

Risk score may predict critical illness at COVID-19 admission

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A risk score based on 10 factors can predict the risk for developing

critical illness at COVID-19 admission, according to a study published online May 12 in *JAMA Internal Medicine*.

Wenhua Liang, M.D., from The First Affiliated Hospital of Guangzhou Medical University in China, and colleagues developed and validated a clinical score at hospital admission for predicting COVID-19 patients who will develop [critical illness](#). Data were included from a retrospective cohort of 1,590 COVID-19 patients from 575 hospitals in China as of Jan. 31, 2020. Accuracy of the score was measured by the area under the receiver operating characteristic curve (AUC). The score was validated using data from four additional cohorts with 710 patients.

The researchers identified 10 variables as independent predictive factors from 72 potential predictors, and they were included in the [risk score](#): chest radiographic abnormality (odds ratio, 3.39), age (odds ratio, 1.03), hemoptysis (odds ratio, 4.53), dyspnea (odds ratio, 1.88), unconsciousness (odds ratio, 4.71), number of comorbidities (odds ratio, 1.60), cancer history (odds ratio, 4.07), neutrophil-to-lymphocyte ratio (odds ratio, 1.06), lactate dehydrogenase (odds ratio, 1.002), and direct bilirubin (odds ratio, 1.15). In the development and validation cohorts, the mean AUC was 0.88 for each. The score has been translated into a freely available online risk calculator.

"Estimating the risk of critical [illness](#) could help identify patients who are and are not likely to develop critical illness, thus supporting appropriate treatment and optimizing the use of medical resources," the authors write.

More information: [Abstract/Full Text](#)

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