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| Supplementary Table **1. Laboratory findings, complications, and treatments of ARDS and non-ARDS patients with COVID-19**  |
| **Indicators** | **Total** | **ARDS** | **Non-ARDS**  | ***P* value** |
| **Vital signs** |  |  |  |  |  | 　 |
| Temperature (N = 1531), ℃ | 36.60(36.30-37.00) | N = 796 | 36.70(36.30-37.30) | N = 735 | 36.50(36.20-36.80) | <0.001\* |
| Heart rate (N = 1531), bpm  | 92.00(81.00-104.00) | N = 796 | 95.00(83.00-108.00) | N = 735 | 89.00(80.00-100.00) | <0.001\* |
| Respiratory rate (N = 1531), bpm | 20.00(20.00-22.00) | N = 796 | 21.00(20.00-25.00) | N = 735 | 20.00(20.00-21.00) | <0.001\* |
| Mean arterial pressure (N = 1531), mmHg | 95.33(86.67-104.00) | N = 796 | 93.00(84.33-101.67) | N = 735 | 97.00(89.33-105.17) | <0.001\* |
| **Laboratory examinations** |  |  |  |  | 　 |
| **Blood routine** | 　 | 　 | 　 | 　 | 　 | 　 |
| Monocytes, % (N = 1531) | 8.20(6.00-10.40) | N = 796 | 7.20(4.70-9.60) | N = 735 | 9.10(7.20-11.10) | <0.001\* |
| Neutrophils, % (N = 1531) | 68.50(58.20-80.50) | N = 796 | 76.00(64.28-85.80) | N = 735 | 63.00(54.90-71.20) | <0.001\* |
| Eosinophils, % (N = 1531) | 0.40(0.00-1.50) | N = 796 | 0.10(0.00-0.80) | N = 735 | 1.00(0.20-2.00) | <0.001\* |
| Basophils, % (N = 1531) | 0.20(0.10-0.40) | N = 796 | 0.20(0.00-0.30) | N = 735 | 0.30(0.20-0.50) | <0.001\* |
| Monocytes, # (N = 1531), ×10^9/L | 0.46(0.34-0.62) | N = 796 | 0.43(0.30-0.59) | N = 735 | 0.49(0.37-0.63) | <0.001\* |
| Hemoglobin (N = 1531), g/L | 129.00(117.00-141.00) | N = 796 | 129.00(116.00-141.00) | N = 735 | 130.00(118.00-141.00) | 0.100 |
| Lymphocytes, % (N = 1531) | 21.00(12.05-29.60) | N = 796 | 15.15(8.40-24.55) | N = 735 | 25.60(18.95-32.80) | <0.001\* |
| **Organ damage indexes** | 　 | 　 | 　 | 　 | 　 |
| DBIL (N = 1524), μmol/L | 3.90(2.80-5.50) | N = 794 | 4.40(3.00-6.58) | N = 730 | 3.50(2.70-4.70) | <0.001\* |
| IBIL (N = 1511), μmol/L | 5.00(3.50-7.00) | N = 786 | 5.10(3.60-7.18) | N = 725 | 4.80(3.50-6.80) | 0.031\* |
| TP (N = 1524), g/L | 68.60(65.10-72.60) | N = 794 | 68.20(64.23-72.40) | N = 730 | 69.00(65.80-72.60) | 0.001\* |
| TBA (N = 860), μmol/L | 3.40(2.00-5.90) | N = 479 | 3.40(1.90-5.90) | N = 381 | 3.50(2.10-6.00) | 0.404 |
| Amylase (N = 765), U/L | 59.00(44.00-79.00) | N = 415 | 56.00(43.00-81.00) | N = 350 | 63.00(47.00-77.00) | 0.124 |
| Myohemoglobin (N = 1017), ng/mL | 39.20(27.50-72.10) | N = 481 | 49.80(29.10-166.30) | N = 536 | 34.80(26.70-50.60) | <0.001\* |
| Glucose (N = 1137), mmol/L | 6.31(5.36-8.03) | N = 633 | 6.70(5.73-8.87) | N = 504 | 5.78(5.08-7.21) | <0.001\* |
| Lactate (N = 149), mmol/L | 2.02(1.48-2.85) | N = 109 | 2.11(1.51-2.88) | N = 40 | 1.69(1.40-2.35) | 0.041\* |
| Ca2+ (N = 1531), mmol/L | 2.15(2.07-2.24) | N = 796 | 2.12(2.03-2.21) | N = 735 | 2.18(2.11-2.26) | <0.001\* |
| **Blood gas characteristics** | 　 | 　 | 　 | 　 | 　 |
| Actual bicarbonate (N = 373), mmol/L | 24.00(21.40-25.70) | N=233 | 23.50(20.50-25.60) | N=140 | 24.15(22.68-25.80) | 0.033\* |
| Standard bicarbonate (N = 371), mmol/L | 24.10(22.30-25.40) | N=232 | 24.10(21.88-25.80) | N=139 | 24.10(23.25-25.30) | 0.519 |
| HCO3 (N = 1526), mmol/L | 23.70(21.90-25.30) | N=795 | 23.40(21.20-25.20) | N=731 | 24.00(22.60-25.50) | <0.001\* |
| PaO2 (N = 373), mmHg | 84.00(73.00-91.00) | N = 233 | 80.80(62.70-87.20) | N = 140 | 87.00(82.68-92.48) | <0.001\* |
| SaO2 (N = 371), % | 97.00(90.00-98.50) | N = 232 | 94.00(81.00-98.23) | N = 139 | 98.00(96.60-98.75) | <0.001\* |
| PaCO2 (N = 373), mmHg | 38.60(33.40-42.90) | N = 233 | 36.80(32.30-41.60) | N = 140 | 40.60(37.55-43.70) | <0.001\* |
| SpO2 (N = 1531), % | 97.00(94.00-98.00) | N = 796 | 95.00(90.00-98.00) | N = 735 | 97.00(96.00-98.00) | <0.001\* |
| **Complications** | **N = 1531** |  | **N = 796** |  | **N = 735** | 　 |
| Acute liver injury | 89(5.81%) |  | 79(9.92%) |  | 10(1.36%) | <0.001\* |
| Acute kidney injury | 162(10.58%) |  | 145(18.22%) |  | 17(2.31%) | <0.001\* |
| Heart failure | 239(15.61%) |  | 222(27.89%) |  | 17(2.31%) | <0.001\* |
| Cardiac injury | 284(18.55%) |  | 242(20.40%) |  | 42(5.71%) | <0.001\* |
| DIC | 57(3.72%) |  | 55(6.91%) |  | 2(0.27%) | <0.001\* |
| **Treatments λ** | **N = 1531** |  | **N = 796** |  | **N = 735** | 　 |
| Antiviral therapy | 747(48.79%) |  | 434(54.52%) |  | 313(42.59%) | <0.001\* |
| Antibiotics | 1161(75.83%) |  | 681(85.55%) |  | 480(65.31%) | <0.001\* |
| Intravenous immunoglobulin therapy | 467(30.50%) |  | 329(41.33%) |  | 138(18.78%) | <0.001\* |
| Glucocorticoid therapy | 681(44.48%) |  | 505(63.44%) |  | 176(23.95%) | <0.001\* |
| High-flow oxygen therapy | 747(48.79%) |  | 442(55.53%) |  | 305(41.50%) | <0.001\* |
| Mechanical ventilation | 205(13.39%) |  | 190(23.87%) |  | 15(2.04%) | <0.001\* |
| Non-invasive | 93(6.07%) |  | 85(10.68%) |  | 8(1.09%) | <0.001\* |
| Invasive | 112(7.32%) |  | 105(13.19%) |  | 7(0.95%) | <0.001\* |
| Transfusion | 205(13.39%) |  | 185(23.24%) |  | 20(2.72%) | <0.001\* |
| ECMO | 8(0.52%) |  | 8(1.01%) |  | 0 | 0.018\* |
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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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