## Supplement 1. Patient characteristics, clinicopathological features, postoperative vital signs, and inflammation-related laboratory findings in the development and validation datasets

| Characteristic | Subgroup | Development set (n = 1564) | Validation set (n = 1508) |  |
|---------------|----------|--------------------------|---------------------------|---|
|               |          | No abscess (%) | Abscess (%) | \( P \) | No abscess (%) | Abscess (%) | \( P \) |
| Age (mean ± SD) | (n = 1442) | (n = 122) | | | (n = 1391) | (n = 117) | |
| Sex | Male | 942 (65.3) | 99 (81.1) | <0.001 | 906 (65.1) | 94 (80.3) | 0.001 |
| | Female | 500 (34.7) | 23 (18.8) | | 485 (34.9) | 23 (19.7) | |
| BMI (kg/m\(^2\)) (mean ± SD) | | 23.7±3.1 | 24.4±3.5 | 0.013 | 23.6±3.2 | 23.8±3.0 | 0.462 |
| Diabetes mellitus | Absent | 1234 (85.6) | 101 (82.8) | 0.403 | 1226 (88.1) | 101 (86.3) | 0.562 |
| | Present | 208 (14.4) | 21 (17.2) | | 165 (11.9) | 16 (13.7) | |
| Hypertension | Absent | 974 (67.5) | 75 (61.5) | 0.171 | 1011 (72.7) | 73 (62.4) | 0.017 |
| | Present | 468 (32.5) | 47 (38.5) | | 380 (27.3) | 44 (37.6) | |
| Heart disease | Absent | 1332 (92.3) | 109 (89.3) | 0.233 | 1347 (96.8) | 113 (96.6) | 0.784 |
| | Present | 110 (7.6) | 13 (10.7) | | 44 (3.2) | 4 (3.4) | |
| Liver disease | Absent | 1364 (94.6) | 118 (96.7) | 0.311 | 1242 (89.3) | 104 (88.9) | 0.893 |
| | Present | 78 (5.4) | 4 (3.2) | | 149 (10.7) | 13 (11.1) | |
| Pulmonary disease | Absent | 1407 (97.6) | 116 (95.1) | 0.128 | 1370 (98.5) | 115 (98.3) | 0.698 |
| | Present | 35 (2.4) | 6 (4.9) | | 21 (1.5) | 2 (1.7) | |
| Surgical approach | Open | 661 (45.8) | 84 (68.9) | <0.001 | 802 (57.7) | 81 (69.2) | 0.015 |
| | Laparoscopy /Robot | 781 (54.2) | 38 (31.1) | | 589 (42.3) | 36 (30.8) | |
| Extent of gastrectomy | Subtotal | 1065 (73.9) | 76 (62.3) | 0.006 | 1029 (74.0) | 50 (42.7) | <0.001 |
| | Total | 377 (26.1) | 46 (37.7) | | 362 (26.0) | 67 (57.3) | |
| LN dissection | D1+ | 127 (8.8) | 6 (4.9) | 0.139 | 88 (6.3) | 4 (3.4) | 0.207 |
| | D2 | 1315 (91.2) | 116 (95.1) | | 1303 (93.7) | 113 (96.6) | |
| Combined operation | Absent | 1305 (90.5) | 95 (77.9) | <0.001 | 1344 (96.6) | 99 (84.6) | <0.001 |
| | Present | 137 (9.5) | 27 (22.1) | | 47 (3.4) | 18 (15.4) | |
| Operating time (mean ± SD) | 177.3±64.1 | 214.4±84.8 | <0.001 | 187.1±71.8 | 212.9±102.4 | 0.009 |
| Number of Antibiotics usage | 1–2 | 1434 (99.4) | 120 (98.4) | 0.18 | 145 (10.4) | 20 (17.1) | 0.026 |
| | ≥3 | 8 (0.6) | 2 (1.6) | | 1246 (89.6) | 97 (82.9) | |
| Postoperative transfusion | Absent | 1402 (97.2) | 111 (91.0) | 0.001 | 1332 (95.8) | 97 (82.9) | <0.001 |
| | Present | 40 (2.8) | 11 (9.0) | | 59 (4.2) | 20 (17.1) | |
| pT | 1 | 915 (63.5) | 52 (42.6) | <0.001 | 742 (53.3) | 45 (38.5) | 0.001 |
| | 2,3 | 381 (26.4) | 43 (35.2) | | 469 (33.7) | 45 (38.5) | |
| | 4 | 146 (10.1) | 27 (22.1) | | 180 (12.9) | 27 (23.1) | |
| pN | 0 | 994 (68.9) | 61 (50.0) | <0.001 | 893 (64.2) | 67 (57.3) | 0.084 |
|                  | 1          | 2,3        | 1          | 12 (10.3)  |
|------------------|------------|------------|------------|------------|
|                  | 167 (11.6) | 20 (16.4)  | 173 (12.4) | 38 (32.5)  |

|                  | 2          | 325 (23.4) | 4           | 507 (36.5) |
|                  | 307 (21.3) | 61 (50.0)  | 884 (63.6)  | 63 (53.8)  |

| *Body temperature (°C)* | <37.8 | 1106 (76.7) | 51 (41.8) | <0.001  | 1042 (74.9) | 49 (41.9) | <0.00 |
| ≥37.8          | 336 (23.3) | 71 (58.2)  | 349 (25.1) | 68 (58.1) |

| *Pulse rate* | <100 | 1035 (71.8) | 62 (50.8) | <0.001  | 1044 (75.1) | 48 (41.0) | <0.00 |
| 100–119 | 338 (23.4) | 41 (33.6)  | 299 (21.5) | 55 (47.0) |
| ≥120 | 69 (4.8)  | 19 (15.6)  | 48 (3.5)  | 14 (12.0) |

| *WBC (/μL)* | <12 | 990 (68.7) | 51 (41.8) | <0.001  | 385 (27.7) | 16 (13.7) | 0.002 |
| 12–14.9 | 334 (23.2) | 43 (35.2)  | 430 (30.9) | 36 (30.8) |
| ≥15 | 118 (8.2)  | 28 (23.0)  | 576 (41.4) | 65 (55.6) |

| *Seg neutrophil (%)* | <75 | 393 (27.3) | 15 (12.3) | <0.001  | 351 (25.2) | 10 (8.5)  | <0.00 |
| 75–84.9 | 884 (61.3) | 68 (55.7)  | 879 (63.2) | 67 (57.3) |
| ≥85 | 165 (11.4) | 39 (32.0)  | 161 (11.6) | 40 (34.2) |

| *CRP (mg/dL)* | <10 | 479 (33.2) | 11 (9.0)  | <0.001  | 576 (41.4) | 14 (12.0) | <0.00 |
| 10–14.9 | 430 (29.8) | 20 (16.4)  | 357 (25.7) | 19 (16.2) |
| 15–19.9 | 300 (20.8) | 26 (21.3)  | 258 (18.5) | 34 (29.1) |
| ≥20 | 233 (16.2) | 65 (53.3)  | 200 (14.4) | 50 (42.7) |

| *T. bil (mg/dL)* | <1.2 | 834 (57.8) | 51 (41.8) | <0.001  | 813 (58.4) | 60 (51.3) | 0.196 |
| 1.2–2.9 | 584 (40.5) | 64 (52.5)  | 545 (39.2) | 52 (44.4) |
| ≥3 | 24 (1.7)  | 7 (5.7)    | 33 (2.4)   | 5 (4.2)   |

| *Glucose (mg/dL)* | <150 | 834 (57.8) | 49 (40.2) | <0.001  | 413 (29.7) | 23 (19.7) | 0.003 |
| 150–199 | 450 (31.2) | 41 (33.6)  | 755 (54.3) | 62 (53.0) |
| ≥200 | 158 (11.0) | 32 (26.2)  | 223 (16.0) | 32 (27.4) |

| *Amylase (U/)* | <100 | 800 (55.5) | 52 (42.6) | <0.001  | 629 (45.2) | 31 (26.5) | <0.00 |
| 101–200 | 440 (30.5) | 36 (29.5)  | 461 (33.1) | 34 (29.1) |
| >201 | 202 (14.0) | 34 (27.9)  | 301 (21.6) | 52 (44.4) |

| Hemoglobin difference (g/dL) | <3 | 1135 (87.7) | 61 (50.0) | <0.001  | 884 (63.6) | 54 (46.2) | <0.00 |
| ≥3 | 307 (21.3) | 61 (50.0)  | 507 (36.5) | 63 (53.8) |

SD, standard deviation; BMI, body mass index; LN, lymph node; WBC, white blood cell count; CRP, C-reactive protein; T. bil, total bilirubin.

* The highest values for the vital signs and inflammatory markers were used in the analysis.