ICU
MANAGEMENT & PRACTICE

Delaying Surgical Procedures Increases Infection Risk and Healthcare Costs, New Research Finds

Delaying elective surgical procedures after a patient has been admitted to the hospital significantly increases the risk of infectious complications and raises hospital costs, according to the results of a new study in the December issue of the Journal of the American College of Surgeons.

The occurrence of infection following surgical procedures continues to be a major source of morbidity and expense despite extensive prevention efforts that have been implemented through educational programs, clinical guidelines, and hospital-based policies. The authors of the study queried a nationwide sample of 163,006 patients, 40 years of age and older, from 2003 to 2007. They evaluated patients who developed postoperative complications following one of three high-volume elective surgical procedures: 87,318 coronary artery bypass graft (CABG) procedures, 46,728 colon resections, and 28,960 lung resections.

The infectious complications evaluated included pneumonia, urinary tract infections, postoperative sepsis and surgical site infections. Researchers found that for each type of procedure, infection rates increased significantly from those performed on the day of admission to those performed one, two to five, and six to 10 days later. Total infection rates after CABG increased from 5.7 percent on the day of admission to 18.2 percent at six to 10 days. Similar increases were noted after colon resection (from 8.4 to 21.6 percent) and after lung resection (from 10.2 to 20.6 percent; $p < 0.0001$ for all trends). The delays significantly inflated total hospital costs. Mean cost significantly increased with delays for all procedures evaluated: CABG: $36,079 to $47,527; colon resections: $20,265 to $29,887; and lung resections: $26,323 to $30,571."Multiple factors can contribute to postsurgical complications, including age and coexisting health issues," said lead study author Todd R. Vogel, MD, MPH, FACS, assistant professor of surgery at the University of Medicine & Dentistry of New Jersey, Robert Wood Johnson Medical School, New Brunswick. "This analysis, however, confirms a direct correlation between delaying procedures and negative patient outcomes. As pay-for-performance models become increasingly prevalent, it will be imperative for hospitals to consider policies aimed at preventing delays and thereby reducing infection rates."

Factors associated with in-hospital procedure delays included advanced age (80 years and older), female gender, minority status, and existing health issues including congestive heart failure, chronic pulmonary disease, and renal failure. Postoperative complications most associated with delay in CABG and colon resection were urinary tract infections and pneumonia, while delayed lung resections increased rates of sepsis and pneumonia. Mortality was significantly greater when CABG procedures and lung resections were postponed more than five days.The study analysed data collected from the Healthcare Cost and Utilisation Project (HCUP) Nationwide Inpatient Sample (NIS), the largest publicly available all-payer inpatient care database in the U.S. and was sponsored by the Agency for Healthcare Research and Quality (AHRQ). The database includes all inpatient stay records from approximately 20 percent of U.S. community short-stay hospitals.

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Journal Reference:
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