

## Predicting COVID-19 Severity Using a Simple Parameters in Resource-Limited Settings

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**Abstract :** Objective: To determine the simple laboratory parameters to predict disease severity among COVID-19 patients in resource-limited settings. Material and methods: A retrospective cohort study was conducted at Nakhonpathom Hospital, a 722-bed tertiary care hospital, with an average of 50,000 admissions per year, during April 15 and May 15, 2021. Eligible patients were adults aged  $\geq 15$  years who were hospitalized with COVID-19. Baseline characteristics, comorbid conditions and laboratory findings at admission were collected. Predictive factors for severe COVID-19 infection were analyzed. Result: There were 207 patients (79 male and 128 female) and the mean age was 46.7 (16.8) years. Of these, 39 cases (18.8%) were severe and 168 (81.2%) cases were non-severe. Factors associated with severe COVID-19 were neutrophil to lymphocyte ratio  $\geq 4$  (OR 8.1, 95%CI 2.3-20.3,  $P < 0.001$ ) and C-reactive protein to albumin ratio  $\geq 10$  (OR 3.49, 95%CI 1.3-9.1,  $p 0.01$ ). Conclusions: Complete blood counts, C-reactive protein and albumin are simple, inexpensive, widely available tests and can be used to predict severe COVID-19 in resource-limited settings.

**Keywords :** COVID-19, predictor of severity, resource-limiting settings, simple laboratory parameters

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