Do-Not-Resuscitate Orders Associated With Poor Surgical Outcomes

Surgical patients with do-not-resuscitate (DNR) orders appear to be at higher risk for poor surgical outcomes, according to a report published online today by the Archives of Surgery, one of the JAMA/Archives journals. The study will appear in the August print issue of the journal.

"Do-not-resuscitate (DNR) orders preclude the use of cardiopulmonary resuscitation (CPR) in a clinically unresponsive, pulseless patient," according to background information provided by the authors. Approximately 70 percent of patients in the United States die with a DNR order. "Patients with a DNR order consent to a variety of surgical procedures ranging from palliative surgery to aggressive attempts at extension of life. The goals of surgical interventions in such patients include gaining 'additional time,' improving quality of life, decreasing pain, or treating isolated problems, such as fracture." The authors note that the use of DNR orders has been increasing and now up to 15 percent of patients with a DNR order have surgery.

Hadiza Kazaure, B.Sc., and colleagues from Yale University School of Medicine, New Haven, Conn., analyzed data from the more than 120 hospitals participating in the American College of Surgeons Quality Improvement Program from 2005 to 2008. There were 4,128 adult patients with DNR orders and 4,128 age-matched and procedure-matched patients without DNR orders. The main outcome measured were occurrence of one or more post-operative complication, re-operation, death within 30 days of surgery, total time in the operating room and length of stay. The majority of patients were elderly white women (average age, 79 years).

"The overall mortality rate was 15.3 percent," the authors report. "Compared with non-DNR patients, more than twice as many DNR patients died within 30 days of surgery (8.4 percent vs 23.1 percent). The DNR patients were more likely to die regardless of the urgency of the surgical procedure (35.5 percent vs. 17.8 percent and 16.6 percent vs. 5.5 percent for emergent and non-emergent procedures, respectively)." The authors found that patients with DNR orders were more likely to die after every procedure analyzed; after adjustment for multiple risk factors, a DNR order was associated with an increased odds of death. The authors note the overall complication rate was 28.6 percent. "The DNR patients had higher complication rates than non-DNR patients (31 percent vs. 26.4 percent)."

"The DNR patients may have surgery to gain 'additional time'; nevertheless, our study demonstrates that almost a quarter of DNR patients die within 30 days of surgery. Informed consent and elicitation of the goals of surgery, especially as they relate to overall goals of care, are essential for guiding surgical decisions involving DNR patients and their families. Issues pertaining to DNR status are complex, and they should be anticipated long before the 30-day period leading to an operation.

Additional research is needed to evaluate the decision making of DNR patients with respect to undergoing surgery, particularly in the non-emergent setting, and the impact of a pre-operative DNR order on post-operative surgical care and to determine the long-term outcomes of DNR patients by procedure," the authors conclude.

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