

**Table S1** Variant histology in TURb vs. SNRUBC (sensitivity comparison)

| Variant histology comparison | “100% urothelial” in SNRUBC | “Other than urothelial” in SNRUBC | Total       |
|------------------------------|-----------------------------|-----------------------------------|-------------|
| 100% urothelial in TURb      | 351 (75.2)                  | 6 (1.3)                           | 357 (76.4)  |
| Any type of VH in TURb       | 108 (23.1)                  | 2 (0.4)                           | 110 (76.4)  |
| Total                        | 459 (98.3)                  | 8 (1.7)                           | 467 (100.0) |

For sensitivity comparison: includes all cases of urothelial bladder cancer with complete case data on urothelial variant histology increasing sample size to 467 cases compared to 387 cases in main analysis. The distribution between histology type in TURb reports and the SNRUBC remains largely the same. TURb, transurethral resection of bladder; SNRUBC, Swedish National Registry of Urinary Bladder Cancer; VH, variant histology.

**Table S2** CIS in TURb compared to SNRUBC (sensitivity comparison)

| Comments on CIS                   | Frequency of CIS-comments in SNRUBC |           |               | Total       |
|-----------------------------------|-------------------------------------|-----------|---------------|-------------|
|                                   | Negative                            | Positive  | Not commented |             |
| Frequency of CIS-comments in TURb |                                     |           |               |             |
| Negative                          | 30 (6.8)                            | 5 (1.1)   | 23 (5.2)      | 58 (13.1)   |
| Positive                          | 22 (5.0)                            | 35 (7.9)  | 46 (10.4)     | 103 (23.2)  |
| Not commented                     | 51 (11.5)                           | 10 (2.3)  | 222 (50)      | 283 (63.7)  |
| Total                             | 103 (23.2)                          | 50 (11.3) | 291 (65.5)    | 444 (100.0) |

For sensitivity comparison: includes all cases of urothelial bladder cancer with complete data on CIS comments increasing sample size to 444 cases compared to 374 cases in the main analysis. The distribution of CIS comments in TURb reports and the SNRUBC remains largely the same. Showcases varying types of discrepancy. CIS, carcinoma *in situ*; TURb, transurethral resection of bladder; SNRUBC, Swedish National Registry of Urinary Bladder Cancer.