**Supplemental Table 1.** Demographics and perioperative clinical characteristics of 998 patients included in the study

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| --- | --- |
| **Variables** | **Values** |
| Age, median (range) | 70 (26-91) |
| Sex (male/female) | 692/306 |
| Preoperative symptom (%) | 478 (48%) |
| Preoperative body mass index, mean ± SD | 22.0 ± 3.3 |
| Preoperative CEA (ng/ml), median (range) ≤5.0 ng/ml >5.0 ng/ml | 2.4 (0-454.7)806192 |
| Preoperative CA19-9 (IU/ml), median (range) ≤37 IU/ml >37 IU/ml | 12 (0-30461)836162 |
| Tumor location EntireUpper thirdMiddle third Lower third | 37247363351 |
| Tumor size (mm), mean ± SD | 53.0 ± 26.8 |
| Type of gastrectomy Total gastrectomy Partial gastrectomy | 375623 |
| Surgical approach Open Laparoscopic | 90989 |
| Dissected lymph nodes, mean ± SD | 37.6 ± 15.7 |
| Operative time (min), mean ± SD | 262 ± 69 |
| Intraoperative blood loss (ml), median (range) | 261 (0-3050) |
| Differentiation Differentiated Undifferentiated | 443555 |
| UICC pT factor pT1 pT2 pT3 pT4 | 45129387437 |
| UICC pN factor pN0 pN1 pN2 pN3 | 222249274253 |
| UICC pathological stage IIA IIB IIIAIIIBIIIC | 23622229717469 |
| Postoperative CEA (ng/ml), median (range) ≤5.0 ng/ml >5.0 ng/ml | 2.2 (0-576)884114 |
| Postoperative CA19-9 (IU/ml), median (range) ≤37 IU/ml >37 IU/ml | 8.8 (0-18743)91583 |
| Adjuvant chemotherapy Not performed S-1 monotherapy S-1 based combination therapy Capecitabine plus oxaliplatin Others | 35258250104 |
| Median postoperative follow-up (month) | 50.5 |

SD, standard deviation; CEA, carcinoembryonic antigen; CA19-9, carbohydrate antigen 19-9; UICC, Union for International Cancer Control.

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| --- | --- | --- |
| **Variables** | **Univariate** | **Multivariable** |
| **HR** | 95%CI | ***P*** | **HR** | 95%CI | ***P*** |
| Age | ≥65 years | 1.39 | 1.03 – 1.92 | 0.0330 |  |  |  |
| Sex | Male | 1.05 | 0.78 – 1.43 | 0.7657 |  |  |  |
| Preoperative symptoms | Present | 1.38 | 1.05 – 1.84 | 0.0225 |  |  |  |
| Preoperative body mass index | ≥22 | 0.85 | 0.64 – 1.13 | 0.2689 |  |  |  |
| Preoperative CEA | >5 ng/ml | 2.02 | 1.48 – 2.73 | <0.0001 | 1.38 | 0.95 – 1.96 | 0.0861 |
| Preoperative CA19-9 | >37 IU/ml | 1.59 | 1.11 – 2.23 | 0.0125 |  |  |  |
| Postoperative CEA | >5 ng/ml | 2.30 | 1.59 – 3.23 | <0.0001 | 1.93 | 1.27 – 2.87 | 0.0024 |
| Postoperative CA19-9 | >37 IU/ml | 2.61 | 1.72 – 3.81 | <0.0001 | 1.70 | 1.10 – 2.53 | 0.0188 |
| Tumor location | Lower third | 0.97 | 0.73 – 1.31 | 0.8525 |  |  |  |
| Tumor size | ≥50 mm | 2.03 | 1.51 – 2.75 | <0.0001 | 1.18 | 0.86 – 1.65 | 0.3024 |
| Type of gastrectomy | Total | 1.92 | 1.45 – 2.54 | <0.0001 | 1.50 | 1.12 – 2.01 | 0.0064 |
| Surgical approach | Open | 1.57 | 0.91 – 2.97 | 0.1075 |  |  |  |
| Operative time | ≥240 min | 1.46 | 1.09 – 1.99 | 0.0109 |  |  |  |
| Intraoperative blood loss | ≥200 ml | 1.35 | 1.01 – 1.82 | 0.0431 |  |  |  |
| Postoperative complication | Present | 1.01 | 0.68 – 1.57 | 0.9467 |  |  |  |
| Tumor differentiation | Undifferentiated | 1.44 | 1.08 – 1.94 | 0.0119 |  |  |  |
| Lymphatic involvement | Present | 2.72 | 1.48 – 5.72 | 0.0006 | 1.89 | 0.96 – 4.29 | 0.0680 |
| Vascular invasion | Present | 2.06 | 1.47 – 2.97 | <0.0001 | 1.49 | 1.03 – 2.22 | 0.0330 |
| Infiltrative growth type | Invasive | 1.96 | 1.48 – 2.60 | <0.0001 | 1.80 | 1.34 – 2.44 | 0.0001 |
| Pathological tumor depth | pT4 | 2.51 | 1.88 – 3.36 | <0.0001 | 1.26 | 0.91 – 1.77 | 0.1726 |
| Pathological lymph node metastasis | pN1-3 | 2.36 | 1.56 – 3.75 | <0.0001 | 1.19 | 0.63 – 2.21 | 0.5857 |
| UICC stage | III | 4.48 | 3.16 – 6.53 | <0.0001 | 3.00 | 1.75 – 5.29 | <0.0001 |
| Adjuvant chemotherapy | Performed | 0.94 | 0.69 – 1.27 | 0.7098 |  |  |  |

**Supplemental Table 2** Prognostic factors for overall survival

CI, confidence interval; CEA, carcinoembryonic antigen; CA19-9, carbohydrate antigen 19-9.

**Supplemental Figure 1 Recurrence rates and survival rates of patients with stage II/III gastric cancer from the two pivotal phase III clinical trials (ACTS-GC and CLASSIC trials).**

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