Пресепсин пригоден для ранней диагностики сепсиса согласно новому международному определению СЕПСИС-3

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Diagnostic value of presepsin for sepsis in the new definitions.

Background: The third international consensus presented the new definitions for sepsis and septic shock, but there is little discussion about exactly how to determine whether infection is suspected. Presepsin is currently under investigation in clinical practice as a biomarker of bacterial infections.

Objective: The aim of this study was to investigate the diagnostic value of presepsin compared to other diagnostic makers of sepsis in the new definitions.

Methods: Ninety one patients with SOFA score of 2 or more were included. We divided patients into three groups based on their clinical features: non-sepsis group (n=29), sepsis group (n=29) and septic shock group (n=33). Blood samples for biomarker measurements of presepsin, procalcitonin (PCT), C reactive protein (CRP) and white blood cells (WBC) were collected at days 1, 3 and 7 after clinical onset of a SOFA score of 2 or more.

Results: Both PCT and presepsin concentrations were significantly higher in both sepsis and septic shock groups compared to non-sepsis group [PCT (median, ng/mL): 0.6 vs. 1.4 vs. 11.0、$p<0.001$; presepsin (median, pg/mL): 349 vs. 817 vs. 1217、$p<0.001$; non-sepsis vs. sepsis vs. septic shock group].

Since the area under the curves (AUC) of the presepsin to distinguish sepsis including septic shock or non-sepsis at day1 was 0.88, and significantly higher than that of PCT, CRP, or WBC, indicating that presepsin levels have valuable capacity to diagnose of sepsis or non-sepsis in the early phase. The cutoff value for presepsin was 508 pg/ml with the 87% sensitivity and 86% specificity.

On the other hand, the cutoff value for PCT was 1.5 ng/ml, corresponding to 68% sensitivity and 86% specificity. In addition, the logistic regression analysis revealed that high presepsin levels (≥500 pg/ml) were significantly associated with diagnosis of sepsis (odds ratio: 68.89, 95% CI: 12.05- 393.98, $p<0.001$).

Conclusion: Presepsin is useful in diagnosis of whether sepsis or non-sepsis patients with 2 or more than SOFA points.