TableS1 Baseline characteristics of the study population after IPTW.

|  |  |  |  |
| --- | --- | --- | --- |
| Characteristic | After IPTW | 　 | 　 |
| TUR | TR | P  | SMD |
| n | 11429.9 | 9285.4 |  |  |
| Age(year) |  65.44 (15.83) |  64.23 (15.26) | 0.024  | 0.078  |
| Gender (%) |  |  | 0.002  | 0.107  |
| male |  5945.9 (52.0)  |  5324.4 (57.3)  |  |  |
| female |  5484.0 (48.0)  |  3961.0 (42.7)  |  |  |
| Weight(kg) |  82.16 (26.45) |  81.33 (25.53) | 0.336  | 0.032  |
| Ethnicity (%) |  |  | 0.263  | 0.054  |
| White |  7705.5 (67.4)  |  6029.7 (64.9)  |  |  |
| Black |  1292.2 (11.3)  |  1090.3 (11.7)  |  |  |
| Others |  2432.2 (21.3)  |  2165.4 (23.3)  |  |  |
| First care unit (%) |  |  | 0.002  | 0.131  |
| MICU/SICU/TSICU |  8951.4 (78.3)  |  7660.0 (82.5)  |  |  |
| CCU |  2104.2 (18.4)  |  1269.1 (13.7)  |  |  |
| Others |  374.3 ( 3.3)  |  356.4 ( 3.8)  |  |  |
| Severe Score |  |  |  |  |
| SOFA  |  3.56 (1.86) |  3.64 (1.95) | 0.131  | 0.045  |
| SAPS III |  59.87 (24.91) |  62.87 (25.30) | <0.001 | 0.120  |
| Ventilator (%) |  |  | 0.037  | 0.079  |
| no |  3767.8 (33.0)  |  2722.2 (29.3)  |  |  |
| yes |  7662.1 (67.0)  |  6563.2 (70.7)  |  |  |
| Vasopressor (%) |  |  | 0.001  | 0.117  |
| no |  6458.1 (56.5)  |  4703.4 (50.7)  |  |  |
| yes |  4971.8 (43.5)  |  4582.0 (49.3)  |  |  |
| CRRT (%) |  |  | 0.004  | 0.082  |
| no |  10563.2 (92.4)  |  8366.0 (90.1)  |  |  |
| yes |  866.7 ( 7.6)  |  919.4 ( 9.9)  |  |  |
| Charlson comorbidity index  |  3.11 (2.57) |  3.07 (2.44) | 0.653  | 0.015  |
| Comorbidities |  |  |  |  |
| myocardial infarct (%) |  |  | 0.035  | 0.076  |
| no |  9656.0 (84.5)  |  7580.2 (81.6)  |  |  |
| yes |  1773.9 (15.5)  |  1705.2 (18.4)  |  |  |
| congestive heart failure (%) |  |  | 0.360  | 0.033  |
| no |  7789.6 (68.2)  |  6469.7 (69.7)  |  |  |
| yes |  3640.3 (31.8)  |  2815.7 (30.3)  |  |  |
| peripheral vascular disease (%) |  |  | 0.257  | 0.042  |
| no |  10112.0 (88.5)  |  8336.5 (89.8)  |  |  |
| yes |  1317.9 (11.5)  |  948.9 (10.2)  |  |  |
| cerebrovascular disease (%) |  |  | 0.447  | 0.026  |
| no |  9755.1 (85.3)  |  7837.7 (84.4)  |  |  |
| yes |  1674.8 (14.7)  |  1447.7 (15.6)  |  |  |
| dementia (%) |  |  | 0.936  | 0.003  |
| no |  10823.3 (94.7)  |  8786.7 (94.6)  |  |  |
| yes |  606.6 ( 5.3)  |  498.8 ( 5.4)  |  |  |
| chronic pulmonary disease (%) |  |  | 0.618  | 0.017  |
| no |  8484.2 (74.2)  |  6962.2 (75.0)  |  |  |
| yes |  2945.7 (25.8)  |  2323.2 (25.0)  |  |  |
| rheumatic disease (%) |  |  | 0.572  | 0.022  |
| no |  11004.1 (96.3)  |  8977.0 (96.7)  |  |  |
| yes |  425.8 ( 3.7)  |  308.5 ( 3.3)  |  |  |
| peptic ulcer disease (%) |  |  | 0.397  | 0.023  |
| no |  11080.0 (96.9)  |  8963.5 (96.5)  |  |  |
| yes |  349.9 ( 3.1)  |  321.9 ( 3.5)  |  |  |
| mild liver disease (%) |  |  | 0.009  | 0.069  |
| no |  9638.7 (84.3)  |  7589.0 (81.7)  |  |  |
| yes |  1791.2 (15.7)  |  1696.4 (18.3)  |  |  |
| severe liver disease (%) |  |  | 0.048 | 0.047  |
| no | 10510.0 (92.0) | 8414.4 (90.6) |  |  |
| yes | 919.9 ( 8.0) | 871.1 ( 9.4) |  |  |
| diabetes uncomplicated (%) |  |  | 0.176  | 0.048  |
| no |  8563.0 (74.9)  |  7145.9 (77.0)  |  |  |
| yes |  2866.9 (25.1)  |  2139.5 (23.0)  |  |  |
| diabetes complicated (%) |  |  | 0.559  | 0.021  |
| no |  10102.6 (88.4)  |  8269.5 (89.1)  |  |  |
| yes |  1327.3 (11.6)  |  1015.9 (10.9)  |  |  |
| paraplegia (%) |  |  | 0.970  | 0.001  |
| no |  10748.8 (94.0)  |  8729.1 (94.0)  |  |  |
| yes |  681.1 ( 6.0)  |  556.4 ( 6.0)  |  |  |
| renal disease (%) |  |  | 0.076  | 0.067  |
| no |  8379.0 (73.3)  |  7076.3 (76.2)  |  |  |
| yes |  3050.9 (26.7)  |  2209.1 (23.8)  |  |  |
| malignant cancer (%) |  |  | 0.682  | 0.014  |
| no |  9939.2 (87.0)  |  8119.0 (87.4)  |  |  |
| yes |  1490.7 (13.0)  |  1166.4 (12.6)  |  |  |
| metastatic solid tumor (%) |  |  | 0.965  | 0.002  |
| no |  10798.6 (94.5)  |  8769.1 (94.4)  |  |  |
| yes |  631.3 ( 5.5)  |  516.4 ( 5.6)  |  |  |
| aids (%) |  |  | 0.409  | 0.022  |
| no |  11320.9 (99.0)  |  9176.2 (98.8)  |  |  |
| yes |  109.0 ( 1.0)  |  109.2 ( 1.2)  |  |  |
| Laboratory tests |  |  |  |  |
| White blood cell (K/uL) |  13.52 (11.16) |  13.39 (9.67) | 0.688  | 0.013  |
| Hemoglobin (g/dl) |  10.18 (2.14) |  10.24 (2.19) | 0.410  | 0.027  |
| Platelet (K/uL) |  208.84 (123.29) |  198.41 (129.87) | 0.018  | 0.082  |
| Lactate (mmol/L) |  2.20 (1.70) |  2.28 (1.80) | 0.094  | 0.045  |
| Creatinine (mg/dl) |  1.74 (1.76) |  1.70 (1.57) | 0.358  | 0.029  |
| Urea nitrogen (mg/dl) |  33.39 (26.16) |  32.66 (26.24) | 0.410  | 0.028  |
| Glucose (mg/dl) |  152.17 (85.41) |  145.82 (75.96) | 0.007  | 0.079  |
| PaCO2 (mmhg) |  42.15 (12.70) |  41.17 (11.47) | 0.009  | 0.081  |
| pH |  7.36 (0.10) |  7.36 (0.10) | 0.038  | 0.063  |
| PaO2 (mmhg) |  123.30 (101.75) |  117.86 (96.83) | 0.105  | 0.055  |
| Vital signs |  |  |  |  |
| Heart rate (beats/min) |  88.52 (16.60) |  89.44 (16.45) | 0.086  | 0.055  |
| Mean arterial pressure (mmhg) |  75.42 (10.30) |  75.73 (10.53) | 0.361  | 0.030  |
| Respiratory rate (breaths/min) |  20.20 (4.11) |  20.30 (4.10) | 0.414  | 0.026  |
| Temperature (℃) |  36.90 (0.61) |  36.92 (0.59) | 0.510  | 0.020  |
| SpO2 (%) |  96.95 (2.14) |  97.10 (2.03) | 0.027  | 0.070  |
| urine output(ml) |  1624.73 (1231.89) | 1571.10 (1228.90) | 0.176  | 0.044  |
| Outcomes |  |  |  |  |
| ICU mortality |  |  | 0.109 | 0.048 |
| no |  9935.1 (86.9) | 7916.3 (85.3) |  |  |
| yes |  1494.8 (13.1) | 1369.1 (14.7) |  |  |
| Length of ICU stay (days) |  7.95 (11.29) |  10.44 (10.42) | <0.001 | 0.230 |

TableS2 Subgroup analysis of the associations between ICU all-cause mortality and thiamine received.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 　 | TUR group | TR group | 　 | 　 |
| 　 | 　 | HR(95%CI) | p-value | p-interaction |
| Age | 　 | 　 | 　 | 0.113  |
| <65(n=5210) | Reference | 0.85(0.71,1.03) | 0.099  |  |
| ≥65(n=6343) | Reference | 0.78(0.64,0.95) | 0.012  |  |
| Gender |  |  |  | 0.312  |
| male(n=6040) | Reference | 0.92(0.78,1.09) | 0.347  |  |
| female(n=5513) | Reference | 0.52(0.12,2.16) | 0.367  |  |
| SOFA |  |  |  | 0.156  |
| <6(n=4687) | Reference | 0.52(0.30,0.89) | 0.018  |  |
| ≥6(n=6866) | Reference | 0.86(0.75,0.99) | 0.036  |  |
| SASPIII |  |  |  | 0.700  |
| <55(n=5595) | Reference | 0.71(0.43,1.16) | 0.170  |  |
| ≥55(n=5958) | Reference | 0.85(0.74,0.98) | 0.026  |  |
| Ventilator |  |  |  | 0.491  |
| No(n=3759) | Reference | 0.50(0.23,1.08) | 0.078  |  |
| Yes(n=7794) | Reference | 0.84(0.73,0.96) | 0.010  |  |
| Vasopressor |  |  |  | 0.298  |
| No(n=6478) | Reference | 0.77(0.53,1.13) | 0.181  |  |
| Yes(n=5075) | Reference | 0.85(0.73,0.98) | 0.023  |  |
| CRRT |  |  |  | 0.410  |
| No(n=10639) | Reference | 0.79(0.67,0.93) | 0.004  |  |
| Yes(n=914) | Reference | 0.94(0.74,1.19) | 0.601  |  |
| Myocardial infarct |  |  |  | 0.034\* |
| No(n=9735) | Reference | 0.88(0.76,1.01) | 0.075  |  |
| Yes(n=1818) | Reference | 0.61(0.44,0.87) | 0.006  |  |
| Congestive heart failure |  |  |  | 0.425  |
| No(n=7897) | Reference | 0.82(0.70,0.97) | 0.019  |  |
| Yes(n=3656) | Reference | 0.83(0.65,1.06) | 0.138  |  |
| Cerebrovascular disease |  |  |  | 0.052  |
| No(n=9847) | Reference | 0.79(0.68,0.92) | 0.002  |  |
| Yes(n=1706) | Reference | 1.10(0.79,1.53) | 0.566  |  |
| Mild liver disease |  |  |  | 0.186  |
| No(n=9682) | Reference | 0.79(0.67,0.93) | 0.006  |  |
| Yes(n=1871) | Reference | 0.88(0.70,1.10) | 0.250  |  |
| Sever liver disease |  |  |  | 0.095  |
| No(n=10580) | Reference | 0.79(0.67,0.92) | 0.002  |  |
| Yes(n=973) | Reference | 0.94(0.70,1.27) | 0.675  |  |
| Diabetes uncomplicated |  |  |  | 0.594  |
| No(n=8689) | Reference | 0.82(0.70,0.95) | 0.008  |  |
| Yes(n=2864) | Reference | 0.83(0.62,1.12) | 0.237  |  |
| Diabetes complicated |  |  |  | 0.412  |
| No(n=10224) | Reference | 0.81(0.70,0.94) | 0.005  |  |
| Yes(n=1329) | Reference | 0.97(0.62,1.51) | 0.901  | 　 |



Figure S1 Distribution of 1:1 propensity Matching Score in Cluster(A) and Histogram(B).



Figure S2 SMD of covariable before and after PSM, IPTW.