Abstract

Validation of Sepsis-3 Criteria in Referral Hospital in Indonesia: A Prospective Study in Lower-Middle Income Country

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Objectives:
This study aims to prospectively assess the performance of sepsis-3 criteria in predicting in-hospital mortality and compare it with other established sepsis diagnosis criteria (Systemic Inflammatory Response Syndrome [SIRS] criteria, 2001 criteria, and quick Sequential Organ Failure Assessment [qSOFA]) in the emergency room of national referral hospital in Indonesia.

Methods:
Prospective cohort study was conducted consecutively between March and December 2017 in suspected infection adult (aged 18 years and older) patients visiting Emergency Room of Cipto Mangunkusumo National Hospital, a national 900-beds hospital. All variables from previous and new sepsis diagnosis criteria were collected. Patients were followed up until hospital discharge or death. In-hospital mortality was compared across categories of each sepsis diagnosis criteria. Area under the receiver operating characteristic curve (AUROC) of each diagnosis criteria was evaluated.

Results:

Of 3026 patients screened, 1213 met the inclusion criteria and were included in the analysis. Median age was 51 years (interquartil range [IQR] 18-93 years). In-hospital mortality was 34.7%. Median total of SIRS criteria, 2001 criteria, increment of SOFA score (sepsis-3) and qSOFA fulfilled were 3 (IQR 2-4), 2 (IQR 1-3), 2 (IQR 1-5), 2 (IQR 1-2) respectively. The sepsis-3 criteria performed better than qSOFA, 2001 criteria and SIRS criteria in predicting in-hospital mortality, with an AUROC of 0.75 (95% CI 0.72-0.78), 0.70 (95% CI 0.67-0.74), 0.67 (95% CI 0.63-0.70), 0.56 (95% CI 0.53-0.60) for sepsis-3, qSOFA, 2001 criteria and SIRS criteria respectively. The best increment of SOFA score cut off for predicting in-hospital mortality was >=3, with sensitivity 75.5% (95% CI 71.1-79.6%) and specificity 63.9% (95% CI 60.4-67.2%).

Conclusions:

In patients presenting with suspected infection in Indonesia, the use of sepsis-3 diagnosis criteria results in best prognostic accuracy compared with other established sepsis diagnostic criteria.