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Clinical Question: Determine whether early goal-directed therapy versus usual care decreases 90-day all-cause mortality among patients in the ED with septic shock.

Introduction: The management of sepsis involves early recognition, resuscitation with IV fluids and drugs, identification of potential source of infection, and timely administration of antibiotics. Despite the release of early goal-directed therapy and the Surviving Sepsis Campaign guidelines, there has been argument as to whether EGDT is truly beneficial. The incidence of severe sepsis is up to 0.3% in adults and the risk of death remains high.

Methods: A prospective, randomized, parallel-group multi-national study was conducted in both metropolitan and community facilities (51 centers). From October 5, 2008 through April 23, 2014, the study was conducted and included centers in Australia, New Zealand, Ireland, Hong Kong, and Finland. Inclusion criteria: patients 18 and above who presented within six hours of presentation, who had a suspected or confirmed infection, two plus criteria for SIRS and evidence of refractory hypotension (SBP<90 or MAP < 65 after a liter of fluid) or hypoperfusion (lactate 4.0 or higher). Randomization of a 1:1 ratio occurred within 2 hours after inclusion criteria determined. The EGDT group received arterial and central venous catheters. A total of 1600 patients were randomized, with 796 in the EGDT group and 804 received usual care.

Results: EGDT group participants received a larger average amount of IV fluids in the first 6 hours than those in the usual care group, were more likely to receive vasopressors, blood transfusions and dobutamine. 18.6% of patients in the EGDT group died within 90 days after randomization, and 18.8% died in the usual-care group. Differences in survival time, in-hospital mortality, duration of life support and hospital stay length were not statistically significant.

Conclusion: Early goal-directed therapy did not decrease 90-day mortality compared with usual care. Thus, it is questionable as to whether early goal-directed therapy should be standard of care.

Limitations: Took three hours for enrollment (randomization was delayed until antibiotics were administered), 18% mortality in both groups; the usual-care group incorporated some EGDT elements into the treatment which could have produced confounding factors
