

High-dose vitamin D for ICU patients who are vitamin D deficient does not improve outcomes

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Administration of high-dose vitamin D₃ compared with placebo did not reduce hospital length of stay, intensive care unit (ICU) length of stay, hospital mortality, or the risk of death at 6 months among patients with vitamin D deficiency who were critically ill, according to a study published in *JAMA*. The study is being posted early online to coincide with its presentation at the European Society of Intensive Care Medicine annual congress.

A high prevalence of low vitamin D levels has been confirmed in patients who are critically ill. Many studies suggest that a low vitamin D status is a significant factor associated with disease severity, mortality, or a shorter survival time in the ICU. However, it is unknown whether a low vitamin D status is an independent contributor to the risk of illness or death for these patients, according to background information in the article.

Karin Amrein, M.D., M.Sc., of the Medical University of Graz, Austria, and colleagues randomly assigned 492 adult ICU patients with vitamin D deficiency to receive either high-dose vitamin D₃ (n = 249) or a placebo (n = 243).

For the primary study outcome, length of hospital stay, the vitamin D₃ group was not significantly different from the [placebo group](#): 20.1 days vs 19.3 days. There was also no significant difference for length of ICU

stay: 9.6 days for the vitamin D3 group vs 10.7 days for the placebo group.

Among the patients in the vitamin D3 group, 28.3 percent died in the hospital compared with 35.3 percent in the placebo group. After 6 months, 35.0 percent of the patients had died in the vitamin D3 group and 42.9 percent in the placebo group.

Lower [hospital mortality](#) was observed in a subgroup of patients with severe vitamin D deficiency, but this finding should be considered hypothesis generating and requires further study, the authors write.

"Among patients with vitamin D deficiency who are critically ill, administration of high-dose vitamin D3 compared with placebo did not improve hospital length of stay, hospital mortality, or 6-month mortality."

More information: [DOI: 10.1001/jama.2014.13204](https://doi.org/10.1001/jama.2014.13204)

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