

Sepsis-3: Impact on Previously Defined Septic Shock Patients



In a new analysis, 57% of patients meeting old definition for septic shock did not meet Sepsis-3 criteria. Although Sepsis-3 criteria identified a group of patients with increased organ failure and higher mortality, those patients who met the old criteria and not Sepsis-3 criteria still demonstrated significant organ failure and 14% mortality rate.

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"These results suggest that although Sepsis-3 identifies a group of patients at greater risk of worse clinical outcomes, it misses a large proportion of subjects with significant disease burden that may benefit from early resuscitative therapy," according to the study published in the journal *Critical Care Medicine*.

The Third International Consensus Definitions Task Force (Sepsis-3) recently recommended changes to the definitions of sepsis. The task force divides sepsis into two distinct categories: sepsis and septic shock. "Sepsis" is defined as "life-threatening organ dysfunction caused by a dysregulated host response to infection." The definition of "septic shock" was altered to "a subset of sepsis in which underlying circulatory and cellular metabolism abnormalities are profound enough to substantially increase mortality."

The impact of these changes remains unclear. In this present study, researchers sought to determine the outcomes of patients meeting Sepsis-3 septic shock criteria versus patients meeting the "old" (1991) criteria of septic shock only. They performed a secondary analysis of two previously completed clinical trials of patients with severe sepsis and septic shock. Both trials were performed in large, academic emergency departments (EDs) in the United States.

Prospectively collected data from the two trials were combined for analysis. Patients were categorised as meeting Sepsis-3 criteria of septic shock and those who met only the old criteria for septic shock. Patients were categorised as Sepsis-3 septic shock if they demonstrated hypotension, received vasopressors, and exhibited a lactate greater than 2 mmol/L. The researchers compared in-hospital mortality in patients who met the old definition only with those who met the Sepsis-3 criteria.

Overall, 467 patients were included in the present analysis. Two hundred (42.5%) met Sepsis-3 criteria, whereas 270 (57.4%) met only the old definition. Patients meeting Sepsis-3 criteria demonstrated higher severity of illness by Sequential Organ Failure Assessment score (9 vs. 5; $p < 0.001$) and mortality (29% vs. 14%; $p < 0.001$). Subgroup analysis of 127 patients meeting only the old definition demonstrated significant mortality benefit following implementation of a quantitative resuscitation protocol (35% vs. 10%; $p = 0.006$).

"These data are not to suggest that the 1991 and 2001 consensus definitions are not without their limitations. It is well known that SIRS [systemic inflammatory response syndrome] criteria function poorly when deployed in a clinical environment, demonstrating limitations in both sensitivity but more critically specificity for the diagnosis of sepsis. It is reasonable to assume that a diagnosis, based on these criteria, would likewise lead to an overly sensitive definition of sepsis and septic shock. This may lead to unnecessary treatments of patients unlikely to benefit and potentially at increased risk of harm from overly aggressive care," the study authors note.

Source: [Critical Care Medicine](#)
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