

# Prognostic value of NT-proBNP in patients with severe COVID-19

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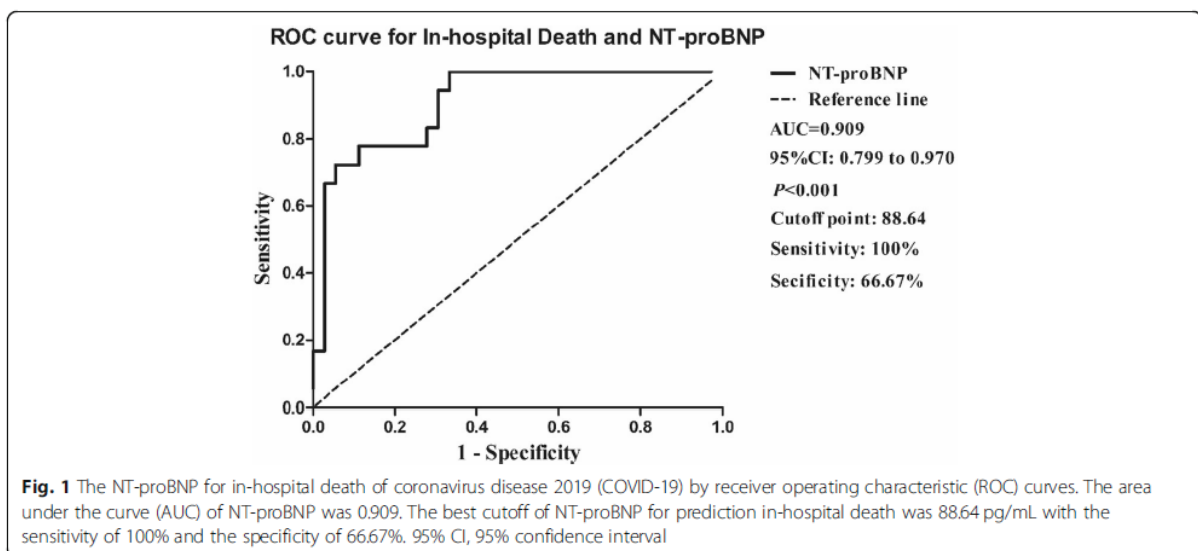
## Abstract

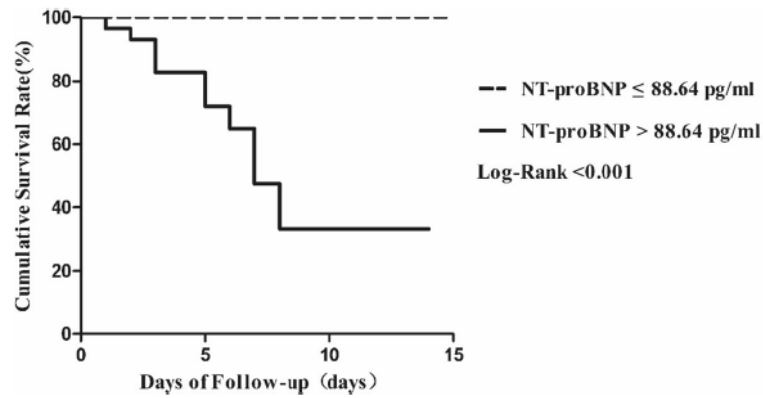
**Background:** The outbreak of coronavirus disease 2019 (COVID-19) caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) in China has been declared a public health emergency of international concern. The cardiac injury is a common condition among the hospitalized patients with COVID-19. However, whether N terminal pro B type natriuretic peptide (NT-proBNP) predicted outcome of severe COVID-19 patients was unknown.

**Methods:** The study initially enrolled 102 patients with severe COVID-19 from a continuous sample. After screening out the ineligible cases, 54 patients were analyzed in this study. The primary outcome was in-hospital death defined as the case fatality rate. Research information and following-up data were obtained from their medical records.

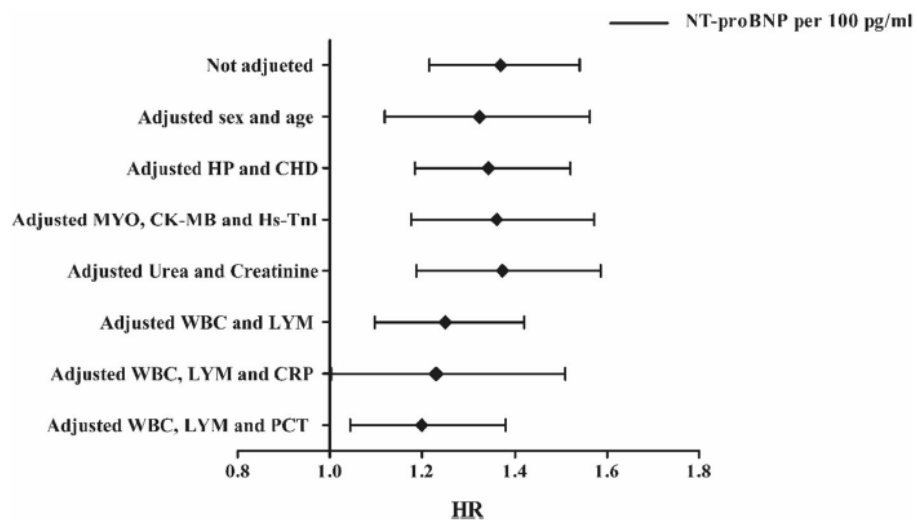
**Results:** The best cut-off value of NT-proBNP for predicting in-hospital death was 88.64 pg/mL with the sensitivity for 100% and the specificity for 66.67%. Patients with high NT-proBNP values (> 88.64 pg/mL) had a significantly increased risk of death during the days of following-up compared with those with low values ( $\leq$ 88.64 pg/mL). After adjustment for potential risk factors, NT-proBNP was independently correlated with in-hospital death.

**Conclusion:** NT-proBNP might be an independent risk factor for in-hospital death in patients with severe COVID-19.





**Fig. 2** Kaplan-Meier plots showing the cumulative survival rate of COVID-19 patients who were stratified into two groups according to plasma NT-proBNP cutoff point at baseline. Dotted line, NT-proBNP  $\leq$ 88.64 pg/ml,  $n = 24$ ; Solid line, NT-proBNP  $>$  88.64 pg/ml,  $n = 30$ ; log-rank test for trend,  $P < 0.001$ )



**Fig. 3** Forest plots of multivariate Cox proportional-hazards regression analyzing the effect of baseline variables on in-hospital death. HP, hypertension; CHD, coronary heart disease; MYO, myoglobin; CK-MB, creatine kinase-MB; Hs-TnI, high-sensitivity troponin-I; WBC, white blood cell; LYM, lymphocytes; CRP, c-reactive protein; PCT, procalcitonin; HR, hazards ratio