Supplementary table 1: Clinical and pathological characteristics of patients at first TURBT

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| Characteristics n=216 |
| Age, years (±SD) | 71.3 (±9.3) |
| Males, n (%) | 172 (79.6) |
| Females, n (%) | 44 (20.4) |
| Clinical stage, n (%) |  |
|  stage 0a, I | 163 (75.5) |
|  stage II | 30 (13.9) |
|  stage III | 10 (4.6) |
|  stage IV | 14 (6.5) |
| Pathological T stage, n (%) |  |
|  pTa | 100 (46.3) |
|  pT1 | 76 (35.2) |
|  ≥pT2 | 40 (18.5) |
| Inclusion of G3, n (%) | 94 (43.5) |
| CIS+, n (%) | 21 (9.7) |
| LVI+, n (%) | 49 (22.7) |

TURBT: transurethral resection of bladder tumor; SD: standard deviation; CIS: carcinoma in situ; LVI: lymphovascular invasion

Supplementary table 2: Clinical and pathological characteristics of patients who underwent RC

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| Characteristics n=64 |
| Age, years (±SD) | 68.2 (±7.9) |
| Males, n (%) | 51 (79.7) |
| Females, n (%) | 13 (20.3) |
| Neoadjuvant chemotherapy, n (%) | 20 (31.3) |
| Pathological T stage, n (%) |  |
|  pT0 | 19 (29.7) |
|  pTa, Tis | 3 (4.7) |
|  pT1 | 10 (15.6) |
|  pT2 | 17 (26.6) |
|  pT3 | 12 (18.8) |
|  pT4 | 3 (4.7) |
| Lymph node metastasis, n (%) | 13 (20.3) |
| Distance metastasis, n (%) | 1 (1.6) |
| Including G3, n (%) | 34 (53.1) |
| CIS+, n (%) | 7 (10.9) |
| LVI+, n (%) | 21 (32.8) |

RC: radical cystectomy; CIS: carcinoma in situ; LVI: lymphovascular invasion; TURBT: transurethral resection of bladder tumor; RC: radical cystectomy

Supplementary table 3: Clinical and pathological characteristics of patients receiving or not receiving NAC

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|  | NAC+(n=15) | NAC-(n=35) | p-value |
| Age, years (range) | 69 (43-79) | 70 (52-82) | 0.511 |
| Males, n (%) | 13 (86.7%) | 27 (77.1%) | 0.440 |
| Females, n (%) | 2 (13.3%) | 8 (22.9%) |
| Clinical stage, n (%) |  |  | 0.006 |
|  stage 0a, I, II | 8 (53.3%) | 31 (88.6%) |
|  stage III, IV | 7 (46.7%) | 4 (11.4%) |
| LVI+ at first TURBT | 14 (93.3%) | 17 (48.6%) | 0.003 |
| RC |
| Pathological T stage, n (%) |  |  | 0.044 |
|  <pT3 | 9 (60.0%) | 30 (85.7%) |
|  ≥pT3 | 6 (40.0%) | 5 (14.3%) |
| Lymph node metastasis, n (%) | 4 (40.0%) | 5 (14.3) | 0.088 |
| Inclusion of G3, n (%) | 9 (60%) | 16 (45.7%) | 0.355 |
| CIS+, n (%) | 2 (13.3%) | 3 (8.6%) | 0.607 |
| LVI+, n (%) | 6 (40.0%) | 9 (25.7%) | 0.312 |

NAC: neoadjuvant chemotherapy; RC: radical cystectomy; CIS: carcinoma in situ; LVI: lymphovascular invasion; TURBT: transurethral resection of bladder tumor

Supplementary table 4: Changes in LVI with or without NAC in LVI-positive cases at first TURBT

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|  | **First TURBT LVI+** | **p-value** |
| **NAC+****(n=14)** | **NAC-****(n=17)** |
| **RC LVI-** | 8 (57.1%) | 13 (76.5%) | 0.252 |
| **RC LVI+** | 6 (42.9%) | 4 (23.5%) |

LVI: lymphovascular invasion; NAC: neoadjuvant chemotherapy; RC: radical cystectomy; TURBT: transurethral resection of bladder tumor