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

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These data showed that age ⩾65 years, pre-existing concurrent cardiovascular or cerebrovascular diseases, $CD3^+CD8^+$ T-cells ⩽75 cells·μL^{-1} and cardiac troponin I ⩾0.05 ng·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 ⩾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 ⩽75 cells·μL^{-1} (OR 3.982, 95% CI 1.132–14.006; p<0.001) and cardiac troponin I ⩾0.05 ng·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 ⩽75 cells·μL^{-1} and cardiac troponin I ⩾0.05 ng·mL^{-1} remained as predictors for high mortality from COVID-19 pneumonia.

We identified four risk factors: age ⩾65 years, pre-existing concurrent cardiovascular or cerebrovascular diseases, $CD3^+CD8^+$ T-cells ⩽75 cells·μL^{-1} and cardiac troponin I ⩾0.05 ng·mL^{-1}. The latter two factors, especially, were predictors for mortality of COVID-19 pneumonia patients.