Therapy helps improve outcomes for patients with severe sepsis

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A preliminary study suggests that a therapy for severe sepsis or septic shock that included the use of an antibiotic-based "hemoperfusion" device to remove toxic products of bacteria from the blood in addition to conventional treatment resulted in a reduced risk of death and appeared to improve blood circulation and reduce organ dysfunction, according to a report appearing in the June issue of *JAMA*.

Severe sepsis and septic shock are common problems in the intensive care unit and carry a high risk of death. Endotoxin is one of the principal components of a form of bacteria, with high levels of endotoxin activity associated with worse clinical outcomes. Septic shock of intra-abdominal origin is often associated with high endotoxin levels. "Thus, it represents a condition in which endotoxin-targeted therapy may be of particular benefit," the authors write. Polymyxin B fiber column is a medical device designed to reduce blood endotoxin levels in sepsis. Reducing circulating endotoxin levels with polymyxin B (an antibiotic) hemoperfusion (the removal of toxins from the blood; blood filtering) could potentially improve patient clinical outcomes, according to background information in the article.

Dinna N. Cruz, M.D., M.P.H., and Claudio Ronco, M.D., of St. Bortolo Hospital and the International Renal Research Institute Vicenza, Italy, and colleagues conducted a trial to determine whether polymyxin B hemoperfusion added to conventional medical therapy would improve clinical outcomes and survival compared with conventional therapy alone in patients with severe sepsis or septic shock who underwent emergency

surgery for intra-abdominal infection. The randomized controlled trial (RCT) was conducted at 10 Italian intensive care units. Patients (n = 64) were randomized to either conventional therapy (n = 30) or conventional therapy plus two sessions of polymyxin B hemoperfusion (n = 34).

"In this RCT of surgical patients with septic shock and severe sepsis induced by abdominal sepsis, polymyxin B hemoperfusion therapy was effective in improving 28-day [mortality was 32 percent (11/34) in the polymyxin B group vs. 53 percent (16/30) in the conventional therapy group] and hospital survival, blood pressure, vasopressor [an agent that increases blood pressure] requirement, and degree of organ failure … when added to conventional medical treatment," the authors write.

"Larger multicenter studies are indicated to confirm these encouraging findings in other patient populations. Furthermore, we advocate further studies to explore the use of newer assays for endotoxin activity both for patient selection, as well as guiding the number of hemoperfusion sessions."

Source: JAMA and Archives Journals (news : web)