

# Establishing a Clinical Decision Rule of Severe Acute Respiratory Syndrome at the Emergency

Department

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摘要

## Abstract

**STUDY OBJECTIVE:** In the absence of reliable rapid confirmatory tests during severe acute respiratory syndrome (SARS) epidemics, we designed a 2-phase cohort study to establish a scoring system for SARS and to evaluate whether it could improve the sensitivity and specificity of the World Health Organization (WHO) criteria. **METHODS:** According to the clinical characteristics and initial laboratory findings of 175 suspected cases defined by the WHO criteria (20 confirmed as cases of SARS) in 3 university teaching hospitals in Taipei between March 1 and April 20, 2003, the scoring system for SARS was designed by multivariate analysis and stepwise logistic regression as the simple arithmetic sum of point values assigned to 7 parameters. We thereafter applied the scoring system for SARS to the consecutive 232 patients (the validation group) who met the WHO criteria of suspected cases from April 21 to May 22, 2003. Final diagnosis of SARS was determined by the results of real-time polymerase chain reaction and paired serum. **RESULTS:** The scoring system for SARS was defined as radiographic findings of multilobar or bilateral infiltrates (3 points), sputum monocyte predominance (3 points), lymphocytopenia (2 points), history of exposure (1 point), lactate dehydrogenase more than 450 U/L (1 point), C-reactive protein more than 5.0 mg/dL (1 point), and activated partial prothrombin time more than 40 seconds (1 point). Of the validation group, 60 patients (group A) were confirmed as having cases of SARS, and the other 172 (group B) patients tested negative for SARS. The total points of the scoring system for SARS at initial presentation were significantly higher in the SARS group (median 9; range 6 to 11) than in the non-SARS group (median 4; range 3 to 7;  $P < .001$ ). At the cutoff value of 6 points, the sensitivity and specificity of the scoring system for SARS in diagnosing SARS were 100% and 93%, respectively. The positive and negative predictive values of the scoring system for SARS were 83% and 100%, respectively. **CONCLUSION:** The scoring system for

SARS can provide a rapid and reliable clinical decision to help emergency physicians detect cases of SARS more accurately in the endemic area.