

Supplementary Table 1. Baseline characteristics of patients, hospitals, and procedures after propensity score matching

| | Total (n = 44,458) | Volatile anesthesia (n = 22,229) | Total intravenous anesthesia (n = 22,229) | Absolute standardized difference |
|--|-----------------------|-------------------------------------|---|--|
| Age, years | | | | |
| ≤59 | 8,275 (18.6) | 4,119 (18.5) | 4,156 (18.7) | 0.004 |
| 60–69 | 13,839 (31.1) | 6,935 (31.2) | 6,904 (31.1) | 0.003 |
| 70–79 | 15,312 (34.4) | 7,727 (34.8) | 7,585 (34.1) | 0.013 |
| ≥80 | 7,032 (15.8) | 3,448 (15.5) | 3,584 (16.1) | 0.017 |
| Sex, male | 25,502 (57.4) | 12,807 (57.6) | 12,695 (57.1) | 0.010 |
| Body mass index, kg/m ² | | | | |
| 18.5 | 5,081 (11.4) | 2,470 (11.1) | 2,611 (11.7) | 0.020 |
| 18.5–24.9 | 30,148 (67.8) | 15,189 (68.3) | 14,959 (67.3) | 0.022 |
| 25.0–29.9 | 8,284 (18.6) | 4,129 (18.6) | 4,155 (18.7) | 0.003 |
| 30.0–34.9 | 841 (1.9) | 395 (1.8) | 446 (2.0) | 0.017 |
| ≥35.0 | 104 (0.2) | 46 (0.2) | 58 (0.3) | 0.011 |
| Charlson comorbidity index | | | | |
| 2 | 34,700 (78.1) | 17,567 (79.0) | 17,133 (77.1) | 0.047 |
| 3 | 2,563 (5.8) | 1,228 (5.5) | 1,335 (6.0) | 0.021 |
| ≥4 | 7,195 (16.2) | 3,434 (15.4) | 3,761 (16.9) | 0.040 |
| Cancer stage | | | | |
| 0 or I | 16,429 (37.0) | 8,383 (37.7) | 8,046 (36.2) | 0.031 |
| II | 11,470 (25.8) | 5,763 (25.9) | 5,707 (25.7) | 0.006 |
| III | 12,109 (27.2) | 6,012 (27.0) | 6,097 (27.4) | 0.009 |
| IV | 4,450 (10.0) | 2,071 (9.3) | 2,379 (10.7) | 0.046 |
| Preoperative adjuvant therapy | 1,486 (3.3) | 642 (2.9) | 844 (3.8) | 0.051 |
| Postoperative adjuvant therapy | 16,159 (36.3) | 7,978 (35.9) | 8,181 (36.8) | 0.019 |
| Preoperative renal replacement therapy | 204 (0.5) | 97 (0.4) | 107 (0.5) | 0.007 |
| Type of surgery | | | | |
| Esophagectomy | 2,804 (6.3) | 1,356 (6.1) | 1,448 (6.5) | 0.017 |
| Gastrectomy | 11,558 (26.0) | 5,809 (26.1) | 5,749 (25.9) | 0.006 |
| Hepatectomy | 2,376 (5.3) | 1,161 (5.2) | 1,215 (5.5) | 0.011 |
| Cholecystectomy | 789 (1.8) | 362 (1.6) | 427 (1.9) | 0.022 |
| Pancreatectomy | 3,007 (6.8) | 1,420 (6.4) | 1,587 (7.1) | 0.030 |
| Colectomy | 17,333 (39.0) | 8,854 (39.8) | 8,479 (38.1) | 0.035 |
| Rectal cancer surgery | 6,591 (14.8) | 3,267 (14.7) | 3,324 (15.0) | 0.007 |
| Year of surgery | | | | |
| 2010 (Jul–Dec) | 4,506 (10.1) | 2,191 (9.9) | 2,315 (10.4) | 0.018 |
| 2011 (Jan–Dec) | 7,616 (17.1) | 3,783 (17.0) | 3,833 (17.2) | 0.006 |
| 2012 (Jan–Dec) | 5,904 (13.3) | 2,947 (13.3) | 2,957 (13.3) | 0.001 |
| 2013 (Jan–Dec) | 5,319 (12.0) | 2,649 (11.9) | 2,670 (12.0) | 0.003 |
| 2014 (Jan–Dec) | 5,279 (11.9) | 2,666 (12.0) | 2,613 (11.8) | 0.007 |
| 2015 (Jan–Dec) | 5,075 (11.4) | 2,556 (11.5) | 2,519 (11.3) | 0.005 |
| 2016 (Jan–Dec) | 4,846 (10.9) | 2,466 (11.1) | 2,380 (10.7) | 0.012 |
| 2017 (Jan–Dec) | 4,978 (11.2) | 2,510 (11.3) | 2,468 (11.1) | 0.006 |
| 2018 (Jan–Mar) | 935 (2.1) | 461 (2.1) | 474 (2.1) | 0.004 |
| Epidural anesthesia | 31,762 (71.4) | 15,979 (71.9) | 15,783 (71.0) | 0.020 |
| Smoking | 19,332 (43.5) | 9,694 (43.6) | 9,638 (43.4) | 0.005 |

| | | | | |
|------------------------------------|---------------|---------------|---------------|-------|
| Blood transfusion | 5,564 (12.5) | 2,584 (11.6) | 2,980 (13.4) | 0.054 |
| Preoperative morphine or oxycodone | 167 (0.4) | 68 (0.3) | 99 (0.4) | 0.023 |
| Academic hospital | 8,298 (18.7) | 4,114 (18.5) | 4,184 (18.8) | 0.008 |
| Hospital volume | | | | |
| Low (<125) | 14,669 (33.0) | 7,428 (33.4) | 7,241 (32.6) | 0.018 |
| Medium (125–245) | 14,902 (33.5) | 7,528 (33.9) | 7,374 (33.2) | 0.015 |
| High (>245) | 14,887 (33.5) | 7,273 (32.7) | 7,614 (34.3) | 0.033 |
| Barthel index | | | | |
| 100 | 41,668 (93.7) | 20,925 (94.1) | 20,743 (93.3) | 0.034 |
| 0–95 | 2,790 (6.3) | 1,304 (5.9) | 1,486 (6.7) | 0.034 |
| Complication after operation | | | | |
| At least one complication | 2,968 (6.7) | 1,502 (6.8) | 1,466 (6.6) | 0.019 |
| Cerebral infarction or hemorrhage | 111 (0.2) | 57 (0.3) | 54 (0.2) | 0.003 |
| Acute coronary events | 34 (0.1) | 19 (0.1) | 15 (0.1) | 0.007 |
| Heart failure | 442 (1.0) | 248 (1.1) | 194 (0.9) | 0.024 |
| Pulmonary embolism | 73 (0.2) | 44 (0.2) | 29 (0.1) | 0.017 |
| Acute hepatic failure | 21 (0.0) | 10 (0.0) | 11 (0.0) | 0.002 |
| Acute renal disease | 79 (0.2) | 44 (0.2) | 35 (0.2) | 0.010 |
| Sepsis | 304 (0.7) | 170 (0.8) | 134 (0.6) | 0.020 |
| Wound infection | 1,223 (2.8) | 593 (2.7) | 630 (2.8) | 0.010 |
| Pneumonia | 707 (1.6) | 369 (1.7) | 338 (1.5) | 0.011 |
| Urinary tract infection | 273 (0.6) | 122 (0.5) | 151 (0.7) | 0.017 |
| Anatomic leakage | 19 (0.0) | 9 (0.0) | 10 (0.0) | 0.007 |

Data are presented as n (%).