

Based on the regression coefficients of seven risk factors, the regression equation was determined as:

$$\text{Logistic}(p) \ln p / (1 - p) = -1.78 + 1.02 \times \text{age} + 1.62 \times \text{high - transmission - setting - exposure} + 1.77 \times \text{dyspnea} + 1.54 \times \text{CRP} + 1.03 \times \text{lymphocyte} + 1.03 \times \text{AST} + 1.76 \times \text{calcium}.$$

The probability model for predicting the severe COVID-19 was:

$$P = \frac{1}{1 + \exp(-1.78 + 1.02 \times \text{age} + 1.62 \times \text{high - transmission - setting - exposure} + 1.77 \times \text{dyspnea} + 1.54 \times \text{CRP} + 1.03 \times \text{lymphocyte} + 1.03 \times \text{AST} + 1.76 \times \text{calcium})}$$