**Supplementary Table 3** **Characteristics and outcomes in culture positive and negative septic patient before and after propensity score matching.**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | ***Before Match*** | | | | ***After Match*** | | | |
| **Variables** | **Total (*n* = 1919)** | **Culture Positive (n = 962)** | **Culture Negative (n = 957)** | ***P*-value** | **Total (n = 618)** | **Culture Positive (n = 309)** | **Culture Negative (n = 309)** | **Standardized Difference** |
| **Demographic** | | | | | | | | |
| Age, year, median (IQR) | 63 (49 to 75) | 65 (50 to 75) | 63 (48 to 74) | **0.014** | 64 (51 to 77) | 64 (52 to 76) | 65 (50 to 77) | 0.011 |
| Male, n (%) | 1234 (64.3) | 651 (67.7) | 583 (60.9) | **0.002** | 419 (67.8) | 214 (69.3) | 205 (66.3) | 0.064 |
| Bodyweight, kilogram, | 65.0 (56.0 to 70.0) | 65.0 (56.0 to 70.0) | 62.5 (56.0 to 70.0) | 0.365 | 63.0 (55.0 to 70.0) | 63.0 (55.0 to 70.0) | 63.0 (55.5 to 70.0) | 0.009 |
| **Clinical Characteristics** | | | | | | | | |
| Patient source | | | | |  | | | |
| Emergency room, n (%) | 482 (25.1) | 219 (45.4) | 263 (54.6) | **0.017** | 174 (28.2) | 94 (30.4) | 80 (25.9) | 0.100 |
| Internal Medicine, n (%) | 490 (25.5) | 223 (45.5) | 267 (54.5) | **0.018** | 178 (28.8) | 95 (30.7) | 83 (26.9) | 0.084 |
| Surgery, n (%) | 785 (41.1) | 402 (50.6) | 393 (49.4) | 0.748 | 193 (31.2) | 99 (32.0) | 94 (30.4) | 0.035 |
| Transferred, n (%) | 226 (11.8) | 131 (13.6) | 95 (9.9) | **0.012** | 80 (12.9) | 41 (13.3) | 39 (12.6) | 0.021 |
| Underwent emergency surgery, n (%) | 377 (19.6) | 200 (20.8) | 177 (18.5) | 0.206 | 70 (11.3) | 41 (13.3) | 29 (9.4) | 0.123 |
| **Comorbidities** | | | | | | | | |
| Hypertension, n (%) | 782 (40.8) | 399 (41.5) | 383 (40.0) | 0.517 | 278 (45.0) | 134 (43.4) | 144 (46.6) | 0.064 |
| Coronary heart disease, n (%) | 331 (17.2) | 184 (19.1) | 147 (15.4) | **0.029** | 112 (18.1) | 54 (17.5) | 58 (18.8) | 0.034 |
| Heart failure, n (%) | 190 (9.9) | 97 (5.1) | 93 (4.8) | 0.789 | 86 (13.9) | 37 (12.0) | 49 (15.9) | 0.113 |
| Chronic obstructive pulmonary disease, n (%) | 229 (11.9) | 112 (11.6) | 117 (12.2) | 0.694 | 99 (16.0) | 47 (15.2) | 52 (16.8) | 0.044 |
| Diabetes, n (%) | 397 (20.7) | 212 (22.0) | 185 (19.3) | 0.143 | 139 (22.5) | 70 (22.7) | 69 (22.3) | 0.010 |
| Solid tumor, n (%) | 238 (12.4) | 142 (14.8) | 96 (10.0) | **0.002** | 75 (12.1) | 36 (11.7) | 39 (12.6) | 0.028 |
| Hematologic malignancy, n (%) | 37 (1.9) | 22 (2.3) | 15 (1.6) | 0.164 | 12 (1.9) | 9 (2.9) | 3 (1.0) | 0.138 |
| Cirrhosis, n (%) | 58 (3.0) | 31 (3.2) | 27 (2.8) | 0.608 | 22 (3.6) | 10 (3.2) | 12 (3.9) | 0.038 |
| Immune insufficiency, n (%) | 147 (7.7) | 71 (7.4) | 76 (7.9) | 0.644 | 48 (7.8) | 24 (7.8) | 24 (7.8) | 0.000 |
| Autoimmune disease, n (%) | 65 (3.4) | 29 (3.0) | 36 (3.8) | 0.366 | 16 (2.6) | 8 (2.6) | 8 (2.6) | 0.000 |
| Prior ICU stay, median (IQR), day | 0.0 (0.0 to 6.0) | 1.0 (0.0 to 7.0) | 0.0 (0.0 to 5.0) | **0.028** |  |  |  | 0.057 |
| Prior antibiotics exposure, n (%) | 1338 (69.7) | 703 (73.1) | 635 (66.4) | **0.001** | 457 (73.9) | 229 (74.1) | 228 (73.8) | 0.007 |
| Mechanical ventilation, n (%) | 1534 (79.9) | 793 (82.4) | 741 (77.4) | **0.006** | 527 (85.3) | 262 (84.8) | 265 (85.8) | 0.028 |
| Vasopressor, n (%) | 997 (52.0) | 517 (53.7) | 480 (50.2) | 0.116 | 330 (53.4) | 156 (50.5) | 174 (56.3) | 0.116 |
| Body temperature, median (IQR), degree | 38.5 (36.9 to 38.7) | 38.1 (36.8 to 38.6) | 37.9 (36.8 to 38.6) | **0.013** | 38.0 (37.0 to 38.7) | 38.1 (36.9 to 38.8) | 38.0 (37.0 to 38.7) | 0.052 |
| Heart rate, median (IQR), beat per minute | 114 (98 to 130) | 115 (100 to 131) | 112 (97 to 129.5) | **0.007** | 115 (100 to 133) | 111 (100 to 130) | 120 (101 to 133) | 0.099 |
| Respiratory rate, median (IQR), breath per minute | 25 (21 to 30) | 25 (21 to 30) | 25 (21 to 30) | 0.931 | 25 (22 to 32) | 25 (22 to 30) | 26 (22 to 32) | 0.099 |
| Systolic blood pressure, median (IQR), mmHg | 114 (94 to 140) | 115 (93 to 140) | 113 (94 to 138) | 0.536 | 118 (97 to 144) | 119 (96 to 143) | 117 (96 to 142) | 0.070 |
| Laboratory findings | | | | | | | | |
| White blood cell count, median (IQR), ×109/L | 12.8 (8.5 to 17.4) | 12.7 (8.5 to 17.6) | 12.9 (8.5 to 17.3) | 0.821 | 13.2 (8.8 to 17.9) | 12.6 (7.9 to 18.2) | 13.7 (9.3 to 17.1) | 0.120 |
| Procalcitonin, median (IQR), ng/mL | 2.37 (0.53 to 10.55) | 2.61 (0.59 to 12.9) | 2.01 (0.50 to 9.41) | **0.046** | 1.73 (0.41 to 7.76) | 1.49 (0.37 to 8,78) | 2.00 (0.50 to 6.59) | 0.039 |
| C-reactive protein, median (IQR), | 93.2 (35.6 to 176.04) | 91.0 (35.4 to 169.9) | 94.2 (35.8 to 183.0) | 0.508 | 89.0 (35.2 to 160.0) | 88.4 (32.1 to 153.0) | 90.0 (40.9 to 169.9) | 0.120 |
| Serum lactate, median (IQR), mmol/L | 1.9 (1.2 to 3.4) | 1.9 (1.2 to 3.4) | 1.9 (1.2 to 3.5) | 0.583 | 1.6 (1.2 to 2.9) | 1.6 (1.1 to 2.9) | 1.7 (1.2 to 2.9) | 0.084 |
| Hematocrit, median (IQR), % | 31.1 (26.2 to 37.0) | 31.0 (26.0 to 36.7) | 31.5 (26.7 to 37.6) | 0.132 | 31.0 (26.0 to 36.6) | 31.8 (27.1 to 36.0) | 30.7 (25.0 to 36.8) | 0.041 |
| Platelet count, median (IQR), ×109/L | 155 (92 to 233) | 160 (92 to 239) | 151 (92 to 225) | 0.165 | 170 (115 to 246) | 166 (115 to 254) | 179 (115 to 240) | 0.118 |
| Serum creatine, median (IQR), | 90.0 (60.0 to 165.6) | 90.0 (60.0 to 164.0) | 89.7 (60.0 to 167.2) | 0.812 | 89.3 (58.4 to 167.0) | 85 (59 to 151) | 96.5 (58.0 to 198.4) | 0.056 |
| Prothrombin time, median (IQR), second | 14.6 (12.9 to 17.1) | 14.8 (13.1 to 17.3) | 14.5 (12.8 to 17.0) | 0.150 | 14.3 (12.7 to 16.5) | 14.3 (12.7 to 17.0) | 14.2 (12.7 to 16.4) | 0.007 |
| Activated partial thromboplastin time, median (IQR), second | 36.8 (30.8 to 46.8) | 37.2 (31.3 to 47.7) | 36.5 (30.2 to 45.7) | 0.070 | 35.7 (30.4 to 44.3) | 36.5 (30.7 to 45.2) | 34.4 (30.0 to 43.7) | 0.054 |
| D-dimer, median (IQR), second | 9.20 (2.87 to 1298.50) | 8.95 (2.91 to 1378.25) | 9.32 (2.87 to 1204.00) | 0.862 | 8.29 (2.74 to 1371.00) | 6.95 (2.54 to 880.00) | 16.2 (3.56 to 2203.0) | 0.149 |
| PaO2 to FiO2 ratio | 206.0 (138.7 to 291.0) | 209.9 (142.0 to 290.0) | 202.7 (131.7 to 293.5) | 0.505 | 174.9 (120.0 to 227.5) | 179.0 (116.0 to 227.5) | 174.8 (120.0 to 226.6) | 0.045 |
| APACHE II score, median (IQR) | 17 (12 to 23) | 18 (13 to 24) | 16 (11 to 22) | **< 0.001** | 17 (13 to 23) | 17 (13 to 23) | 17 (13 to 22) | 0.042 |
| SOFA score, median (IQR) | 7 (5 to 11) | 8 (5 to 11) | 7 (4 to 10) | **0.002** | 7 (5 to 10) | 7 (5 to 9) | 7 (5 to 10) | 0.056 |
| **Infection type** | | | | | | | | |
| Community acquired, n (%) | 1246 (64.9) | 572 (59.5) | 674 (70.4) | **< 0.001** | 397 (64.2) | 197 (63.8) | 200 (64.7) | 0.019 |
| Hospital acquired, n (%) | 640 (33.4) | 347 (38.9) | 266 (27.8) | **< 0.001** | 214 (34.6) | 111 (35.9) | 103 (33.3) | 0.055 |
| Healthcare relevant, n (%) | 33 (1.7) | 16 (1.7) | 17 (1.8) | 0.849 | 7 (1.1) | 1 (0.3) | 6 (1.9) | 0.154 |
| **Infection site** |  |  |  |  |  |  |  |  |
| Pneumonia | 1345 (70.1) | 706 (73.4) | 639 (66.8) | **0.002** | 618 (100) | 309 (100) | 309 (100) | -- |
| Bloodstream infection | 96 (5.0) | 77 (8.0) | 19 (2.0) | **< 0.001** | 26 (4.2) | 14 (4.5) | 12 (3.9) | 0.030 |
| Abdominal infection | 483 (25.2) | 232 (24.1) | 251 (26.1) | 0.287 | 68 (11.0) | 34 (11.0) | 34 (11.0) | 0.000 |
| Urologic infection | 148 (7.7) | 84 (8.7) | 64 (6.7) | 0.093 | 37 (6.0) | 23 (7.4) | 14 (4.5) | 0.123 |
| CNS infection | 56 (2.9) | 22 (2.3) | 34 (3.6) | 0.099 | 19 (3.1) | 6 (1.9) | 13 (4.2) | 0.134 |
| **Outcomes** | | | | | | | | |
| Ventilation days, median (IQR), day | 4 (1 to 8) | 4 (1 to 7) | 3 (1 to 7) | **< 0.001** | 5 (2 to 9) | 6 (2 to 10) | 5 (2 to 9) | 0.202\* |
| Targeted antibiotics, n (%) | 528 (27.5) | 399 (41.5) | 129 (13.5) | **< 0.001** | 200 (32.4) | 142 (46.0) | 58 (18.8) | **< 0.001\*** |
| ***Resolve*** | | | | | | | | |
| Completely resolve | 306 (15.9) | 148 (15.4) | 158 (16.5) | 0.714 | 81 (13.1) | 49 (15.9) | 32 (10.4) | 0.061\* |
| Partially resolve | 1138 (59.3) | 570 (59.3) | 568 (59.4) | 358 (57.9) | 180 (58.3) | 178 (57.6) |
| No resolve | 475 (24.8) | 244 (25.4) | 231 (24.1) | 179 (29.0) | 80 (25.9) | 99 (32.0) |
| **90-day mortality, n (%)** | **691 (36.0)** | **361 (37.5)** | **330 (34.5)** | **0.165** | **267 (43.2)** | **118 (38.2)** | **149 (48.2)** | **0.012\*** |

Abbreviations: APACHE II Acute Physiology and Chronic Health Evaluation II, CNS central nervous system, IQR interquartile range, SOFA Sequential Organ Function Assessment.

\* Evaluated by P-value.