

Combination antibiotic treatment does not result in less organ failure in adults with severe sepsis

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Frank M. Brunkhorst, M.D., of Friedrich-Schiller University, Jena, Germany, and colleagues conducted a study to compare the effect of the antibiotics moxifloxacin and meropenem with the effect of meropenem monotherapy on sepsis-related organ dysfunction. Early appropriate antimicrobial therapy leads to lower mortality rates associated with severe sepsis. The authors hypothesized that maximizing the potential benefit and appropriateness of initial antibiotics by using 2 antibiotics would improve clinical outcomes compared with monotherapy.

The trial included 298 patients who fulfilled usual criteria for severe sepsis or [septic shock](#) who were randomized to receive monotherapy, and 302 to receive combination therapy. The trial was performed in 44 intensive care units in Germany from October 2007 to March 2010, and the number of evaluable patients was 273 in the monotherapy group and 278 in the combination therapy group. The intervention was recommended for 7 days and up to maximum of 14 days after randomization or until discharge from the intensive care units or death, whichever occurred first.

Among 551 evaluable patients, there was no statistically significant difference in average Sequential Organ Failure Assessment (SOFA; degree of organ failure) score between the meropenem and moxifloxacin group and the meropenem alone group. "The rates for 28-day and 90-day mortality also were not statistically significantly different. By day 28, there were 66 deaths (23.9 percent) in the combination therapy group compared with 59 deaths (21.9 percent) in the monotherapy group. By day 90, there were 96 deaths (35.3 percent) in the combination therapy group compared with 84 deaths (32.1 percent) in the monotherapy group," the authors write.

"In conclusion, in this randomized multicenter trial of adult patients with severe sepsis or septic shock, empirical treatment with the combination of meropenem and moxifloxacin compared with meropenem alone did not result in less [organ failure](#)."

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