ICU
MANAGEMENT & PRACTICE

Intensive Care Infection Score Fast and Cost-Effective

The intensive care infection score (ICIS) has potential as a biomarker for infection, according to a study published in critical care. is derived from 5 blood-cell derived parameters that characterise the innate immune response in routine blood samples.

Patrick J van der Geest, Erasmus Medical Center, the Netherlands, and colleagues report on the results of the clinical trial *Procalcitonin to Guide Obtaining Bloodcultures in the ICU Intensive Care Infection Score*. The trial compared the predictive value of the ICIS with that of the white blood cell count (WBC), C-reactive protein (CRP) and procalcitonin (PCT) for infection and its severity in critically ill patients. The findings are published in Critical Care.

301 critically ill patients with a suspected infection for which blood cultures were taken were enrolled in a multicentre, cluster-randomised, crossover study between January 2013 and September 2014. Blood was taken at the same time for WBC, ICIS, CRP and PCT measurements in the control study periods.

Patients were divided into groups of increasing likelihood of infection and invasiveness: group 1 without infection or with possible infection irrespective of cultures (149 patients); group 2 with probable or microbiologically proven local infection without blood stream infection (BSI); group 3 with BSI irrespective of local infection
- groups 2 and 3 (152 patients).

See Also: Biomarker Guided Antibiotic Therapy: What's New?

The lung and abdomen were the most frequent sources of infection.

CRP, PCT and ICIS were higher in groups 2 and 3 than group 1. The area under the receiver operating characteristic curve (AUROC) for the prediction of infection was 0.70 for CRP, 0.71 for PCT and 0.73 for ICIS ($P < 0.001$). For the prediction of septic shock the AUROC was 0.73 for CRP, 0.85 for PCT and 0.76 for ICIS. These AUROC did not differ from each other.

The researchers conclude that ICIS is non-inferior to CRO and PCT in predicting infection in critically ill patients, with the advantage that it can yield results in 15 minutes with no need for extra blood sampling, thus potentially reducing costs.

Image credit: Wikimedia Commons

Published on : Wed, 3 Aug 2016