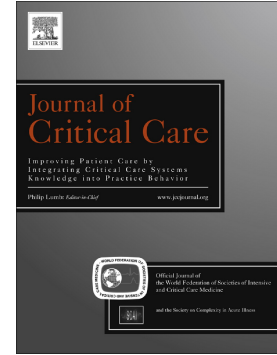


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The Role of Propionic Acid at Diagnosis Predicts Mortality in Patients with Severe Sepsis

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Purpose: This study aims to assess the diagnostic and prognostic value of propionic acid in patients with severe sepsis on a medical intensive care unit (ICU).

Methods: Serum propionic acid and clinical common cytokines levels were measured within 24 hours after the diagnosis of sepsis, and the Acute Physiology and Chronic Health Evaluation II score, Sequential Organ Failure Assessment score, and Mortality were recorded in ICU. A 28-day follow-up was performed for all patients.

Results: A total of 118 patients were enrolled in this study. The propionic acid was higher in patients with severe sepsis compared with sepsis. Multivariate logistic regression analysis showed that propionic acid was independent predictor of severe sepsis (odds ratio: 1.859; 95% confidence interval: 1.342-2.576; $P < 0.001$) and 28-day mortality (odds ratio: 1.259; 95% confidence interval: 1.046-1.514; $P = 0.015$). The receiver operating characteristic curve (AUC) analysis showed the areas under of propionic acid on ICU admission day for predicting severe sepsis and 28-day mortality were 0.85 and 0.739 respectively. Using a PA cutoff of 0.095 and 0.139 for predicting severe sepsis and 28-day mortality, the sensitivity was 85.5% and 67.44%,

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