**Supplementary material**

**Supplementary tables**

**Table S1** **Baseline characteristics of the study population stratified by aortic dissection**

|  |  |  |
| --- | --- | --- |
| Variables | Without dissection | With dissection |
| Abdominal aortic aneurysm(n=618) | Thoracic aortic aneurysm(n=202) | P value | Abdominal aortic aneurysm(n=59) | Thoracic aortic aneurysm(n=95) | P value |
| Age (years) | 72 (66-79) | 66 (55-75) | **<0.001** | 65 (55.5-70.5) | 60 (49-70) | 0.152 |
| Male | 492 (79.61%) | 125 (61.88%) | **<0.001** | 44 (74.58%) | 65 (68.42%) | 0.414 |
| Ethnicity |  |  | **0.002** |  |  | 0.924 |
| Caucasian | 537 (86.89%) | 162 (80.20%) |  | 40 (67.80%) | 62 (65.26%) |  |
| African American | 32 (5.18%) | 24 (11.88%) |  | 15 (25.42%) | 25 (26.32%) |  |
| Asian | 7 (1.13%) | 4 (1.98%) |  | 0 (0.00%) | 1 (1.05%) |  |
| Hispanic | 9 (1.46%) | 1 (0.50%) |  | 1 (1.69%) | 1 (1.05%) |  |
| Native American | 0 (0.00%) | 2 (0.99%) |  | 0 (0.00%) | 1 (1.05%) |  |
| Other/Unknown | 33 (5.34%) | 9 (4.46%) |  | 3 (5.08%) | 5 (5.26%) |  |
| BMI (kg/m2) | 27.39 (24.16-31.00) | 27.64 (24.12-31.60) | 0.746 | 27.98 (25.38-32.22) | 29.51 (25.07-34.34) | 0.311 |
| Year of the hospital discharge date |  |  | 0.871 |  |  | 0.599 |
| 2014 | 308 (49.84%) | 102 (50.50%) |  | 26 (44.07%) | 46 (48.42%) |  |
| 2015 | 310 (50.16%) | 100 (49.50%) |  | 33 (55.93%) | 49 (51.58%) |  |
| Elective surgery | 558 (90.29%) | 190 (94.06%) | 0.100 | 45 (76.27%) | 61 (64.21%) | 0.116 |
| Rupture of aortic aneurysm | 69 (11.17%) | 7 (3.47%) | **0.001** | 0 (0.00%) | 0 (0.00%) | - |
| Type of ICU |  |  | **<0.001** |  |  | 0.348 |
| Med-Surg ICU | 221 (35.76%) | 38 (18.81%) |  | 11 (18.64%) | 17 (17.89%) |  |
| CSICU | 104 (16.83%) | 25 (12.38%) |  | 11 (18.64%) | 14 (14.74%) |  |
| CTICU | 75 (12.14%) | 64 (31.68%) |  | 12 (20.34%) | 33 (34.74%) |  |
| CCU-CTICU | 79 (12.78%) | 51 (25.25%) |  | 16 (27.12%) | 23 (24.21%) |  |
| SICU | 89 (14.40%) | 19 (9.41%) |  | 8 (13.56%) | 8 (8.42%) |  |
| Cardiac ICU | 27 (4.37%) | 3 (1.49%) |  | 0 (0.00%) | 0 (0.00%) |  |
| Neuro ICU | 17 (2.75%) | 2 (0.99%) |  | 1 (1.69%) | 0 (0.00%) |  |
| MICU | 6 (0.97%) | 0 (0.00%) |  | 0 (0.00%) | 0 (0.00%) |  |
| Location admitted from |  |  | 0.073 |  |  | 0.934 |
| Operating Room | 474 (76.70%) | 165 (81.68%) |  | 49 (83.05%) | 79 (83.16%) |  |
| Recovery Room | 113 (18.28%) | 34 (16.83%) |  | 9 (15.25%) | 13 (13.68%) |  |
| PACU | 31 (5.02%) | 3 (1.49%) |  | 1 (1.69%) | 3 (3.16%) |  |
| Acute physiology IVa score | 29.00 (22.00-40.00) | 37.00 (28.00-53.00) | **<0.001** | 40.00 (29.00-66.00) | 57.00 (36.50-80.00) | **0.026** |
| APACHE IVa score | 45.00 (36.00-56.00) | 50.00 (35.50-67.50) | **0.013** | 56.00 (40.00-81.00) | 67.00 (44.00-87.50) | 0.087 |
| Lab variables in APACHE IVa score |  |  |  |  |  |  |
| Temperature (°C) | 36.30 (36.00-36.60) | 36.20 (35.60-36.60) | 0.069 | 36.30 (35.60-36.70) | 35.90 (35.30-36.50) | 0.058 |
| Mean blood pressure (mmHg) | 72.00 (58.00-133.00) | 63.00 (53.00-128.00) | **0.002** | 64.00 (54.00-135.00) | 59.00 (51.00-127.00) | 0.503 |
| Heart rate (/min) | 95.00 (57.00-108.00) | 96.50 (82.50-109.75) | **0.037** | 102.00 (90.25-110.75) | 102.00 (73.50-117.50) | 0.801 |
| Respiratory rate (/min) | 15.00 (10.00-32.00) | 13.00 (8.00-30.00) | 0.059 | 11.00 (7.00-30.00) | 11.00 (6.50-29.00) | 0.700 |
| FiO2 (%) | 50.00 (38.00-80.00) | 50.00 (40.00-80.00) | 0.113 | 60.00 (51.50-80.00) | 60.00 (45.00-100.00) | 0.965 |
| PaO2 (mmHg) | 98.00 (79.00-159.50) | 100.00 (78.50-150.00) | 0.812 | 127.50 (90.78-151.50) | 115.00 (80.50-155.00) | 0.184 |
| PaCO2 (mmHg) | 43.00 (37.25-47.00) | 41.90 (37.00-47.00) | 0.580 | 42.00 (36.00-44.67) | 42.10 (38.00-46.20) | 0.350 |
| Arterial pH | 7.34 (7.30-7.38) | 7.37 (7.32-7.40) | **0.009** | 7.36 (7.33-7.42) | 7.37 (7.34-7.43) | 0.561 |
| Sodium (mEq/L) | 138.00 (136.00-140.00) | 140.00 (137.05-143.00) | **<0.001** | 140.00 (135.00-142.25) | 140.00 (138.00-147.00) | 0.144 |
| Urine output (mL/24h) | 1585.01 (951.44-2407.45) | 2031.09 (1216.51-2912.28) | **0.017** | 1740.79 (622.21-3170.90) | 1447.89 (1164.93-2057.96) | 0.769 |
| Creatinine (mg/dL) | 0.98 (0.80-1.31) | 0.90 (0.72-1.30) | 0.054 | 1.25 (0.91-1.70) | 1.29 (0.90-1.78) | 0.792 |
| Blood urea nitrogen (mg/dL) | 16.00 (13.00-22.00) | 16.00 (12.12-22.50) | 0.942 | 19.00 (15.00-26.50) | 20.00 (14.00-26.00) | 0.903 |
| Glucose (mg/dL) | 137.00 (107.00-177.75) | 149.00 (100.25-180.75) | 0.451 | 161.50 (110.25-206.00) | 153.00 (98.00-192.00) | 0.461 |
| Albumin (g/dL) | 2.90 (2.60-3.30) | 3.00 (2.50-3.48) | 0.395 | 2.70 (2.40-3.10) | 2.80 (2.40-3.20) | 0.944 |
| Bilirubin (mg/dL) | 0.80 (0.50-1.15) | 1.20 (0.50-2.08) | **0.029** | 1.10 (0.60-1.87) | 1.10 (0.90-1.40) | 0.959 |
| Hematocrit (%) | 32.95 (29.20-36.70) | 30.05 (26.35-33.40) | **<0.001** | 27.25 (23.95-33.08) | 27.50 (24.90-32.00) | 0.987 |
| WBC (x1000/mm3) | 10.20 (7.96-13.64) | 12.30 (8.30-16.60) | **0.003** | 11.50 (7.37-15.43) | 11.65 (7.88-16.63) | 0.543 |
| Intubated | 93 (15.05%) | 86 (42.57%) | **<0.001** | 27 (45.76%) | 49 (51.58%) | 0.483 |
| Ventilation | 108 (17.48%) | 75 (37.13%) | **<0.001** | 30 (50.85%) | 56 (58.95%) | 0.325 |
| Dialysis | 3 (0.49%) | 2 (0.99%) | 0.602 | 1 (1.69%) | 1 (1.05%) | 1.000 |

Note: P value < 0.05 was presented in bold.

Abbreviations: BMI, body mass index; ICU, intensive care unit; Med-Surg ICU, medical-surgical intensive care unit; CSICU, cardiac surgery intensive care unit; CTICU, cardiothoracic intensive care unit; CCU-CTICU, coronary care unit-cardiothoracic intensive care unit; SICU, surgical intensive care unit; MICU, medical intensive care unit; PACU, post anesthesia care unit; APACHE, Acute Physiology And Chronic Health Evaluation; FiO2, fraction of inspired oxygen; PaO2, partial pressure of oxygen; PaCO2, partial pressure of carbon dioxide; WBC, white blood cell.

**Table S2 Clinical outcomes of the study population stratified by aortic dissection and length of ICU stay**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Clinical outcomes | All patients | Abdominal aortic aneurysm | Thoracic aortic aneurysm | P value |
| Without dissection | n=820 | n=618 | n=202 |  |
| ICU mortality | 26 (3.17%) | 13 (2.10%) | 13 (6.44%) | **0.002** |
| Length of ICU stay <2 days | 6 (1.12%) | 4 (0.90%) | 2 (2.27%) |  |
| Length of ICU stay 2-7 days | 9 (3.91%) | 5 (3.60%) | 4 (4.40%) |  |
| Length of ICU stay ≥7 days | 11 (19.64%) | 4 (12.12%) | 7 (30.43%) |  |
| P value | **<0.001** | **<0.001** | **<0.001** |  |
| Hospital mortality | 39 (4.76%) | 20 (3.24%) | 19 (9.41%) | **<0.001** |
| Length of ICU stay <2 days | 7 (1.31%) | 5 (1.12%) | 2 (2.27%) |  |
| Length of ICU stay 2-7 days | 17 (7.39%) | 10 (7.19%) | 7 (7.69%) |  |
| Length of ICU stay ≥7 days | 15 (26.79%) | 5 (15.15%) | 10 (43.48%) |  |
| P value | **<0.001** | **<0.001** | **<0.001** |  |
| Length of ICU stay (days) | 1.24 (0.96-2.78) | 1.13 (0.93-2.16) | 2.15 (1.22-3.97) | **<0.001**  |
| Length of hospital stay (days) | 4.31 (1.79-7.42) | 2.99 (1.37-6.69) | 6.27 (4.36-9.48) | **<0.001**  |
| With dissection | n=154 | n=59 | n=95 |  |
| ICU mortality | 18 (11.69%) | 3 (5.08%) | 15 (15.79%) | **0.044** |
| Length of ICU stay <2 days | 3 (7.14%) | 1 (5.56%) | 2 (8.33%) |  |
| Length of ICU stay 2-7 days | 11 (14.86%) | 0 (0.00%) | 11 (22.00%) |  |
| Length of ICU stay ≥7 days | 4 (10.53%) | 2 (11.76%) | 2 (9.52%) |  |
| P value | 0.446 | 0.184 | 0.215 |  |
| Hospital mortality | 22 (14.29%) | 5 (8.47%) | 17 (17.89%) | 0.104 |
| Length of ICU stay <2 days | 5 (11.90%) | 2 (11.11%) | 3 (12.50%) |  |
| Length of ICU stay 2-7 days | 12 (16.22%) | 0 (0.00%) | 12 (24.00%) |  |
| Length of ICU stay ≥7 days | 5 (13.16%) | 3 (17.65%) | 2 (9.52%) |  |
| P value | 0.795 | 0.077 | 0.253 |  |
| Length of ICU stay (days) | 3.34 (1.89-6.69) | 3.16 (1.80-9.07) | 3.42 (2.01-6.28) | 0.829 |
| Length of hospital stay (days) | 8.10 (4.42-13.24) | 8.33 (4.42-16.99) | 7.54 (4.42-11.82) | 0.267 |

Note: P value < 0.05 was presented in bold.

Abbreviations: ICU, intensive care unit.