

Supplementary Table S2. Performance of different models for predicting critical illness in SARS-CoV-2 infection

| Risk factor models for critical illness | AUC (95%CI) |
|--|---------------------|
| Single risk factor models | |
| Age, years | 0.776 (0.705-0.848) |
| Dyspnea (vs not dyspnea) | 0.764 (0.695-0.833) |
| Respiratory rate >24 breaths per min (vs respiratory rate ≤24 breaths per min) | 0.665 (0.598-0.732) |
| SOFA score | 0.921 (0.875-0.957) |
| White blood cell count (X10 ⁹ /L) | 0.658 (0.590-0.727) |
| Lymphocyte count (X10 ⁹ /L) | 0.635 (0.565-0.705) |
| Neutrophil count (x10 ⁹ /L) | 0.620 (0.540-0.700) |
| FIB (g/L) | 0.625 (0.550-0.700) |
| D-dimer (µg/mL) | 0.602 (0.525-0.679) |
| NLR | 0.673 (0.602-0.744) |
| BUN (mmol/L) | 0.618 (0.552-0.685) |
| AST (U/L) | 0.593 (0.516-0.669) |
| ALT (U/L) | 0.572 (0.502-0.642) |
| TBIL (µmol/L) | 0.615 (0.551-0.680) |
| Combination models | |
| Age + Dyspnea | 0.896 (0.844-0.948) |
| Age + SOFA score | 0.936 (0.900-0.973) |
| Age + NLR | 0.816 (0.751-0.881) |
| Age + White blood | 0.827 (0.763-0.891) |
| Age + Dyspnea + SOFA score | 0.959 (0.927-0.991) |
| Age + Dyspnea + NLR | 0.904 (0.858-0.950) |
| Age + SOFA score + NLR | 0.835 (0.897-0.973) |
| Age + Dyspnea + SOFA score + NLR | 0.957 (0.922-0.991) |
| *Age + Dyspnea + SOFA score + White blood | 0.960 (0.919-1.000) |
| #ALL | 0.967 (0.931-1.000) |

FIB=fibrinogen. NLR=neutrophil-to-lymphocyte ratio. BUN=blood urea nitrogen. AST=aspartate transaminase. ALT=alanine aminotransferase. TBIL=Total bilirubin.

Models were constructed using multivariable logistic regression.

* This model used 4 important risk factors selected by LASSO logistic regression analysis.

This model used all 14 risk factors.