Supplementary Table 1. Univariable and multivariable Cox regression analysis for recurrence-free survival in the total study cohort

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | Unadjusted | | |  | Adjusted | | |
|  | Recurrence/Total No. (%) | Hazard ratio | 95% CI | *P* |  | Hazard ratio | 95% CI | *P* |
| Type of anesthesia |  |  |  |  |  |  |  |  |
| Total intravenous anesthesia | 227/3,085 (7.4) | Reference |  |  |  | Reference |  |  |
| Inhalation anesthesia | 122/2,246 (5.4) | 0.79 | 0.63–0.98 | 0.036 |  | 0.91 | 0.68–1.22 | 0.538 |
| Age (years) |  |  |  |  |  |  |  |  |
| Age<40 | 95/759 (12.5) | 2.44 | 1.85–3.22 | <0.001 |  | 2.17 | 1.64–2.87 | <0.001 |
| 40≤Age<50 | 106/1,978 (5.4) | Reference |  |  |  | Reference |  |  |
| Age≥50 | 148/2,594 (5.7) | 1.12 | 0.88–1.44 | 0.355 |  | 0.92 | 0.70–1.19 | 0.515 |
| Anesthetic time (1 hour) |  | 0.96 | 0.80–1.15 | 0.636 |  | 1.01 | 0.84–1.22 | 0.884 |
| ASA physical status |  |  |  |  |  |  |  |  |
| I | 231/3,735 (6.2) | Reference |  |  |  |  |  |  |
| II | 117/1,561 (7.5) | 1.28 | 1.02–1.60 | 0.030 |  | 1.43 | 1.13–1.82 | 0.003 |
| III | 1/35 (2.9) | 0.51 | 0.07–3.66 | 0.507 |  | 0.44 | 0.06–3.18 | 0.413 |
| Total mastectomy | 168/1,827 (9.2) | 1.77 | 1.44–2.18 | <0.001 |  | 1.42 | 1.14–1.78 | 0.002 |
| Perioperative opioid administration | 287/4,188 (6.9) | 1.21 | 0.92–1.59 | 0.182 |  | 1.08 | 0.76–1.55 | 0.665 |
| Postoperative use of ketorolac | 213/2,882 (7.4) | 1.31 | 1.05–1.62 | 0.015 |  | 1.15 | 0.93–1.43 | 0.204 |
| Transfusion | 8/90 (8.9) | 1.42 | 0.70–2.86 | 0.330 |  | 1.22 | 0.60–2.49 | 0.584 |
| Subtype |  |  |  |  |  |  |  |  |
| Luminal A | 96/2,678 (3.6) | Reference |  |  |  | Reference |  |  |
| Luminal B | 80/1,140 (7.0) | 2.04 | 1.51–2.74 | <0.001 |  | 2.09 | 1.55–2.82 | <0.001 |
| HER2 over-expression | 69/606 (11.4) | 3.49 | 2.56–4.75 | <0.001 |  | 3.84 | 2.78–5.30 | <0.001 |
| Basal | 104/907 (11.5) | 3.51 | 2.66–4.63 | <0.001 |  | 3.69 | 2.78–4.89 | <0.001 |
| Non-adherence to standard cancer therapy | 123/2,002 (6.1) | 1.11 | 0.89–1.39 | 0.348 |  | 2.18 | 1.70–2.80 | <0.001 |
| Year of surgery |  |  |  |  |  |  |  |  |
| 2005–2007 | 159/1,379 (11.5) | 2.84 | 2.10-3.85 | <0.001 |  | 3.83 | 2.71–5.42 | <0.001 |
| 2008–2010 | 130/1,862 (7.0) | 1.88 | 1.38–2.57 | <0.001 |  | 1.89 | 1.35–2.64 | <0.001 |
| 2011–2013 | 60/2,090 (2.9) | Reference |  |  |  | Reference |  |  |

ASA, American Society of Anesthesiologists; human epidermal growth factor 2.

Supplementary Table 2. Univariable and multivariable Cox regression analysis for overall survival in the total study cohort

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | Unadjusted | | |  | Adjusted | | |
|  | Death/Total No. (%) | Hazard ratio | 95% CI | *P* |  | Hazard ratio | 95% CI | *P* |
| Type of anesthesia |  |  |  |  |  |  |  |  |
| Total intravenous anesthesia | 234/3,085 (7.6) | Reference |  |  |  | Reference |  |  |
| Inhalation anesthesia | 116/2,246 (5.2) | 0.77 | 0.62–0.96 | 0.023 |  | 0.80 | 0.60–1.08 | 0.153 |
| Age (years) |  |  |  |  |  |  |  |  |
| Age<40 | 85/759 (11.2) | 2.53 | 1.88–3.41 | <0.001 |  | 2.13 | 1.57–2.88 | <0.001 |
| 40≤Age<50 | 90/1,978 (4.6) | Reference |  |  |  | Reference |  |  |
| Age≥50 | 175/2,594 (6.7) | 1.69 | 1.31–2.18 | <0.001 |  | 1.13 | 0.86–1.48 | 0.378 |
| Anesthetic time (1 hour) |  | 1.06 | 0.89–1.26 | 0.520 |  | 1.07 | 0.89–1.28 | 0.491 |
| ASA physical status |  |  |  |  |  |  |  |  |
| I | 208/3,735 (5.6) | Reference |  |  |  | Reference |  |  |
| II | 132/1,561 (8.5) | 1.68 | 1.35–2.09 | <0.001 |  | 1.64 | 1.30–2.07 | <0.001 |
| III | 10/35 (28.6) | 6.45 | 3.42–12.17 | <0.001 |  | 4.97 | 2.51–9.86 | <0.001 |
| Total mastectomy | 191/1,827 (10.5) | 2.12 | 1.72–2.62 | <0.001 |  | 1.84 | 1.48–2.30 | <0.001 |
| Perioperative opioid administration | 292/4,188 (7.0) | 1.30 | 0.98–1.73 | 0.070 |  | 1.07 | 0.74–1.55 | 0.720 |
| Postoperative use of ketorolac | 208/2,882 (7.2) | 1.19 | 0.96–1.47 | 0.114 |  | 1.15 | 0.92–1.43 | 0.214 |
| Transfusion | 11/90 (12.2) | 1.95 | 1.07–3.56 | 0.029 |  | 1.16 | 0.61–2.21 | 0.645 |
| Subtype |  |  |  |  |  |  |  |  |
| Luminal A | 79/2,678 (2.9) | Reference |  |  |  | Reference |  |  |
| Luminal B | 75/1,140 (6.6) | 2.27 | 1.65–3.11 | <0.001 |  | 2.19 | 1.59–3.01 | <0.001 |
| HER2 over-expression | 69/606 (11.4) | 4.25 | 3.07–5.87 | <0.001 |  | 4.08 | 2.92–5.71 | <0.001 |
| Basal | 127/907 (14.0) | 5.28 | 3.98–6.99 | <0.001 |  | 5.57 | 4.18–7.41 | <0.001 |
| Non-adherence to standard cancer therapy | 121/2,002 (6.0) | 1.50 | 1.19–1.89 | 0.001 |  | 1.83 | 1.45–2.31 | <0.001 |
| Year of surgery |  |  |  |  |  |  |  |  |
| 2005–2007 | 147/1,379 (10.7) | 0.96 | 0.70–1.31 | 0.786 |  | 1.15 | 0.81–1.62 | 0.447 |
| 2008–2010 | 128/1,862 (6.9) | 0.94 | 0.69–1.26 | 0.671 |  | 0.84 | 0.61–1.16 | 0.299 |
| 2011–2013 | 75/2,090 (3.6) | Reference |  |  |  | Reference |  |  |

ASA, American Society of Anesthesiologists; HER2, human epidermal growth factor 2.

Supplementary Figure 1. The distribution of patients that received intravenous or inhalation anesthesia according to the year of surgery



Supplementary Figure 2. The distribution of standardized mean difference for variables included in the model for propensity score calculation. All values were less than 0.1, indicating a well-balanced matching.

