

# High probability reported that balanced crystalloids in ICU cut mortality

December 27 2023, by Elana Gotkine

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For adults in the intensive care unit (ICU), there is a high probability that

use of balanced crystalloids decreases in-hospital mortality compared with saline, according to a review published online Nov. 30 in *The Lancet Respiratory Medicine*.

Fernando G. Zampieri, Ph.D., from HCor Research Institute in São Paulo, Brazil, and colleagues conducted a [systematic review](#) and meta-analysis to assess whether use of balanced solutions compared to saline reduces in-hospital mortality in adult ICU patients. Data were included from six eligible randomized controlled trials, with 34,685 participants: 17,407 assigned to receive balanced crystalloids and 17,278 to receive saline.

The researchers found that 16.8 and 17.3 percent of those assigned balanced solutions and saline, respectively, died in the hospital (odds ratio, 0.962; 95 percent credible interval, 0.909 to 1.019), with a posterior probability that balanced solutions reduced mortality of 0.895. Overall, 19.1 and 14.7 percent of the patients with traumatic brain injury assigned balanced solutions and saline, respectively, died (odds ratio, 1.424; 95 percent credible interval, 1.100 to 1.818); the probability of balanced solutions increasing mortality was 0.975 in patients with traumatic brain injury.

"Overall, there is a high probability that use of balanced solutions compared with saline in the ICU is associated with reduced in-hospital mortality and reduced treatment with renal replacement therapy, with the evidence being of moderate certainty," the authors write. "However, in patients with [traumatic brain injury](#), balanced solutions probably increase mortality."

Several authors disclosed ties to the pharmaceutical industry.

**More information:** Fernando G Zampieri et al, Balanced crystalloids versus saline for critically ill patients (BEST-Living): a systematic

review and individual patient data meta-analysis, *The Lancet Respiratory Medicine* (2023). [DOI: 10.1016/S2213-2600\(23\)00417-4](https://doi.org/10.1016/S2213-2600(23)00417-4)

Anna S Messmer et al, Normal saline versus balanced crystalloids: is it all about sodium?, *The Lancet Respiratory Medicine* (2023). [DOI: 10.1016/S2213-2600\(23\)00416-2](https://doi.org/10.1016/S2213-2600(23)00416-2)

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