

Abstract

Background: Hassling clinical features had been found in sepsis and non-infectious systemic inflammatory response syndrome (SIRS), with neither sensitive nor specific physiologic parameters and time-exhausting microbiological data, which may also be inconclusive. Aim of the work: To compare the clinical informative value of procalcitonin (PCT) and C-reactive protein (CRP) plasma concentration in the early detection of sepsis and to relate these biomarkers to other scoring systems. Patients and method: One hundred thirty-eight patients 77 males and 61 females with a mean age of 55.6+19 years were enrolled in our study. All were subjected to PCT, CRP, and sequential organ failure assessment (SOFA) scores daily for 7 days (day 1 starting symptoms). Blood samples were collected before starting antibiotics. The acute physiology and chronic health evaluation (APACHE) II score was used to determine the initial severity of illness. All patients were followed up for 28 days and were assigned to three groups: group I: SOFA 2–7, group II: SOFA 8–10, and group III: SOFA \geq 11.

Results: Underlying clinical diagnosis revealed pneumonia in 72 patients, urinary tract infections in 8, bloodstream infection in 4, and other infections in 23, while infection could not be traced in 25 patients. The mean PCT was 3 ng/ml (95% CI 1–4), 12 ng/ml (95% CI 9.1–14), and 19 ng/ml (95% CI 16.3–22.3) in groups I, II, and III respectively, with a statistically significant difference in the mean PCT level among the 3 groups ($P < 0.0001$). On the other hand, CRP mean level did not significantly differentiate between the groups (147.1 mg/L in group II, which was even higher than the level of group III, 138.4 mg/L). We found statistically significant positive correlation between PCT and APACHE II scores by using a Spearman correlation test that could not be achieved between CRP and APACHE II.

Conclusion: Given PCT's patronage display over a wide spectrum of insults, it seems to do better than CRP in predicting the SOFA groups.

Keywords: sepsis, SOFA, procalcitonin, CRP, APACHE II score