**SUPPLEMENT 3**

# Validation of deaths and unscheduled readmissions within 90 days of radical cystectomy in the SNRUBC

Background: To correctly interpret data from the radical cystectomy form in the SNRUBC when reporting and performing research, we aimed to validate the data on deaths and unscheduled readmissions within in 90 days of radical cystectomy.

Method: Concordance between data on death within 90 days of radical cystectomy registered in the radical cystectomy form in the SNRUBC and date of death within the Register of total population and population changes (RTB) was investigated.

Data on unscheduled readmissions within 90 days of radical cystectomy registered in the radical cystectomy form in SNRUBC was compared with data from the in-patient register for all patients subjected to urinary diversion with an ileal conduit. The reason for not including patients with continent reconstructions was difficulties to separate scheduled readmissions when commencing catheterization of continent pouches and spontaneous voiding in patients with orthotopic neobladders from unscheduled readmissions. Variables for both these analyses were selected from BladderBaSe 2.0, with data from 2011 to 2019.

Results: Data on death within 90 days were compared for all patients (n=3603, of them 78 with missing data), and data on unscheduled readmissions for 3164 patients subjected to ileal conduit reconstruction (of them 108 missing).

Of the 3307 patients alive 90 days after radical cystectomy according to the cystectomy form, 3302 were registered alive in the RTB (Table 1). 218 patients were registered as dead, however, only 130 (60%) of them had died according to the RTB. Among those registered as dead within the radical cystectomy form, but not in the RTB, 20 died between 90 and 120 days postoperatively and additional 20 patients between 120 to 150 days (results not shown). This indicates that misclassifications to some extent might be due to erroneous registration of date of radical cystectomy in the SNRUBC.

Out of 3164 patients included in the analysis, 803 patients were re-admitted to hospital according to the radical cystectomy form for unscheduled readmission within 90 days (Table 2). Of these, 91% were captured in the in-patient register. 2253 patients were registered as no unscheduled readmissions, however 25% of them had hospitalization data in the in-patient register. This analysis was also performed in selected categories of calendar years with similar results (Table 3).

Conclusion: Scientific studies or reports using data on unscheduled readmissions within 90 days of radical cystectomy within the SNRUBC should be interpreted with caution. Further validation studies of other variables in the radical cystectomy form are recommended.

**Table 1.** Data for 3603 patients on death within 90 days from radical cystectomy in the radical cystectomy form in the SNRUBC as compared to date of death registered in the Register of total population and population changes.

| | **Register of Total Population and Population Changes** | | |
|---|---|---|---|
| **SNRUBC register** | | Alive | Dead |
| | Alive | 3302 (100%) | 5 (0%) |
| | Dead | 88 (40%) | 130 (60%) |
| | Missing | 77 (99%) | 1 (1%) |

**Table 2.** Data for 3164 patients subjected to ileal conduit reconstruction on unscheduled readmissions within 90 days in the cystectomy registration form in the SNRUBC as compared to the same information from comparison to the in-patient register.

| | | **In-patient register** | |
|---|---|---|---|
| **SNRUBC register** | | No unscheduled readmissions | Unscheduled readmission |
| | No unscheduled readmissions | 1699 (75%) | 554 (25%) |
| | Unscheduled readmission | 73 (9%) | 730 (91%) |
| | Missing | 63 (58%) | 45 (42%) |

**Table 3**. Data of unscheduled readmissions within 90 days in the cystectomy registration form in the SNRUBC as compared to the same information from comparison to the in-patient register, separated by categories of year of radical cystectomy.

| | | | **In-patient register** | |
|---|---|---|---|---|
| | **Year of radical cystectomy** | | No unscheduled readmissions | Unscheduled readmission |
| **SNRUBC register** | 2011-2013 | No unscheduled readmissions | 489 (73%) | 180 (27%) |
| | | Unscheduled readmission | 20 (10%) | 184 (90%) |
| | | Missing | 12 (55%) | 10 (45%) |
| | 2014-2016 | No unscheduled readmissions | 623 (76%) | 197 (24%) |
| | | Unscheduled readmission | 18 (6%) | 276 (94%) |
| | | Missing | 25 (71%) | 10 (29%) |
| | 2017-2019 | No unscheduled readmissions | 587 (77%) | 177 (23%) |
| | | Unscheduled readmission | 35 (11%) | 270 (89%) |
| | | Missing | 26 (51%) | 25 (49%) |