**Supplementary Table 1. Validation of the outcome (incidence of urinary bladder cancer) by checking the procedural codes around the index time. The outcomes of approximately 81 % of patients with urinary bladder cancer in this study could be validated using this method.**

|  |
| --- |
| **57.49** Other transurethral excision or destruction of lesion or tissue of bladder/Endoscopic resection of bladder lesion;**57.33** Closed [transurethral] biopsy of bladder**57.7** Total cystectomy; **57.6** Partial cystectomy; **57.71** Radical cystectomy; **60** Operations on prostate and seminal vesicles;**57.32** Other cystoscopy; **57.31** Cystoscopy through artificial stoma; and**96.49** instillation of medication into the urinary tract.**40.3** Regional lymph node excision**90.7** Microscopic examination of specimen from lymph node and of lymph**40.50** Radical excision of lymph nodes, not otherwise specified**40.23** Excision of axillary lymph node**40.24** Excision of inguinal lymph node**40.52** Radical excision of peri-aortic lymph nodes**40.53** Radical excision of iliac lymph nodes**56.33** Closed endoscopic biopsy of the ureter**33.27** Closed endoscopic biopsy of lung**88.95** Magnetic resonance imaging of pelvis, prostate, and bladder**55.0** Nephrotomy and nephrostomy |
| For each patient diagnosed with UBC, the frequency of the above-listed procedural code(s) was checked. |
| **Validate period: 3 years pre- and post- index date.**

|  |  |  |
| --- | --- | --- |
| Study group | Ever coded | Cancer |
| N (%) |
| Total | 0 | 84 (19.4) |
| 1 | 131 (30.2) |
| 2 | 91 (21.0) |
| ≧3 | 128 (29.5) |
| Non-hypertension | 0 | 47 (25.3) |
| 1 | 60 (32.3) |
| 2 | 44 (23.7) |
| ≧3 | 35 (18.8) |
| Hypertension | 0 | 37 (14.9) |
| 1 | 71 (28.6) |
| 2 | 47 (19.0) |
| ≧3 | 93 (37.5) |

 | **Validate period: 4 years pre- and post- index date**

|  |  |  |
| --- | --- | --- |
| Study group | Ever coded | Cancer |
| N (%) |
| Total | 0 | 82 (18.9) |
| 1 | 129 (29.7) |
| 2 | 92 (21.2) |
| ≧3 | 131 (30.2) |
| Non-hypertension | 0 | 46 (24.7) |
| 1 | 60 (32.3) |
| 2 | 43 (23.1) |
| ≧3 | 37 (19.9) |
| Hypertension | 0 | 36 (14.5) |
| 1 | 69 (27.8) |
| 2 | 49 (19.8) |
| ≧3 | 94 (37.9) |

 | **Validate period: 5 years pre- and post- index date**

|  |  |  |
| --- | --- | --- |
| Study group | Ever coded | Cancer |
| N (%) |
| Total | 0 | 81 (18.7) |
|  | 1 | 128 (29.5) |
|  | 2 | 92 (21.2) |
|  | ≧3 | 133 (30.6) |
| Non-hypertension | 0 | 45 (24.2) |
|  | 1 | 60 (32.3) |
|  | 2 | 43 (23.1) |
|  | ≧3 | 38 (20.4) |
| Hypertension | 0 | 36 (14.5) |
|  | 1 | 68 (27.4) |
|  | 2 | 49 (19.8) |
|  | ≧3 | 95 (38.3) |

 |

When the procedure codes listed the Table were checked 3 years pre- and post-index date (the day when urinary bladder cancer was confirmed) in each patient with an outcome (cancer), nearly 80.7% (30.2 % + 21 % + 29.5%) of cancer could be validated. While the validation period was extended to 5 years pre- and post-index date, the validation rate increased to 81.3 %.