

Mean serum D-dimer level to predict in-hospital mortality in Covid-19 patients

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Background: The prognostic effect of the mean serum D-dimer levels, which was calculated from the first five hospitalization days of the patients, have not been elucidated. We aim to evaluate the effect of mean D-dimer level in regard to in-hospital mortality in patients hospitalized due to COVID-19 infection.

Material and methods: In this observational retrospective study, we examined the in-hospital prognostic value of mean D-dimer (D-dimer first day + D-dimer third day + D-dimer fifth day) / 3 on 240 consecutive adult patients with COVID-19. Patients were stratified into tertiles according to their mean D-dimer starting from the lowest one. In-hospital mortality rates were compared between tertiles and the power of the mean D-dimer level was also presented by a receiver operating curve (ROC) analysis.

Results: After adjustment for confounding baseline variables, mean D-dimer in tertile 3 was associated with an 4.2-fold hazard ratio of in-hospital mortality (OR: 4.2, 95% CI 1.8–20.1, $p < 0.001$). A ROC analysis revealed that the optimal cut-off value of the mean D-dimer to predict in-hospital mortality was 779 $\mu\text{g/L}$ with 77% sensitivity and 83% specificity (AUC: 0.87; 95% CI: 0.81–0.94; $p < 0.001$).

Conclusion: Patients with a higher mean D-dimer level should be followed-up more closely since they may be a candidate for a more aggressive treatment modality, such as biologic agents or convalescent plasma.

Table 1 Logistic regression models for in-hospital mortality by mean D-Dimer level tertiles through index hospitalization period

	Mean D-Dimer level through index hospitalization period		
	T1, n=80	T2, n=80	T3, n=80
In-hospital mortality			
Number of patients	0	3	19
Case rate, %	0.0	3.8	23.8
In-hospital mortality, OR (95% CI)			
Model 1: unadjusted	1 [Reference]	4.7 (1.5 – 8.1)	7.9 (2.2 – 28.2)
Model 2: adjusted for all covariates ^a	1 [Reference]	2.8 (1.2 – 6.9)	5.2 (1.8 – 20.1)

Abbreviations: CI, confidence interval; OR, odds ratio.

^aOnly parameters that reached statistical significance at multivariable analysis were: age, white blood cells, lactate dehydrogenase and lymphocytes and troponin.

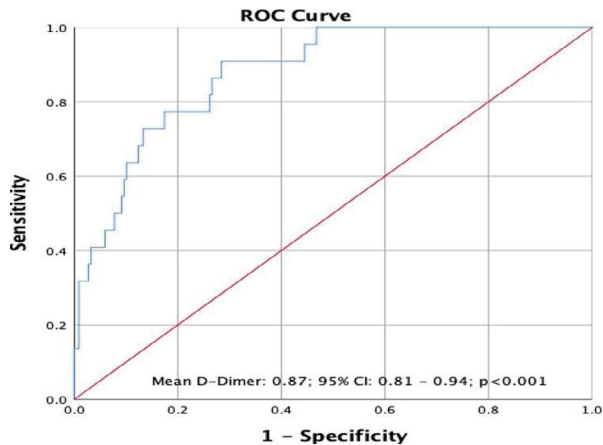


Figure 1