Study examines sepsis and septic shock after surgery

July 19 2010

Sepsis and septic shock appear to be more common than heart attacks or pulmonary blood clots among patients having general surgery, and the death rate for patients with septic shock is approximately 34 percent within 30 days of operation, according to a report in the July issue of *Archives of Surgery*.

"Prevention of perioperative complications is a major focus in the care of the general-surgery patient," the authors write as background information in the article. In recent years, attention has been focused on prevention of venous thromboembolism (including post-operative deep vein thrombosis, or blood clots in the deep veins of the pelvis or extremities, and pulmonary embolism, or blood clots that travel to the lungs), myocardial infarction (heart attack) and surgical site infections. These efforts have resulted in awareness and reduction of these complications.

Sepsis, an infection that usually results from bacteria in the bloodstream and can result in failure of multiple organ systems, is another potentially preventable cause of illness and death in general surgery patients, the authors note. Laura J. Moore, M.D., and colleagues at The Methodist Hospital, Weill Cornell Medical College, Houston, reviewed the incidence, mortality rate and risk factors for sepsis in general surgery patients using data from the 2005 to 2007 American College of Surgeons National Surgical Quality Improvement Program.

Of 363,897 general surgery patients, sepsis occurred in 8,350 (2.3

percent), septic shock or life-threatening low blood pressure due to sepsis occurred in 5,977 (1.6 percent), pulmonary embolism occurred in 1,078 (0.3 percent) and heart attack occurred in 615 (0.2 percent). Death rates within 30 days were 5.4 percent for sepsis, 33.7 percent for septic shock, 9.1 percent for pulmonary embolism and 32 percent for heart attack.

The results suggest that sepsis continues to be a common and serious complication in general surgery patients and occurs more frequently than pulmonary embolism or heart attack. "Of note, septic shock occurs 10 times more frequently than myocardial infarction and has the same mortality rate; thus, it kills 10 times more people," the authors write. "Therefore, our level of vigilance in identifying sepsis and septic shock needs to mimic, if not surpass, our vigilance for identifying myocardial infarction and pulmonary embolism."

Risk factors for sepsis and septic shock included age older than 60, the need for emergency surgery and the presence of any co-occurring illness. Having such an illness increased the risk of sepsis and septic shock six-fold and the risk of dying within 30 days 22-fold.

"By identifying three major risk factors for the development of and death from sepsis and septic shock in general-surgery patients, we can heighten our awareness for sepsis and septic shock in these at-risk populations," the authors conclude. "The implementation of mandatory sepsis screening for these high-risk populations has resulted in decreased sepsis-related mortality within our institution. Further evaluation of the role of sepsis screening programs in other settings is critical and could significantly reduce sepsis-related mortality in general-surgery patients."

More information: Arch Surg. 2010;145[7]:695-700