**Table S1.** Univariate competing-risks regression analysis.

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| Variables | SHR (95% confidence interval) | p-value |
| Methylprednisolone treatment, (refer: no) | 0.46 (0.25-0.85) | **0.013** |
| Age, year | 1.03 (0.99-1.06) | **0.062** |
| Male, n (%) | 1.18 (0.47-2.98) | 0.73 |
| Body mass index, kg.m-2 | 1.02 (0.97-1.07) | 0.51 |
| SOFA | 1.01 (0.96-1.25) | 0.16 |
| SAPS II | 1.01 (0.99-1.03) | 0.24 |
| Patients with comorbidities, (refer: no) | 1.19 (0.67-2.08) | 0.55 |
| Comorbidities distribution, (refer: no) |  |  |
| Diabetes mellitus | 0.79 (0.45-1.39) | 0.41 |
| Hypertension | 1.44 (0.76-2.72) | 0.26 |
| Chronic kidney disease | 2.16 (1.19-3.91) | **0.011** |
| Chronic artery disease | 0.93 (0.37-2.34) | 0.89 |
| Time from symptoms onset to ICU admission, day | 0.97 (0.90-1.04) | 0.41 |
| Time from symptoms onset to intubation, day | 0.98 (0.91-1.04) | 0.48 |
| Time from symptoms onset to Methylprednisolone administration, day | 1.00 (0.92-1.08) | 0.99 |
| Vital signs on ICU admission |  |  |
| Temperature (max), °C | 1.23 (0.95-1.73) | 0.10 |
| Heart rate, beats.min-1 | 1.00 (0.99-1.01 | 0.27 |
| Respiratory rate, breaths.min-1 | 1.01 (0.98-1.04) | 0.50 |
| Laboratory data on ICU admission |  |  |
| C-reactive protein, mg.L-1 | 1.00 (0.99-1.001) | 0.31 |
| Leucocytes count, × 109.l-1 | 0.98 (0.91-1.05) | 0.59 |
| Lymphocytes count, × 109.l-1 | 1.73 (0.58-5.09) | 0.32 |
| Platelet count, × 109.l-1 | 1.00 (0.99-1.002) | 0.55 |
| Procalcitonin, ng.mL-1 | 1.01 (1.00-1.02) | **0.005** |
| International normalized ratio | 0.84 (0.14-5.18) | 0.85 |
| Activated partial thromboplastin time; s | 1.01 (0.98-1.04) | 0.42 |
| D-dimer, µg.mL-1 | 0.86 (0.70-1.06) | 0.17 |
| Fibrinogen, g.L-1 | 1.09 (0.94-1.26) | 0.27 |
| Ferritin, µg.L-1 | 1.00 (0.99-1.00) | 0.96 |
| Interleukin 6, ng.L-1 | 1.00 (0.99-1.00) | 0.28 |
| Alanine aminotransferase, IU.mL-1 | 1.00 (0.99-1.01) | 0.81 |
| Aspartate aminotransferase, IU.mL-1 | 1.00 (0.99-1.02) | 0.23 |
| Total bilirubin, µmol.L-1 | 0.99 (0.97-1.01) | 0.47 |
| Creatinine, µmol.L-1 | 1.00 (0.99-1.00) | **0.09** |
| PaO2/FiO2 ratio, mmHg  | 1.00 (0.99-1.00) | 0.19 |
| SaO2, %  | 0.97 (0.93-1.00) | **0.08** |
| PaCO2, mmHg  | 1.00 (0.98-1.03) | 0.66 |
| Lactate, mmol.L-1  | 1.38 (0.98-1.93) | **0.06** |
| Treatments (refer: no) |  |  |
| Vasopressor support | 2.80 (1.46-5.39) | **0.002** |
| Prone position | 3.08 (1.60-5.95) | **0.001** |
| Neuromuscular blocker agents | 2.11 (1.12-3.98) | **0.021** |
| Renal replacement therapy | 2.12 (0.72-6.27) | 0.17 |
| Tocilizumab  | 1.14 (0.69-1.89) | 0.60 |
| Hydroxychloroquine  | 1.13 (0.64-2.00) | 0.67 |
| Favipiravir | 0.80 (0.42-1.51) | 0.49 |
| Lopinavir/ritonavir | 1.11 (0.63-1.98) | 0.71 |
| Ventilator parameters |  |  |
| Tidal volume, mL.kg-1 IBW | 1.07 (0.83-1.37) | 0.61 |
| Plateau pressure, cmH2O | 1.02 (0.95-1.10) | 0.63 |
| Positive end expiratory pressure, cmH2O | 1.00 (0.83-1.22) | 0.93 |
| Driving pressure, cmH2O | 1.01 (0.94-1.09) | 0.72 |
| Static respiratory compliance, mL.cmH2O-1 | 0.99 (0.95-1.03) | 0.68 |

SOFA, Sequential Organ Failure Assessment; SAPS, Simplified Acute Physiology Score; PaO2, arterial oxygen tension; PaCO2, arterial CO2 tension; FiO2; Inspiratory oxygen fraction; SaO2, arterial oxygen saturation; IBW, ideal body weight; ICU, intensive care unit; SHR, sub hazards ratio.

p ≤ 0.05 was considered statistically significant.