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A new method to predict hospital mortality in severe community acquired pneumonia

Background & Aims: The aim of this study is to develop a new method that is able to accurately predicate the 28 day hospital mortality in patients with severe community acquired pneumonia (SCAP) at an early stage.

Methods: We selected 37348 SCAP patients in ICU from 173 hospitals during 2011.1-2013.12. The predictive factors for 28 day hospital mortality was evaluated retrospectively. All cases underwent intensive care, blood routine, blood biochemical tests and arterial blood gas analysis. Under the classification and regression tree (CART) analysis, a new clinical scoring system was developed for early prediction in SCAP patients. The receiver-operating characteristic (ROC) curve was plotted to calculate the area under the receiver operating characteristic curve (AUC).

Results: A novel clinical model named CLCGH scoring system, including serum creatinine (Cr) >259.5 $\mu\text{mol/L}$, leukocyte (WBC) $>17.35 \times 10^9/\text{L}$, C-reactive protein (CRP) >189.4 $\mu\text{g/ml}$, GCS ≤ 9 and serum $\text{HCO}_3^- \leq 17.65$ mmol/L , was carried out and each index was an independent factor for hospital mortality in


SCAP. In validation cohort, the AUC of the new scoring system was 0.889 for prediction of hospital mortality, which was similar to SOFA score 0.877, APACHE score 0.864, and was better than the PSI score 0.761 and CURB-65 score 0.767.

Conclusions: The new scoring system CLCGH is an efficient, accurate and objective method to predicate the early hospital mortality among SCAP patients.

Speaker Biography

Xin Wang has his expertise in evaluation and passion in improving the health and well-being. His open and contextual evaluation based on responsive constructivists creates new pathways for improving healthcare. He and his staff have built this CLCGH scoring system model after years of experience and practice in research, evaluation, teaching and administration both in hospital and education institutions. Also, he has abundant clinical experience in clinical field especially in the area of acute abdominal disease and physical medicine disorder. The new scoring system CLCGH is an efficient, accurate and objective method to predicate the early hospital mortality among SCAP patients. The CART analysis is a methodology that utilizes the previous generations of evaluation, measurement, description and judgment. His research allows for value-pluralism. His approach and study achievement is responsive to all stakeholders and has a different way of focusing.

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