**Additional file 1: Summary of Demography and Baseline characteristics**

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|  | **Before propensity score (PS) adjustment** | **After propensity score (PS) adjustment** |
|  | **Overall (N=1049)** | **Control(N=770)** | **Statin(N=279)** | **P-value** | **Overall (502)** | **Control(N=251)** | **Statin(N=251)** | **P-value** |
| **Age (Years), Mean (SD)** | 61.6 (14.79) | 60.2 (15.07) | 65.5 (13.25) | **<.0001\*** | 65.2 (13.86) | 64.9 (14.31) | 65.4 (13.41) | 0.7258\* |
| **Gender – Male, , n (%)** | 698 ( 68.9 ) | 518 ( 69.8 ) | 180 ( 66.4 ) | 0.3021^^ | 327 ( 65.8 ) | 163 ( 64.9 ) | 164 ( 66.7 ) | 0.6850^^ |
| **Weight (kg), Mean (SD)** | 81.2 (18.90) | 80.8 (18.38) | 82.4 (20.22) | 0.6326^ | 59.6 (51.50, 66.01) | 59.7 (52.41, 66.01) | 58.7 (50.54, 65.10) | 0.0991^ |
| **APACHE II score, Median (Q1,Q3)** | 14.0 (9.00, 23.00) | 15.0 (9.00, 25.00) | 13.0 (10.00, 20.00) | 0.0846^ | 12.5 (9.00, 19.00) | 12.0 (8.00, 17.00) | 13.0 (10.00, 20.00) | 0.2449^ |
| **SOFA score, Median (Q1,Q3)** | 5.0 (3.00, 8.00) | 5.0 (3.00, 8.00) | 5.0 (3.00, 8.00) | 0.7479^ | 5.0 (3.00, 7.00) | 5.0 (3.00, 7.00) | 5.0 (3.00, 8.00) | 0.3806^ |
| **Systemic Corticosteroids use during ICU, n (%)** | 155 ( 15.2 ) | 96 ( 12.8 ) | 59 ( 21.6 ) | **0.0005^** | 411 ( 82.5 )) | 204 ( 81.3 ) | 207 ( 83.8 | 0.4571^^ |
| **Tocilizumab Use, n (%)** | 367 ( 35.9 ) | 266 ( 35.6 ) | 101 ( 37.0 ) | 0.6724^^ | 183 ( 36.7 ) | 88 ( 35.1 ) | 95 ( 38.5 ) | 0.4311^^ |
| **Proning, n (%)** | 302 ( 30.5 ) | 240 ( 33.1 ) | 62 ( 23.5 ) | **0.0038^^** | 140 ( 28.1 ) | 80 ( 31.9 ) | 60 ( 24.3 ) | 0.06^^ |
| **eGFR Baseline, Median (Q1,Q3)** | 76.0 (45.00, 97.00) | 76.5 (47.00, 98.00) | 73.0 (41.00, 97.00) | 0.2037^ | 75.0 (47.00, 97.00) | 76.0 (54.00, 99.00) | 73.0 (40.00, 96.00) | 0.0801^ |
| **Acute Kidney Injury (AKI) Within 24 hours of ICU admission, n (%)** | 251 ( 25.3 ) | 186 ( 25.6 ) | 65 ( 24.5 ) | 0.7349^^ | 115 ( 23.4 ) | 56 ( 22.7 ) | 59 ( 24.1 ) | 0.7118^^ |
| **Mechanical Ventilation within 24 hours of ICU admission , n (%)** | 719 ( 70.5 ) | 511 ( 68.3 ) | 208 ( 76.5 ) | **0.0116^^** | 356 ( 71.5 ) | 166 ( 66.1 ) | 190 ( 76.9 ) | 0.0077^^ |
| **A-a Gradient , Median (Q1,Q3)** | 414.2 (254.10, 565.20) | 410.3 (247.40, 565.20) | 418.0 (269.30,566.60) | 0.5451^ | 435.8 (270.40, 564.10) | 457.3 (291.05, 560.55) | 419.7 (262.00, 572.30) | 0.5549^ |
| **Oxygenation Index (OI)** | 16.1 (8.80, 25.95)) | 14.2 (8.12, 25.95 | 19.1 (10.15, 24.28) | 0.2878^ | 17.5 (10.45, 28.19) | 15.7 (10.45, 28.19) | 19.2 (11.00, 26.35) | 0.5480^ |
| **Inotropes/vasopressors use within 24 hours of admission)** | 222 ( 22.2 ) | 153 ( 20.9 ) | 69 (25.7 ) | 0.1003^^ | 110 ( 22.2 ) | 46 ( 18.5 ) | 64 ( 25.9 ) | 0.0462^^ |
| **Lactic acid Baseline, Median (Q1,Q3)** | 1.7 (1.26, 2.32) | 1.7 (1.22, 2.40) | 1.7 (1.30, 2.20) | 0.9041^ | 1.6 (1.28, 2.34) | 1.6 (1.23, 2.45) | 1.6 (1.30, 2.23) | 0.8520^ |
| **Platelets count Baseline, Median (Q1,Q3)** | 241.0 (183.00, 311.00) | 239.5 (182.00, 309.00) | 243.0 (186.00, 316.00) | 0.6098^ | 247.0 (186.00, 313.00) | 254.0 (186.50, 313.00) | 243.0 (186.00, 313.00) | 0.9822^ |
| **Total WBC Baseline, Median (Q1,Q3)** | 16.1 (11.05, 23.00) | 16.5 (11.07, 24.24) | 15.1 (11.00, 20.25) | **0.0142^** | 15.8 (11.00, 22.20) | 16.5 (11.00, 23.70) | 15.2 (11.00, 20.60) | 0.0983^ |
| **International normalized ratio (INR), Median (Q1,Q3)** | 1.1 (1.03, 1.21) | 1.1 (1.04, 1.23) | 1.1 (1.00, 1.15) | 0.8492\* | 1.1 (1.02, 1.18) | 1.1 (1.03, 1.19) | 1.1 (1.01, 1.15) | 0.0088^ |
| **activated partial thromboplastin time (aPTT) Baseline, Median (Q1,Q3)** | 30.3 (27.00, 33.90) | 30.9 (27.00, 34.20) | 29.3 (26.30, 33.05) | **0.0020^** | 29.7 (26.70, 33.40) | 30.1 (26.75, 34.00) | 29.3 (26.40, 33.00) | 0.1387^ |
| **Total bilirubin, Median (Q1,Q3)** | 9.8 (6.80, 14.00) | 10.0 (6.85, 14.00) | 9.2 (6.30, 13.60) | 0.2141^ | 9.1 (6.60, 13.20) | 9.0 (6.60, 13.00) | 9.3 (6.40, 13.45) | 0.8668^ |
| **Albumin Baseline, Median (Q1,Q3)** | 32.0 (28.00, 36.00) | 32.0 (28.00, 37.00) | 32.4 (29.00, 35.00) | 0.8750^ | 32.0 (29.00, 35.00) | 32.0 (27.00, 36.00) | 32.5 (29.00, 35.00) | 0.1863^ |
| **Creatine phosphokinase (CPK) baseline (U/l), Median (Q1,Q3)** | 173.5 (75.00, 426.00) | 183.0 (78.00, 472.00) | 153.0 (63.00, 333.00) | **0.0069^** | 153.0 (69.00, 347.00) | 146.5 (70.50, 352.50) | 160.0 (69.00, 344.00) | 0.9775^ |
| **C-reactive protein (CRP) baseline (mg/l)m Median (Q1,Q3)** | 130.0 (65.22, 197.50) | 126.8 (53.52, 194.95) | 135.0 (82.00, 206.00) | **0.0245^** | 124.0 (67.00, 196.20) | 117.0 (30.00, 191.00) | 136.0 (85.00, 203.00) | 0.0013^ |
| **Procalcitonin (ng/ml), Median (Q1,Q3)** | 0.4 (0.14, 1.14) | 0.4 (0.15, 1.39) | 0.3 (0.13, 0.83) | 0.1038^ | 0.4 (0.13, 0.97) | 0.4 (0.16, 1.35) | 0.4 (0.13, 0.90) | 0.4242^ |
| **Fibrinogen Level baseline (gm/l), Median (Q1,Q3)**  | 5.4 (3.77, 7.15) | 5.4 (3.56, 7.18) | 5.6 (4.21, 7.05) | 0.3941^ | 5.3 (3.88, 7.04) | 5.2 (3.43, 6.92) | 5.5 (4.20, 7.36) | 0.2236^ |
| **D-dimer Level baseline** | 1.3 (0.71, 3.34) | 1.4 (0.72, 3.58) | 1.2 (0.63, 2.51) | **0.0443^** | 1.2 (0.66, 2.72) | 1.2 (0.70, 2.89) | 1.2 (0.62, 2.53) | 0.3530^ |
| **Ferritin Level baseline** | 782.5 (383.60, 1647.00) | 867.9 (436.50, 1650.00) | 570.5 (286.70, 1137.50) | **0.0000^** | 888.2 (384.30, 1650.00) | 936.9 (466.60, 1650.00) | 732.3 (332.00, 2118.00) | 0.1611^ |
| **Blood glucose level Baseline Within 24 hours of ICU admission, Median (Q1,Q3)** | 138.0 (55.14, 244.00) | 138.0 (45.56, 247.00) | 139.0 (77.00, 239.00) | 0.1931^ | 11.4 (8.00, 16.35) | 10.7 (7.61, 15.10) | 12.3 (8.50, 17.10) | 0.0179^ |
| **PaO2/FiO2 ratio within 24 hours of admission, Median (Q1,Q3)** | 83.1 (60.28, 136.10)) | 85.0 (60.00, 142.40 | 80.5 (63.58, 124.30) | 0.5852^ | 79.5 (60.00, 125.30) | 78.1 (58.00, 125.00) | 81.5 (61.80, 125.60) | 0.3576^ |
| **Respiratory Rate (RR) Baseline** | 28.0 (23.00, 33.00) | 28.0 (23.00, 33.00) | 27.0 (24.00, 33.00) | 0.8627^ | 27.0 (22.00, 33.00) | 27.0 (22.00, 32.00) | 27.0 (24.00, 33.00) | 0.1395^ |
| **Maximum body temperature Baseline** | 37.4 (37.00, 38.10) | 37.5 (37.00, 38.20) | 37.3 (37.00, 37.90) | 0.2265^ | 37.3 (37.00, 38.00) | 37.3 (37.00, 38.00) | 37.4 (37.00, 37.90) | 0.4938^ |
| **Pharmacological DVT prophylaxis use during ICU stay ,n (%)**  | 219 ( 24.6 ) | 146 ( 23.0 ) | 73 ( 28.9 ) | 0.0656^^ | 468 ( 94.5 ) | 232 ( 93.5 ) | 236 ( 95.5 ) | 0.3277^^ |
| **Patient received nephrotoxic drugs/material during ICU stay** | 823 ( 81.6 ) | 576 ( 78.0 ) | 247 ( 91.1 ) | **<.0001^^** | 424 ( 85.8 ) | 202 ( 81.1 ) | 222 ( 90.6 ) | **0.0025^^** |
| **Comorbidity** |  |  |  |  |  |  |  |  |
| Atrial fibrillation (A Fib) | 28 ( 2.7 ) | 15 ( 2.0 ) | 13 ( 4.8 ) | **0.0170^^** | 16 ( 3.2 ) | 3 ( 1.2 ) | 13 ( 5.3 ) | 0.0101^^ |
| Heart Failure | 85 ( 8.3 ) | 55 ( 7.4 ) | 30 ( 11.0 ) | 0.0627^^ | 44 ( 8.8 ) | 16 ( 6.4 ) | 28 ( 11.3 ) | 0.0511^^ |
| HTN | 564 ( 55.2 ) | 354 ( 47.3 ) | 210 ( 76.9 ) | **<.0001^^** | 311 ( 62.4 ) | 116 ( 46.2 ) | 195 ( 78.9 ) | <.0001^^ |
| DM | 602 ( 59.0 ) | 406 ( 54.3 ) | 196 ( 71.8 ) | **<.0001^^** | 318 ( 63.9 ) | 138 ( 55.0 ) | 180 ( 72.9 ) | <.0001^^ |
| DLP | 197 ( 19.3 ) | 70 ( 9.4 ) | 127 ( 46.5 ) | **<.0001^^** | 139 ( 27.9 ) | 27 ( 10.8 ) | 112 ( 45.3 ) | <.0001^^ |
| Ischemic heart disease (IHD) | 84 ( 8.2 ) | 54 ( 7.2 ) | 30 ( 11.0 ) | 0.0524^^ | 44 ( 8.8 ) | 20 ( 8.0 ) | 24 ( 9.7 ) | 0.4918^^ |
| Chronic kidney disease (CKD) | 113 ( 11.1 ) | 66 ( 8.8 ) | 47 ( 17.2 ) | **0.0002^^** | 63 ( 12.7 ) | 17 ( 6.8 ) | 46 ( 18.6 ) | <.0001^^ |
| Cancer | 25 ( 2.4 ) | 19 ( 2.5 ) | 6 ( 2.2 ) | 0.7541^^ | 14 ( 2.8 ) | 8 ( 3.2 ) | 6 ( 2.4 ) | 0.6088^^ |
| Acute Coronary Syndrome (ACS) | 14 ( 1.4 ) | 7 ( 0.9 ) | 7 ( 2.6 ) | **0.0477\*\*** | 9 ( 1.8 ) | 2 ( 0.8 ) | 7 ( 2.8 ) | 0.0880\*\* |
| DVT | 7 ( 0.7 ) | 6 ( 0.8 ) | 1 ( 0.4 ) | 0.4551\*\* | 1 ( 0.2 ) | 0 ( 0.0 ) | 1 ( 0.4 ) | 0.3129\*\* |
| PE | 7 ( 0.7 ) | 5 ( 0.7 ) | 2 ( 0.7 ) | 0.9125\*\* | 3 ( 0.6 ) | 1 ( 0.4 ) | 2 ( 0.8 ) | 0.5531\*\* |
| Liver disease (any type) | 3 ( 0.3 ) | 3 ( 0.4 ) | 0 ( 0.0 ) | 0.2947\*\* | 12 ( 2.4 ) | 5 ( 2.0 ) | 7 ( 2.8 ) | 0.5401^^ |
| Stroke | 56 ( 5.5 ) | 28 ( 3.7 ) | 28 ( 10.3 ) | **<.0001^^** | 31 ( 6.2 ) | 8 ( 3.2 ) | 23 ( 9.3 ) | 0.0047^^ |
| \*T Test / ^ Wilcoxon rank sum test is used to calculate the P-value.PS: Propensity score^^ Chi square/ \*\* Fisher’s Exact teat is used to calculate P-value. |