

Study compares treatments to improve kidney outcomes for patients with septic shock

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Early use of vasopressin to treat septic shock did not improve the number of kidney failure-free days compared with norepinephrine, according to a study appearing in the August 2 issue of *JAMA*.

In 2015, it was estimated that there were more than 230,000 cases of [septic shock](#), with more than 40,000 deaths in the United States each year. Norepinephrine is currently recommended as the first-line vasopressor (an agent that produces vasoconstriction and a rise in blood pressure) in septic shock; however, early vasopressin use has been proposed as an alternative.

Anthony C. Gordon, M.D., of Imperial College London, and colleagues randomly assigned [patients](#) who had septic shock requiring vasopressors despite fluid resuscitation within a maximum of 6 hours after the onset of shock to vasopressin and hydrocortisone (n = 101), vasopressin and placebo (n = 104), norepinephrine and hydrocortisone (n = 101), or norepinephrine and placebo (n = 103). The primary outcome was [kidney failure](#)-free days during the 28-day period after randomization, measured as (1) the proportion of patients who never developed kidney failure and (2) median number of days alive and free of kidney failure for patients who did not survive, who experienced kidney failure, or both. The trial was conducted at 18 intensive care units in the U.K.

A total of 409 patients ([median age](#), 66 years) were included in the study, with a median time to study drug administration of 3.5 hours after diagnosis of shock. The number of survivors who never developed kidney failure was 94 of 165 patients (57 percent) in the vasopressin group and 93 of 157 patients (59 percent) in the norepinephrine group. The median number of kidney failure-free days for patients who did not

survive, who experienced kidney failure, or both was 9 days in the vasopressin group and 13 days in the norepinephrine group.

There was less use of renal replacement therapy in the vasopressin group than in the norepinephrine group. There was no significant difference in mortality rates between groups. In total, 11 percent of patients had a serious adverse event in the vasopressin group vs 8 percent in the norepinephrine group.

"Among adults with septic shock, the early use of vasopressin compared with norepinephrine did not improve the number of kidney failure-free days. Although these findings do not support the use of vasopressin to replace norepinephrine as initial treatment in this situation, the confidence interval included a potential clinically important benefit for vasopressin, and larger trials may be warranted to assess this further," the authors write.

More information: *JAMA*, [DOI: 10.1001/jama.2016.10485](#)

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