ICU
MANAGEMENT & PRACTICE

Study: Decrease in Risk of Death Among ICU Patients With Severe Sepsis

According to an Australian/New Zealand study, released early in JAMA to coincide with its presentation at the International Symposium on Intensive Care and Emergency Medicine, it appears that during the years 2000 to 2012, a reduction in the risk of death for critically ill patients suffering from severe sepsis or septic shock was registered. This finding was linked to changes in the plans of patients' discharge from the intensive care unit (ICU) to rehabilitation, other hospitals and home.

As mentioned in the article's background information, severe sepsis and septic shock are the largest cause of death in critically ill patients, and over the last two decades, multiple randomised controlled trials have tried to uncover innovative treatments to improve the patients' survival. It is not known whether progress has been achieved in the decrease of mortality.

The study was led by Kirsi-Maija Kaukonen, MD, PhD, EDIC, of Australia's Monash University in Melbourne, who, together with his colleagues investigated trends in mortality among over 100,000 patients with severe sepsis or septic shock from 171 ICUs in Australia and New Zealand during the years 2000 to 2012.

The team of researchers discovered a decrease from 35.0 percent to 18.4 percent during this time period in absolute mortality caused by severe sepsis, which represents an annual rate of absolute decrease of 1.3 percent, and a relative risk reduction of 47.5 percent. There was no differentiation in the annual decline in mortality between patients with severe sepsis/septic shock and those with all other diagnoses.

In their publication, the authors write that their study offer evidence that sepsis-related mortality has steadily decreased over time even after adjustments for illness severity, regional effects, center effect, hospital size and other key variables.

In conclusion, they state that it remains unclear whether it was any improvements in diagnostic procedures, broader-spectrum and earlier antibiotic treatment, or more aggressive supportive therapy according to severity of the disease that were contributing factors in this positive change. That an
equivalent improvement was registered in nonseptic patients underlines the theory which makes overall changes in ICU practice rather than in the management of sepsis the explanation of most of the findings.

In an accompanying editorial commenting on the study, Theodore J. Iwashyna, MD, PhD, of the University of Michigan, Ann Arbor, and Derek C. Angus, MD, MPH, of the University of Pittsburgh, (also Associate Editor, JAMA), write that the decline of severe sepsis mortality is at a level which no longer reflects the entire story of outcomes for patients with severe sepsis.
Despite this reduction being welcome, it highlights the urgent need for data on morbidity and longer-term outcomes. While confirmation of this mortality finding is awaited in other settings, the general challenge for research is clear with clinical trials needing to adopt longer-term morbidity measures, even if only to have the power to be able to detect feasible effect sizes in new trials.

To remain relevant, registries and benchmarking programs need to find low-cost ways to assess outcomes other than short-term mortality. Critical care is showing significant improvements for patients with severe sepsis and throughout the ICU, and in order to carry on such progress, researchers and clinicians must raise the standards and broaden measurement.

Source: JAMA

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