2.1 to 481.0; $P = .0002$). In contrast, there was no significant difference in the prevalence rates of IgG anti-HEV (7.2% vs 10.8%) in both groups. In nonhemodialysis patients with various diseases, 1.6% (1 of 64) of outpatients (group 3) and none (0 of 113) of the ward patients (group 4) were positive for IgM anti-HEV. Thus, the prevalence (4 of 83) of IgM anti-HEV in the hemodialysis patients was significantly higher than the rate (1 of 177) in the combined groups of nonhemodialysis hospital patients. The calculated OR was 8.9 (CI_{95} = 0.92 to 212.8; $P = .037$). IgM antibody to hepatitis A virus (IgM anti-HAV) was not detected in any subjects, and the prevalence rates of IgG anti-HAV were similar in the patients and in the controls (72.3% and 74.3% in groups 1 and 2, respectively, and 75.7% for groups 3 and 4 combined).

The study indicated a significantly higher risk of acute HEV infection among patients receiving chronic hemodialysis. It is possible that these were nosocomial infections acquired by person-to-person transmission in the hemodialysis unit. However, it is more probable that the infections were community acquired, a conclusion supported indirectly by the lack of a significant difference between the prevalence in hemodialysis patients (4.8%) and that in outpatients (1.6%). The authors suggest that in areas of endemic HEV, appropriate strategies should be adopted to prevent the risk of HEV among hemodialysis patients.

FROM: Ayoola EA, Want MA, Gadour MO, Al-Hazmi MH, Hamza MK. Hepatitis E virus infection in haemodialysis patients: a case-control study in Saudi Arabia. *J Med Virol* 2002;66:329-334.