Predictors of mortality for patients with COVID-19 pneumonia caused by SARS-CoV-2: a prospective cohort study

Rong-Hui Du1,3, Li-Rong Liang2,3, Cheng-Qing Yang1,3, Wen Wang2,3, Tan-Ze Cao1, Ming Li1, Guang-Yun Guo1, Juan Du1, Chun-Lan Zheng1, Qi Zhu1, Ming Hu1, Xu-Yan Li2, Peng Peng1,4 and Huan-Zhong Shi2,4

Affiliations: 1Dept of Respiratory and Critical Care Medicine, Wuhan Pulmonary Hospital, Wuhan, China. 2Dept of Respiratory and Critical Care Medicine, Beijing Chao-Yang Hospital, Capital Medical University, Beijing, China. 3These authors contributed equally. 4These authors are joint principal authors.

Correspondence: Huan-Zhong Shi, Dept of Respiratory and Critical Care Medicine, Beijing Chao-Yang Hospital, Capital Medical University, 8 Gongti Nanlu, Chao-Yang District, Beijing 100020, China. E-mail: shihuanzhong@sina.com

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These data showed that age \( \geq 65 \) years, pre-existing concurrent cardiovascular or cerebrovascular diseases, CD3+CD8+ T-cells \( \leq 75 \) cells\( \cdot \mu L^{-1} \) and cardiac troponin I \( \geq 0.05 \) ng\( \cdot mL^{-1} \) were four risk factors predicting high mortality of COVID-19 pneumonia patients https://bit.ly/2Rh6Nqv


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ABSTRACT The aim of this study was to identify factors associated with the death of patients with COVID-19 pneumonia caused by the novel coronavirus SARS-CoV-2.

All clinical and laboratory parameters were collected prospectively from a cohort of patients with COVID-19 pneumonia who were hospitalised to Wuhan Pulmonary Hospital (Wuhan City, Hubei Province, China) between 25 December 2019 and 7 February 2020. Univariate and multivariate logistic regression was performed to investigate the relationship between each variable and the risk of death of COVID-19 pneumonia patients.

In total, 179 patients with COVID-19 pneumonia (97 male and 82 female) were included in the present prospective study, of whom 21 died. Univariate and multivariate logistic regression analysis revealed that age \( \geq 65 \) years (OR 3.765, 95% CI 1.146–17.394; \( p=0.023 \)), pre-existing concurrent cardiovascular or cerebrovascular diseases (OR 2.464, 95% CI 0.755–8.044; \( p=0.007 \)), CD3+CD8+ T-cells \( \leq 75 \) cells\( \cdot \mu L^{-1} \) (OR 3.982, 95% CI 1.552–14.006; \( p<0.001 \)) and cardiac troponin I \( \geq 0.05 \) ng\( \cdot mL^{-1} \) (OR 4.077, 95% CI 1.166–14.253; \( p=0.001 \)) were associated with an increase in risk of mortality from COVID-19 pneumonia. In a sex-, age- and comorbid illness-matched case-control study, CD3+CD8+ T-cells \( \leq 75 \) cells\( \cdot \mu L^{-1} \) and cardiac troponin I \( \geq 0.05 \) ng\( \cdot mL^{-1} \) remained as predictors for high mortality from COVID-19 pneumonia.

We identified four risk factors: age \( \geq 65 \) years, pre-existing concurrent cardiovascular or cerebrovascular diseases, CD3+CD8+ T-cells \( \leq 75 \) cells\( \cdot \mu L^{-1} \) and cardiac troponin I \( \geq 0.05 \) ng\( \cdot mL^{-1} \). The latter two factors, especially, were predictors for mortality of COVID-19 pneumonia patients.