

Category : **Outcome scores**

**A174 - Prediction model for outcomes following tocilizumab treatment for severe covid 19 pneumonia.**

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### **Introduction:**

The cause of respiratory distress by the novel corona virus is a acute hyper inflammatory “cytokine storm”. Besides glucocorticoids, Tocilizumab, a recombinant monoclonal antibody, directed against the IL-6 receptor, has been used as a treatment modality with variable results. Factors affecting poor response to tocilizumab remain unrecognised. We report a model to predict worse outcomes among patients with severe COVID-19 pneumonia treated with tocilizumab.

### **Methods:**

In this retrospective study, patients with severe COVID 19 pneumonia admitted to the Intensive Care unit of our hospital who received Inj. Tocilizumab besides the standard treatment between July 2020 to July 2021, were included. Electronic records of such patients were accessed and demographic, biochemical and outcome measures were recorded. Patients were divided into survivor cohort and mortality cohort. To predict mortality as an outcome, a multivariate logistic regression model was constructed.

### **Results:**

Total of 101 patients were included, 71 in survival cohort and 30 in mortality cohort. Lactate Dehydrogenase (LDH), Neutrophil to Lymphocyte ratio (NL ratio), creatine kinase myocardial band (CKMB) and partial pressure of oxygen to fraction of inspired oxygen ratio (PFR) on day of drug administration differed significantly among the two cohorts after correction for multiple comparison. However, on multivariable logistic regression analysis, a model incorporating LDH, NL ratio, Pro-Brain Natriuretic peptide levels (ProBNP) and PFR best predicted mortality. A nomogram was also created to estimate probability of mortality using the model parameters.

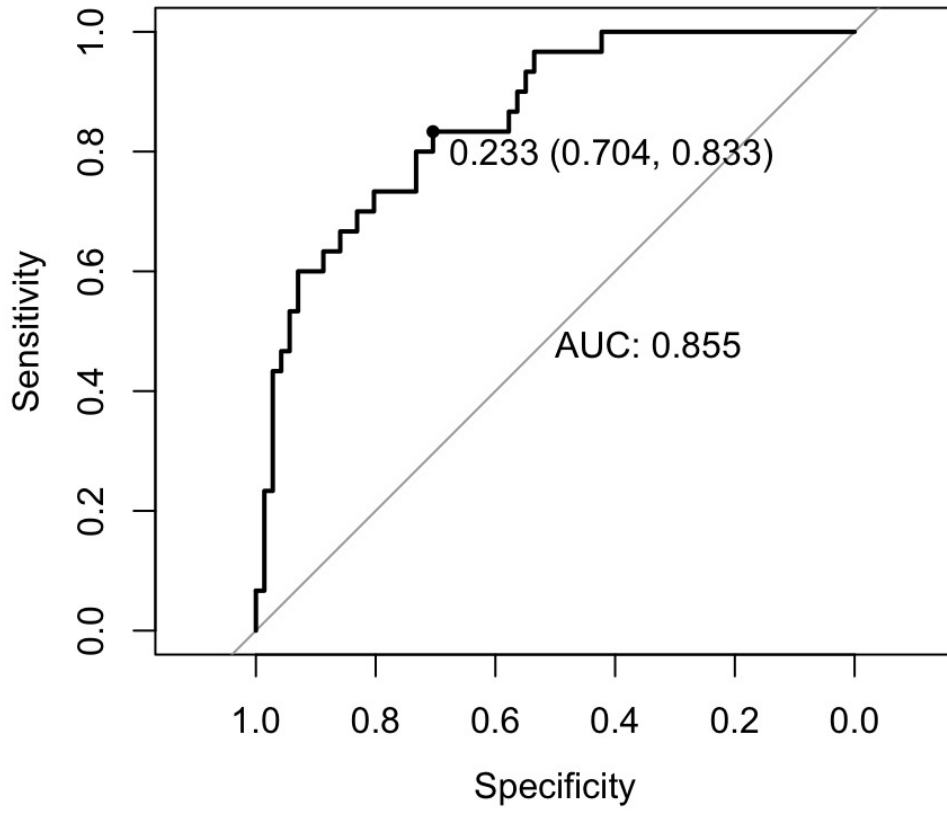
### **Conclusion:**

LDH, ProBNP, NL ratio and PFR at Tocilizumab administration are independently associated with mortality. A model incorporating the combination of these parameters at admission can predict mortality among patients with severe COVID- 19 pneumonia with good accuracy.

### **References:**

Morrison AR et al. J Autoimmun. 2020 Nov;114:102512.

**Image :**



*Area under Receiver operator characteristics curves for the model*