Sepsis guideline compliance improves, rate of death declines after educational effort

May 20 2008

A national educational effort in Spain to promote appropriate care for severe sepsis and septic shock was associated with a lower rate of sepsis deaths in hospitals and improved guideline adherence, although the improvement in compliance with some resuscitation procedures diminished after one year, according to a study in the May 21 issue of JAMA.

“Sepsis [a bloodstream infection] is one of the most prevalent diseases and one of the main causes of death among hospitalized patients. Severe sepsis accounts for 1 in 5 admissions to intensive care units (ICUs) and is a leading cause of death in noncardiac ICUs,” the authors write. In the United States, the mortality rate of severe sepsis is 28.6 percent, which represents 215,000 deaths annually.

The Surviving Sepsis Campaign (SSC) guidelines were developed as part of a plan to reduce severe sepsis mortality. For improving sepsis care, the SSC and the Institute for Healthcare Improvement recommend implementing a 6-hour resuscitation bundle (a number of procedures and treatments) as well as a first 24-hour management bundle. Concern exists that current guidelines are not consistently followed, possibly due to a lack of adequate education.

Ricard Ferrer, M.D., of the Universidad Autónoma de Barcelona, Spain and colleagues conducted a study to determine whether a national educational program based on the SSC guidelines could improve compliance with recommended processes of care in severe sepsis at 59

Spanish ICUs. All ICU patients were screened daily and enrolled if they fulfilled severe sepsis or septic shock criteria. A total of 854 patients were enrolled in the pre-intervention period (November-December 2005), 1,465 patients during the post-intervention period (March-June 2006), and 247 patients during the long-term follow-up period one year later (November-December 2006).

The educational program consisted of training physicians and nursing staff from the emergency department, wards, and ICU in the definition, recognition, and treatment of severe sepsis and septic shock as outlined in the guidelines. Treatment was organized in two bundles: a resuscitation bundle (six tasks to begin immediately and be accomplished within six hours) and a management bundle (four tasks to be completed within 24 hours).

Patients in the post-intervention group had a statistically significant lower risk of hospital mortality (44.0 percent vs. 39.7 percent) and 28-day mortality (36.4 percent vs. 31.1 percent) compared with the pre-intervention group. Compliance with the process-of-care variables improved after the intervention in the sepsis resuscitation bundle (5.3 percent vs. 10.0 percent) and in the sepsis management bundle (10.9 percent vs. 15.7 percent). The percentage of patients in whom care complied with all resuscitation and all management measures improved significantly after the educational program. During follow-up at one year, compliance with the resuscitation bundle returned to baseline but compliance with the management bundle and mortality remained stable with respect to the post-intervention period.

At the beginning of the study, only three process-of-care measurements had compliance rates higher than 50 percent. Compliance rates remained relatively low at the follow-up period. Hospital and ICU length of stay did not change after the intervention.

“The decreased mortality observed in our study and other studies might derive from better identification of patients with severe sepsis or from improved compliance with quality indicators, including earlier administration of antibiotics, or both,” the authors write.

Source: JAMA and Archives Journals