

# Sepsis-3 criteria 'preferable' in prognostication of critically ill patients

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For almost 30 years, diagnostic criteria for sepsis has used the Systemic Inflammatory Response Syndrome (SIRS) criteria in those with suspected infection, with presence of two or more criteria being diagnostic of sepsis. Recently, the Third International Consensus Definitions for Sepsis and Septic Shock (Sepsis-3) re-evaluated these definitions and introduced the Sequential (Sepsis-related) Organ Failure Assessment (SOFA) score, with an increase of  $\geq 2$  SOFA score points being diagnostic of sepsis and indicative of increased risk of death.

Rapid response teams (RRT) play an important role in the early identification of sepsis in hospitalized patients. The use of this new Sepsis-3 clinical criteria, therefore, has potentially important implications; however, little is known regarding the prognostic accuracy of these criteria within this population. Researchers from the University of Ottawa sought to compare the prognostic accuracy of the Sepsis-3 septic [shock](#) criteria with the SIRS-based septic shock criteria for prediction of in-hospital mortality among patients hospitalized with suspected infection, receiving a RRT assessment for acute deterioration.

The study collected patient registry data from two hospitals within the Ottawa Hospital network between May 1, 2012, and May 31, 2015, as well as hospitalized patients with suspected infection as seen at the time of RRT assessment. Using the data, researchers compared Sepsis-3 criteria against SIRS-based criteria to predict and determine the likelihood of in-hospital mortality within patients.

Overall, of the 1,708 patients, 418 met the Sepsis-3 septic shock criteria, and 545 met the SIRS-based septic shock criteria. Patients who met the Sepsis-3 septic shock criteria showed a 40.9 percent higher rate of in-hospital mortality, 99.5 percent rate of ICU admission and 66.3 percent discharge rate compared with long-term care than

patients who met the SIRS-based septic shock criteria. In addition, researchers examined the prognostic accuracy of the quick Sequential Organ Failure Assessment (qSOFA) in comparison with the SIRS criteria in order to predict in-hospital mortality among patients with suspected infections assessed by the RRT. Based on qSOFA, patients who met Sepsis-3 criteria had a 64.9 percent and 92.2 percent prediction of in-hospital mortality, while SIRS had a qSOFA score of 91.6 percent and 23.6 percent respectively. Based on these results, Sepsis-3 criteria may be preferred in the prognostication and disposition of critically ill patients.

"We found that patients meeting the Sepsis-3 septic shock criteria were at significantly higher risk of in-hospital mortality, ICU admission and discharge to long-term care as compared with the previous SIRS-based septic shock criteria. Patients meeting the SIRS-based septic shock criteria when assessed by the RRT did not have significantly increased odds of mortality compared with those not meeting the criteria," Dr. Shannon Fernando, lead researcher. "When comparing qSOFA and SIRS, qSOFA was found to have poor sensitivity, but high specificity, whereas SIRS had high sensitivity, but poor specificity for prediction of in-hospital [mortality](#) in this population. Taken together, this work provides insight into the prognostic accuracy and thus clinical utility of the new Sepsis-3 criteria in assessment of hospitalized patients with acute deterioration from suspected infection, with implications for clinicians who assess such [patients](#)."

Provided by American College of Chest Physicians

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