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| Supplementary Table **2. Laboratory findings and complications, and treatments of survivors and non-survivors in COVID-19 patients with ARDS** |
| **Indicators** | **Total** | **non-survivors** | **survivors** | ***P* value** |
| **Vital signs** |  |  |  |  |  |  |
| Temperature(N = 796), ℃ | 36.70(36.30-37.30) | N = 272 | 36.80(36.40-37.58) | N = 524 | 36.60(36.30-37.20) | 0.003\* |
| Heart rate (N = 796), bpm  | 95.00(83.00-108.00) | N = 272 | 102.00(90.00-115.00) | N = 524 | 91.00(81.00-104.00) | <0.001\* |
| Respiratory rate (N = 796), bpm | 21.00(20.00-25.00) | N = 272 | 27.00(21.00-33.00) | N = 524 | 20.00(20.00-22.00) | <0.001\* |
| Mean arterial pressure (N = 796), mmHg | 93.00(84.33-101.67) | N = 272 | 88.33(79.00-98.67) | N = 524 | 95.00(86.67-103.00) | <0.001\* |
| **Laboratory examinations** |  |  |  |  |  |
| **Blood routine** | 　 | 　 | 　 | 　 | 　 |  |
| Monocytes (N = 796), %  | 7.20(4.70-9.60) | N = 272 | 4.60(2.63-7.50) | N = 524 | 8.20(6.30-10.20) | <0.001\* |
| Neutrophils (N = 796), %  | 76.00(64.23-85.80) | N = 272 | 87.20(80.15-92.30) | N = 524 | 69.95(59.90-78.70) | <0.001\* |
| Eosinophils (N = 796), %  | 0.10(0.00-0.80) | N = 272 | 0.00(0.00-0.10) | N = 524 | 0.30(0.00-1.30) | <0.001\* |
| Basophils (N = 796), %  | 0.20(0.00-0.30) | N = 272 | 0.10(0.00-0.20) | N = 524 | 0.20(0.00-0.30) | <0.001\* |
| Monocytes, # (N = 796), ×10^9/L | 0.43(0.30-0.59) | N = 272 | 0.40(0.26-0.61) | N = 524 | 0.44(0.33-0.59) | 0.044\* |
| Hemoglobin (N = 796), g/L | 129.00(116.00-141.00) | N = 272 | 128.00(111.00-143.00) | N = 524 | 129.00(118.00-140.00) | 0.279 |
| Lymphocytes (N = 796), %  | 15.15(8.40-24.65) | N = 272 | 7.10(4.00-12.28) | N = 524 | 20.55(13.23-28.68) | <0.001\* |
| **Organ damage indexes** | 　 | 　 | 　 | 　 | 　 |
| DBIL (N = 794), μmol/L | 4.40(3.00-6.60) | N = 271 | 6.20(4.40-9.80) | N = 523 | 3.70(2.70-5.20) | <0.001\* |
| IBIL (N = 786), μmol/L | 5.10(3.60-7.20) | N = 269 | 6.00(4.10-8.40) | N = 517 | 4.80(3.50-6.50) | <0.001\* |
| TP (N = 794), g/L | 68.20(64.20-72.43) | N = 271 | 66.50(61.50-71.00) | N = 523 | 68.80(65.30-72.90) | <0.001\* |
| TBA (N = 479), μmol/L | 3.40(1.90-5.90) | N = 172 | 3.40(1.70-6.58) | N = 307 | 3.40(2.00-5.50) | 0.760 |
| Amylase (N = 415), U/L | 56.00(43.00-81.00) | N = 140 | 52.50(36.00-86.25) | N = 275 | 57.00(46.00-78.00) | 0.129 |
| Myohemoglobin (N = 481), ng/mL | 49.80(29.10-166.60) | N = 173 | 252.80(100.95-1200.00) | N = 308 | 34.80(23.95-51.78) | <0.001\* |
| Glucose (N = 633), mmol/L | 6.70(5.73-8.88) | N = 266 | 7.95(6.36-11.26) | N = 367 | 6.12(5.39-7.35) | <0.001\* |
| Lactate (N = 109), mmol/L | 2.11(1.51-2.89) | N = 73 | 2.46(1.79-3.30) | N = 36 | 1.64(1.13-2.08) | <0.001\* |
| Ca2+ (N = 796), mmol/L | 2.12(2.03-2.21) | N = 272 | 2.06(1.98-2.14) | N = 524 | 2.15(2.07-2.23) | <0.001\* |
| **Blood gas characteristics** |  | 　 | 　 | 　 |  |
| Actual bicarbonate (N = 233), mmol/L | 23.50(20.50-25.60) | N = 118 | 22.40(19.48-25.25) | N = 115 | 24.40(22.00-26.20) | <0.001\* |
| Standard bicarbonate (N = 232), mmol/L | 24.10(21.83-25.80) | N = 118 | 23.40(20.80-25.83) | N = 114 | 24.60(22.90-25.83) | 0.011\* |
| HCO3 (N = 795), mmol/L | 23.40(21.20-25.20) | N = 271 | 21.80(19.00-24.10) | N = 524 | 23.90(22.23-25.50) | <0.001\* |
| PaO2 (N = 233), mmHg | 80.80(60.60-87.20) | N = 118 | 68.00(51.70-79.30) | N = 115 | 86.00(81.00-93.00) | <0.001\* |
| SaO2 (N = 232), % | 94.00(81.00-98.28) | N = 118 | 84.50(70.00-91.25) | N = 114 | 98.20(96.50-99.10) | <0.001\* |
| PaCO2 (N = 233), mmHg | 36.80(32.30-41.60) | N = 118 | 34.70(30.53-38.23) | N = 115 | 39.80(34.50-43.20) | <0.001\* |
| SpO2 (N = 796), % | 95.00(90.00-98.00) | N = 272 | 85.00(72.25-92.00) | N = 524 | 97.00(95.00-98.00) | <0.001\* |
| **Complications** | **N = 796** |  | **N = 272** |  | **N = 524** | 　 |
| Acute liver injury | 79(9.90%) |  | 67(24.60%) |  | 12(2.30%) | <0.001\* |
| Acute kidney injury | 145(18.20%) |  | 133(48.90%) |  | 12(2.30%) | <0.001\* |
| Heart failure | 222(27.90%) |  | 194(71.30%) |  | 28(5.30%) | <0.001\* |
| Cardiac injury | 242(30.40%) |  | 215(79.00%) |  | 27(5.20%) | <0.001\* |
| DIC | 55(6.90%) |  | 52(19.10%) |  | 3(0.60%) | <0.001\* |
| **Treatments λ** | **N = 796** |  | **N = 272** |  | **N = 524** | 　 |
| Antiviral therapy | 434(54.50%) |  | 124(45.60%) |  | 310(59.20%) | <0.001\* |
| Antibiotics | 681(85.60%) |  | 265(97.40%) |  | 416(79.40%) | <0.001\* |
| Intravenous immunoglobulin therapy | 329(41.30%) |  | 160(58.80%) |  | 169(32.30%) | <0.001\* |
| Glucocorticoid therapy | 505(63.40%) |  | 247(90.80%) |  | 258(49.20%) | <0.001\* |
| High-flow oxygen therapy | 442(55.50%) |  | 98(36.00%) |  | 344(65.60%) | <0.001\* |
| Mechanical ventilation | 190(23.90%) |  | 172(63.20%) |  | 18(3.40%) | <0.001\* |
| Non-invasive | 85(10.70%) |  | 72(26.50%) |  | 13(2.50%) | <0.001\* |
| Invasive | 105(13.20%) |  | 100(36.80%) |  | 5(1.00%) | <0.001\* |
| Transfusion | 185(23.20%) |  | 164(60.30%) |  | 21(4.00%) | <0.001\* |
| ECMO | 8(1.00%) |  | 6(2.20%) |  | 2(0.40%) | 0.038\* |
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| Abbreviation: COVID-19, Corona virus disease 2019; DBIL, Direct bilirubin; IBIL, indirect bilirubin; TP, Total protein; PAB, Prealbumin TBA, Total bile acid; PaO2, Oxygen partial pressure; SaO2, Oxygen saturation; PaCO2, Carbon dioxide partial pressure; SpO2, pulse oxygen saturation; DIC, Disseminated intravascular coagulation; ECMO, extracorporeal membrane oxygenation; IQR, Interquartile range. Continuous variables were described as median (IQR).λTreatments include antibiotics (cephalosporin, fluoroquinolones or macrolides), antiviral therapy (lopinavir/ritonavir, ganciclovir, riboviron or oseltamivir) or transfusion (suspended red blood cells, platelets or plasma). *P* values were calculated by Mann-Whitney U non-parameter test for skewed distributed data. Categorical variables were expressed as number (%). *P* values were calculated by Pearson χ2 test. \**P* < 0.05. |  |

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