Medical News

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

Risk Factors for Surgical-Site Infections After Pediatric Cardiovascular Surgery

Although risk factors for surgical-site infection (SSI) after cardiovascular surgery have been well documented among adults, few studies have been conducted in children. Allpress et al. from Children's Hospital and Regional Medical Center, University of Washington, Seattle, Washington, performed a case–control study to identify risk factors for SSI among hospitalized children undergoing cardiovascular surgery. National Nosocomial Infections Surveillance System criteria were used prospectively to identify cases of SSI among hospitalized patients who underwent cardiovascular surgery. Seventy-nine patients who underwent cardiovascular surgery without SSI during hospitalization were randomly selected as control-patients. Case-patients were compared with control-patients to determine preoperative, intraoperative, and postoperative risk factors for SSI during hospitalization. Multivariable logistic regression was performed.

An SSI developed in 19 of the 826 patients who underwent cardiovascular surgery (2.3 cases per 100 surgeries) during the study period. Infection was limited to soft tissue in 12, whereas deeper infection occurred in 7. Causative agents included *Staphylococcus aureus* (n = 11), coagulase-negative *Staphylococcus* (n= 5), and *Escherichia coli* (n = 2). One patient did not have a pathogen isolated. On multivariable analysis, duration of surgery (odds ratio, 1.4; 95% confidence interval, 1.2 to 1.8) and age younger than 1 month (odds ratio, 14; 95% confidence interval, 3.3 to 58.4) were independently associated with SSI.

The authors concluded that age younger than 1 month and a longer duration of surgery were independently associated with SSI during hospitalization after cardiovascular surgery in children.

FROM: Allpress AL, Rosenthal GL, Goodrich KM, Lupinetti FM, Zerr DM. Risk factors for surgical site infections after pediatric cardiovascular surgery. *Pediatr Infect Dis J* 2004;23:231-234.

Quality Improvement Program Reduces Nosocomial Infections in the Intensive Care Unit

Misset et al. from the Medical-Surgical Intensive Care Unit, Saint Joseph Hospital, Paris, France, conducted a study to assess the impact of a continuous quality improvement program on nosocomial infection rates. It was a prospective, single-center study in the medical-surgical intensive care unit of a tertiary-care center. They admitted 1,764 patients during the 5-year period of the study (1995 to 2000); 55% received mechanical ventilation and 21% died. The mean Simplified Acute Physiology II score was 37 ± 21 points and the mean length of stay in the intensive care unit was 9.7 ± 16.1 days. An infection control program based on international recommendations was implemented. The program was updated regularly according to infection and colonization rates and reports in the literature.

Prospective surveillance revealed the following rates per 1,000 procedure-days: ventilator-associated pneumonia, 8.7; urinary tract infection, 17.2; central venous catheter colonization, 6.1; and central venous catheter–related bacteremia, 2.0. Arterial catheter colonization did not occur. In the 5 years following implementation of the infection control program, there was a significant decline in the rate per patient-days of urinary tract infection, central venous catheter colonization, and central venous catheter–related bacteremia, but not ventilator-associated pneumonia. Between the first and the second 2.5-year period, the time to infection increased significantly for urinary tract infection and central venous catheter–related colonization.

The authors concluded that a continuous quality improvement program based on surveillance of nosocomial infections in a nonselected medical-surgical intensive care unit population was associated with sustained decreases in urinary tract infections and central venous catheter–related infections.

FROM: Misset B, Timsit JF, Dumay MF, et al. A continuous quality-improvement program reduces nosocomial infection rates in the ICU. *Intensive Care Med* 2004;30:395-400.