

Medical News

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

Variation in Nosocomial Infections by Patient-Care Setting

Sax and coinvestigators from the University of Geneva Hospitals, Geneva, Switzerland, performed a study to estimate the prevalence of nosocomial infections (NIs) and to assess differences between medical care settings in one hospital complex. A 7-day-period prevalence survey was conducted in May 1998 in a large primary and tertiary healthcare center in Geneva, Switzerland, that included all patients in acute-, sub-acute-, and chronic-care settings. Variables included demography, exposure to invasive devices and antibiotics, surgical history, and patients' localization. Overall prevalence of NIs was 11.3% (acute, 8.4%; sub-acute, 11.4%; chronic-care setting, 16.4%) in the 1,928 patients studied and ranged from 0% in ophthalmology to 23% in critical-care units. Risk of infection in sub-acute- and chronic-care settings was significantly higher than in the acute-care setting, even after adjustment for case-mix. As a distinct group, patients in the geriatric location (belonging to the sub-acute-care setting) showed a significant proportion of urinary (39%) and respiratory (21%) tract infections, contrasting with a relatively low exposure to urinary catheters (6.1%) and orotracheal intubation (0%).

The authors concluded that sub-acute- and chronic-care settings are associated with high infection prevalence, even after case-mix adjustment. Prevalence studies are an easy surveillance tool that can be exploited further by analyzing data according to hospital-care settings to identify high-risk areas.

FROM: Sax H, Hugonnet S, Harbarth S, Herrault P, Pittet D. Variation in nosocomial infection prevalence according to patient care setting: a hospital-wide survey. *J Hosp Infect* 2001;48:27-32.

Serratia Outbreak From Contaminated Epoetin Alfa

The CDC investigated an outbreak of infections among patients at a hemodialysis center. In a 1-month period, 10 *Serratia liquefaciens* bloodstream infections (BSIs) and 6 pyrogenic reactions occurred. Grohskopf and coinvestigators performed a cohort study of all hemodialysis sessions on days that staff members reported *S liquefaciens* BSIs or pyrogenic reactions. They reviewed procedures and obtained cultures of water, medications, soaps, and hand lotions, and swabbed the hands of personnel.

They analyzed 208 sessions involving 48 patients. In 12 sessions, patients had *S liquefaciens* BSIs; in 8, patients had pyrogenic reactions without BSI. Sessions with infections or reactions were associated with higher median doses of epoetin alfa than the 188 other sessions (6,500 vs 4,000 U; $P=.03$) and were more common during afternoon or evening shifts than morning shifts ($P=.03$). Sessions with infections or reactions were associated with doses of epoetin alfa of more than 4,000 U (multivariate odds ratio, 4.0; 95% confidence interval, 1.3-12.3).

A review of procedures revealed that preservative-free, single-use vials of epoetin alfa were punctured multiple times, and residual epoetin alfa from multiple vials was pooled and administered to patients. *S liquefaciens* was isolated from pooled epoetin alfa, empty vials of epoetin alfa that had been pooled, antibacterial soap, and hand lotion. All isolates were identical by pulsed-field gel electrophoresis. After the practice of pooling epoetin alfa was discontinued, and the contaminated soap and lotion were replaced, no further *S liquefaciens* BSIs or pyrogenic reactions occurred at this hemodialysis facility.

The authors concluded that puncturing single-use vials multiple times and pooling preservative-free epoetin alfa caused this outbreak of BSIs in a hemodialysis unit. To prevent similar outbreaks, medical personnel should follow the manufacturer's guidelines for the use of preservative-free medications.

FROM: Grohskopf LA, Roth VR, Feikin DR, Arduino MJ, Carson LA, Tokars JI, et al. *Serratia liquefaciens* bloodstream infections from contamination of epoetin alfa at a hemodialysis center. *N Engl J Med* 2001;344:1491-1497.

Catheter Manipulations and Risk of Catheter-Associated BSIs

Mahieu and coinvestigators, from the University Hospital of Antwerp, conducted a prospective cohort study to evaluate the influence of catheter manipulations on catheter-associated (CA) bloodstream infection (BSI) in neonates. Neonates admitted between November 1, 1993, and October 31, 1994, at the neonatal intensive care unit of a university hospital were included in the study. Seventeen episodes of CA BSI occurred in 357 central catheters over a period of 3,470 catheter-days, with a cumulative incidence of 4.7/100 catheters and an incidence density of 4.9/1,000 catheter-days. Patient and catheter-related risk factors independently associated with CA BSI were catheter-hub colonization (odds ratio [OR], 32.6; 95% confidence interval [CI]₉₅, 4.3-249) and