

Findings challenge common practice regarding glucose control for critically ill patients

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An analysis of randomized trials indicates that for critically ill adults, tight glucose control is not associated with a significantly reduced risk of death in the hospital, but is associated with an increased risk of hypoglycemia, calling into question the recommendation by many professional societies for tight glucose control for these patients, according to an article in the August 27 issue of *JAMA*.

In 2001, a randomized controlled trial (van den Berghe et al) showed that tight glucose control for critically ill surgical patients reduced hospital mortality by one-third. "Because few interventions in critically ill adult patients reduce mortality to this extent, the results of this trial were enthusiastically received and rapidly incorporated into guidelines," the authors write. Numerous organizations, including the American Diabetes Association and the American Association of Clinical Endocrinologists now recommend tight glucose control in all critically ill adults.

"These recommendations have led to worldwide adoption of tight glucose control in a variety of intensive care unit (ICU) settings." But some subsequent trials of tight glucose control in certain ICU settings have failed to show the mortality benefit, and have indicated an increased risk for hypoglycemia (abnormally low blood sugar level).

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Medical School, Hanover, N.H., and colleagues conducted a meta-analysis of 29 randomized controlled trials, examining the risks and benefits of tight glucose control (glucose goal less than 150 mg/dL) as compared with usual care in critically ill adults. The meta-analysis included data for 8,432 patients.

The researchers found that among these trials, there was no significant difference in hospital mortality between tight glucose control and usual care strategies (21.6 percent vs. 23.3 percent) and no significant difference in hospital mortality when stratified by surgical, medical, and medical-surgical ICU setting. Tight glucose control was not associated with a significantly decreased risk for new need for dialysis (11.2 percent vs. 12.1 percent), but was associated with a significantly decreased risk of septicemia (10.9 percent vs. 13.4 percent; generalized illness due to bacteria in the bloodstream). The risk of hypoglycemia was increased about 5-fold (13.7 percent vs. 2.5 percent).

"Given the overall findings of this meta-analysis, it seems appropriate that the guidelines recommending tight glucose control in all critically ill patients should be re-evaluated until the results of larger, more definitive clinical trials are available," the authors write.

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