

Munich Cancer Registry



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Munich Cancer Registry at Munich Cancer Center
Marchioninstr. 15
Munich, 81377
Germany

<http://www.tumorregister-muenchen.de/en>

Cancer statistics: Survival

C67, D09.0, D41.4: Bladder cancer

| | |
|-------------------|------------|
| Year of diagnosis | 1988-2012 |
| Patients | 19,205 |
| Diseases | 19,440 |
| Cases evaluated | 10,454 |
| Creation date | 03/25/2014 |
| Export date | 02/12/2014 |
| Population | 4.5 m |



http://www.tumorregister-muenchen.de/en/facts/surv/surv_C67D_E.pdf

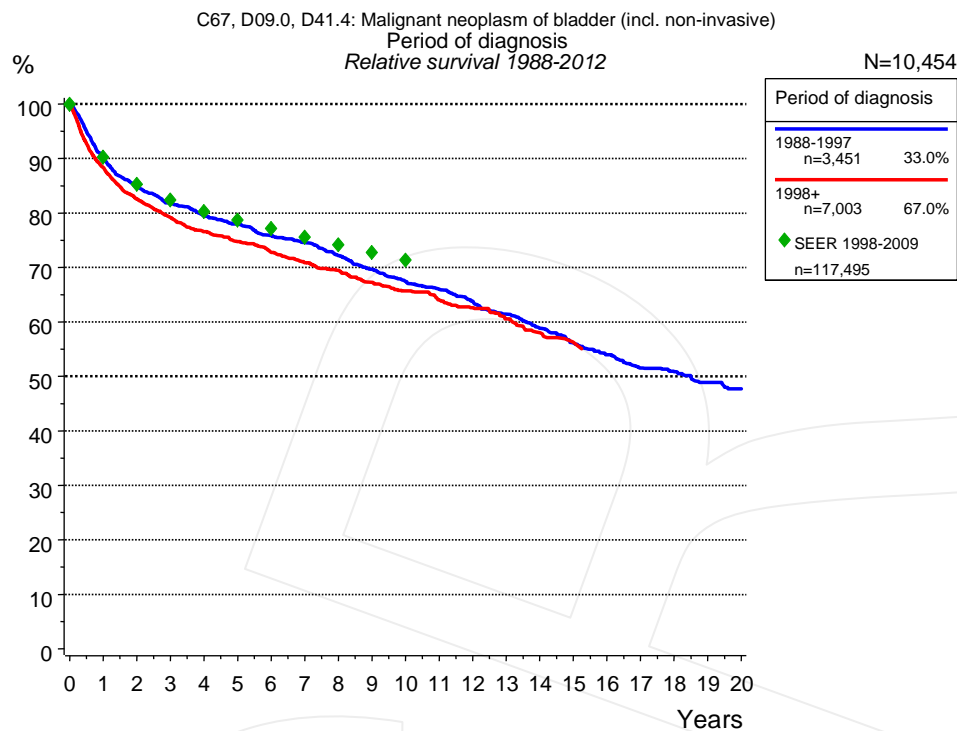


Figure 1a. Relative survival of patients with bladder cancer by period of diagnosis. Included in the evaluation are 10,454 cases diagnosed between 1988 and 2012.

The presented survival curves are derived from clinical records with valid follow-up informations, which means that death certificate cases (DCO) cases are omitted from the analysis. With this one restriction, the MCR has provided population-based statistics since 1988, collecting data on all cancer cases in the region of southern Bavaria. Historical data of previous time periods can be heavily selected, therefore, univariate survival comparisons of the presented time periods must be carefully considered. Nonetheless, all calculable survival curves are depicted to facilitate the comparison of long time follow-up analyses of relative survival between particular cancers.

| Years | Period of diagnosis | | | |
|-------|----------------------|--------|------------------|--------|
| | 1988-1997 n=3,451 | | 1998+ n=7,003 | |
| | obs. % | rel. % | obs. % | rel. % |
| 0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1 | 86.1 | 90.2 | 84.6 | 88.3 |
| 2 | 77.4 | 84.8 | 76.1 | 82.5 |
| 3 | 71.4 | 81.7 | 70.3 | 79.2 |
| 4 | 66.7 | 79.5 | 65.5 | 76.6 |
| 5 | 62.8 | 78.0 | 61.7 | 74.7 |
| 6 | 58.6 | 75.8 | 57.9 | 72.8 |
| 7 | 55.5 | 74.5 | 54.3 | 70.9 |
| 8 | 51.6 | 72.2 | 51.2 | 69.5 |
| 9 | 47.9 | 69.7 | 47.8 | 67.2 |
| 10 | 44.6 | 67.4 | 45.1 | 65.7 |
| 11 | 42.0 | 66.0 | 42.2 | 64.0 |
| 12 | 39.1 | 63.8 | 39.8 | 62.6 |
| 13 | 36.2 | 61.4 | 37.0 | 60.6 |
| 14 | 33.4 | 58.9 | 34.3 | 58.0 |
| 15 | 30.6 | 56.1 | 31.9 | 56.2 |
| 16 | 28.3 | 53.9 | | |
| 17 | 26.0 | 51.5 | | |
| 18 | 24.6 | 50.8 | | |
| 19 | 22.8 | 48.9 | | |
| 20 | 21.3 | 47.7 | | |

Table 1b. Observed (obs.) and relative (rel.) survival of patients with bladder cancer by period of diagnosis for period 1988-2012 (N=10,454).

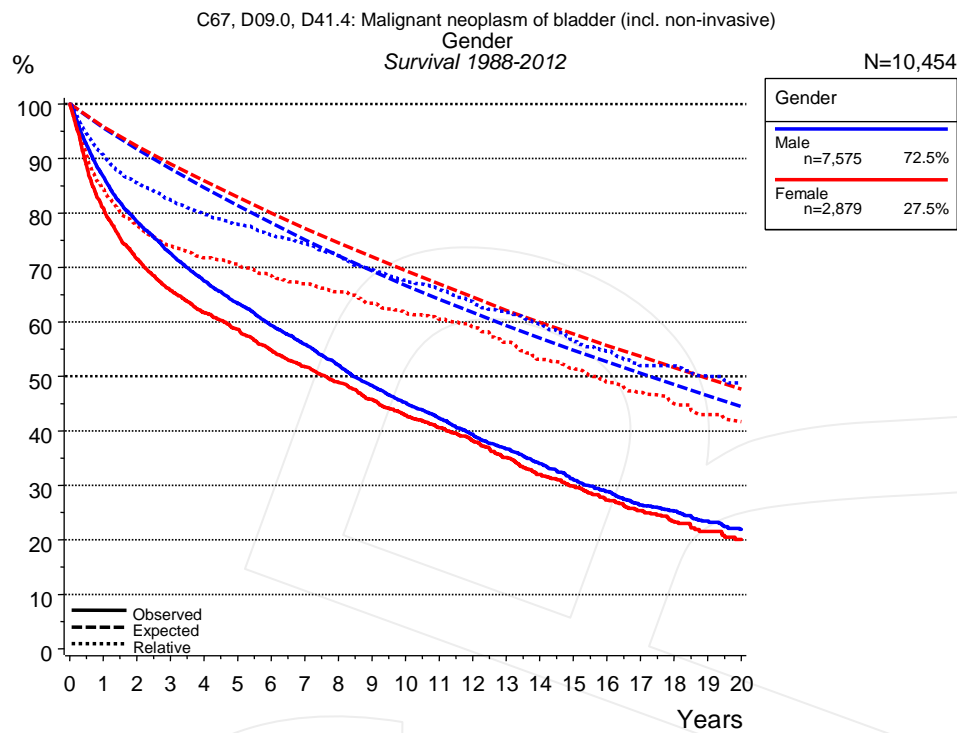


Figure 2a. Survival of patients with bladder cancer by gender. Included in the evaluation are 10,454 cases diagnosed between 1988 and 2012.

| Years | Gender | | | |
|-------|-----------------|--------|-------------------|--------|
| | Male n=7,575 | | Female n=2,879 | |
| | obs. % | rel. % | obs. % | rel. % |
| 0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1 | 86.7 | 90.6 | 80.9 | 84.4 |
| 2 | 78.4 | 85.5 | 71.6 | 77.6 |
| 3 | 72.6 | 82.4 | 65.7 | 73.9 |
| 4 | 67.5 | 79.7 | 61.7 | 71.8 |
| 5 | 63.4 | 77.9 | 58.6 | 70.6 |
| 6 | 59.3 | 75.9 | 54.8 | 68.5 |
| 7 | 55.9 | 74.4 | 51.7 | 66.9 |
| 8 | 52.1 | 72.2 | 48.8 | 65.5 |
| 9 | 48.3 | 69.6 | 45.7 | 63.4 |
| 10 | 45.1 | 67.6 | 42.9 | 61.7 |
| 11 | 42.3 | 65.9 | 40.6 | 60.5 |
| 12 | 39.4 | 63.7 | 38.2 | 59.1 |
| 13 | 36.6 | 61.7 | 35.1 | 56.3 |
| 14 | 34.0 | 59.5 | 32.0 | 53.2 |
| 15 | 31.0 | 56.5 | 29.9 | 51.5 |
| 16 | 28.8 | 54.6 | 27.3 | 48.9 |
| 17 | 26.3 | 52.0 | 25.4 | 47.1 |
| 18 | 25.3 | 51.9 | 23.2 | 44.9 |
| 19 | 23.4 | 50.1 | 21.6 | 43.0 |
| 20 | 21.9 | 48.8 | 20.1 | 41.7 |

Table 2b. Observed (obs.) and relative (rel.) survival of patients with bladder cancer by gender for period 1988-2012 (N=10,454).

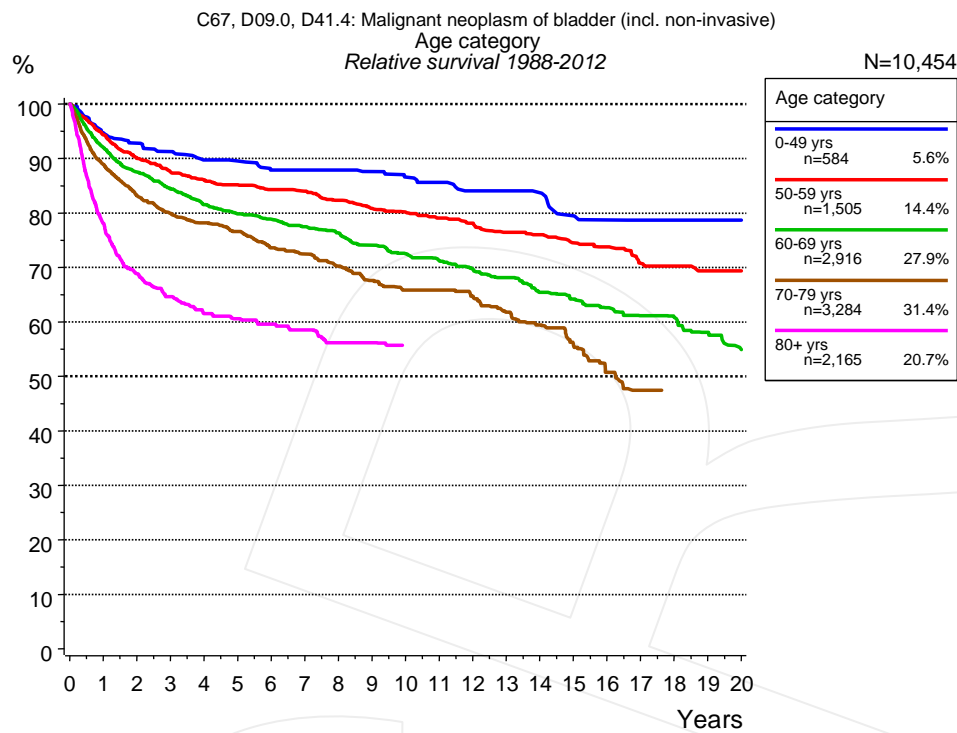


Figure 3a. Relative survival of patients with bladder cancer by age category. Included in the evaluation are 10,454 cases diagnosed between 1988 and 2012.

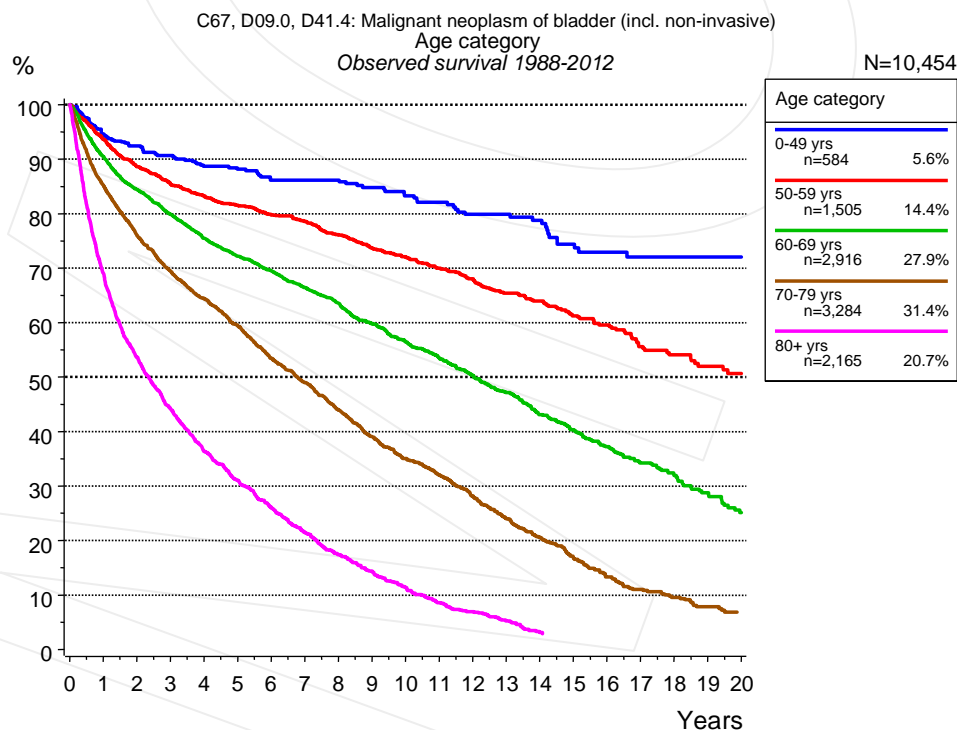


Figure 3b. Observed survival of patients with bladder cancer by age category. Included in the evaluation are 10,454 cases diagnosed between 1988 and 2012.

| Years | Age category | | | | | | | | | |
|-------|-------------------|--------|----------------------|--------|----------------------|--------|----------------------|--------|--------------------|--------|
| | 0-49 yrs n=584 | | 50-59 yrs n=1,505 | | 60-69 yrs n=2,916 | | 70-79 yrs n=3,284 | | 80+ yrs n=2,165 | |
| | obs. % | rel. % | obs. % | rel. % | obs. % | rel. % | obs. % | rel. % | obs. % | rel. % |
| 0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1 | 94.6 | 94.7 | 93.6 | 94.3 | 90.4 | 92.0 | 85.1 | 88.9 | 69.1 | 78.1 |
| 2 | 92.4 | 92.8 | 88.6 | 90.0 | 84.4 | 87.5 | 76.0 | 83.1 | 53.6 | 68.8 |
| 3 | 90.7 | 91.3 | 85.4 | 87.5 | 79.8 | 84.4 | 69.4 | 79.9 | 44.2 | 64.6 |
| 4 | 88.7 | 89.7 | 83.3 | 86.1 | 75.4 | 81.5 | 64.4 | 78.1 | 36.4 | 61.5 |
| 5 | 88.1 | 89.5 | 81.6 | 85.1 | 72.1 | 79.8 | 59.4 | 76.6 | 31.1 | 60.6 |
| 6 | 86.2 | 87.9 | 79.7 | 84.3 | 69.5 | 78.8 | 53.4 | 73.6 | 26.1 | 59.6 |
| 7 | 86.2 | 87.9 | 78.6 | 84.0 | 66.4 | 77.4 | 48.9 | 72.4 | 21.5 | 58.6 |
| 8 | 86.2 | 87.9 | 76.1 | 82.3 | 63.5 | 76.3 | 43.9 | 70.2 | 17.4 | 56.2 |
| 9 | 84.8 | 87.6 | 73.7 | 80.8 | 59.8 | 74.1 | 39.0 | 67.6 | 14.4 | 56.2 |
| 10 | 83.3 | 86.6 | 72.0 | 80.2 | 56.4 | 72.5 | 35.0 | 65.8 | | |
| 11 | 82.1 | 85.6 | 70.0 | 79.0 | 53.5 | 71.2 | 32.0 | 65.8 | | |
| 12 | 79.9 | 84.0 | 68.1 | 78.1 | 50.3 | 69.7 | 28.2 | 64.7 | | |
| 13 | 79.9 | 84.0 | 65.4 | 76.5 | 47.1 | 68.1 | 24.0 | 61.8 | | |
| 14 | 78.8 | 83.7 | 63.9 | 76.0 | 43.1 | 65.4 | 20.6 | 59.4 | | |
| 15 | 74.4 | 79.5 | 61.3 | 74.5 | 40.4 | 64.2 | 16.7 | 55.6 | | |
| 16 | 73.0 | 78.7 | 59.6 | 73.8 | 37.2 | 62.6 | 13.3 | 50.7 | | |
| 17 | 72.0 | 78.7 | 55.6 | 70.7 | 34.3 | 61.1 | 11.0 | 47.5 | | |
| 18 | 72.0 | 78.7 | 54.1 | 70.2 | 31.9 | 60.8 | | | | |
| 19 | 72.0 | 78.7 | 52.0 | 69.4 | 28.8 | 58.1 | | | | |
| 20 | 72.0 | 78.7 | 50.7 | 69.4 | 25.1 | 54.9 | | | | |

Table 3c. Observed (obs.) and relative (rel.) survival of patients with bladder cancer by age category for period 1988-2012 (N=10,454).

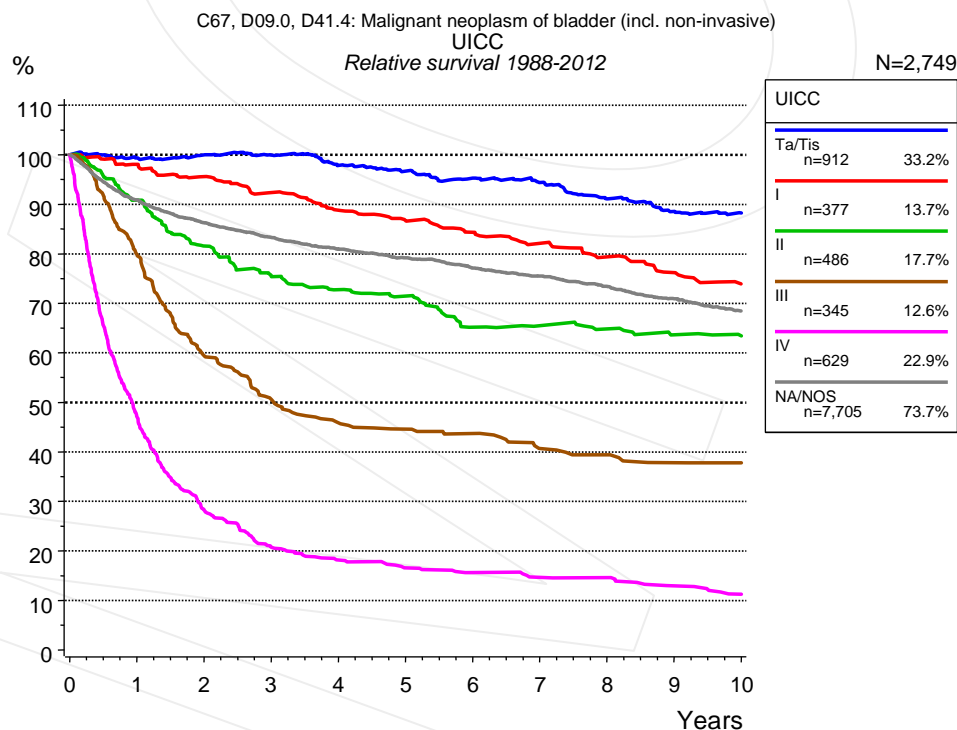


Figure 4a. Relative survival of patients with bladder cancer by UICC. For 9,972 of 10,454 cases diagnosed between 1988 and 2012 valid data could be obtained for this item. For a total of 2,749 cases an evaluable classification was established. The grey line represents the subgroup of 7,705 patients with missing values regarding UICC (73.7% of 10,454 patients, the percent values of all other categories are related to n=2,749).

| Years | UICC | | | | | | | | | | | |
|-------|-----------------|--------|------------|--------|-------------|--------|--------------|--------|-------------|--------|-------------------|--------|
| | Ta/Tis n=912 | | I n=377 | | II n=486 | | III n=345 | | IV n=629 | | NA/NOS n=7,705 | |
| | obs. % | rel. % | obs. % | rel. % | obs. % | rel. % | obs. % | rel. % | obs. % | rel. % | obs. % | rel. % |
| 0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1 | 95.5 | 99.4 | 94.9 | 98.1 | 88.2 | 90.8 | 77.8 | 79.8 | 45.6 | 47.1 | 86.7 | 90.9 |
| 2 | 92.3 | 100.0 | 89.3 | 95.6 | 76.6 | 81.6 | 56.5 | 59.3 | 26.4 | 28.2 | 78.8 | 86.3 |
| 3 | 88.6 | 99.9 | 83.4 | 92.3 | 68.9 | 75.5 | 47.2 | 50.6 | 18.8 | 20.7 | 73.1 | 83.3 |
| 4 | 83.4 | 97.8 | 77.7 | 88.8 | 64.2 | 72.8 | 41.6 | 45.8 | 16.0 | 18.2 | 68.3 | 81.0 |
| 5 | 79.4 | 96.7 | 73.3 | 86.7 | 61.2 | 71.5 | 39.4 | 44.6 | 14.1 | 16.6 | 64.2 | 79.2 |
| 6 | 75.1 | 95.3 | 68.9 | 84.3 | 53.8 | 65.2 | 37.6 | 43.7 | 12.9 | 15.6 | 60.1 | 77.1 |
| 7 | 71.5 | 94.4 | 64.7 | 82.1 | 52.2 | 65.5 | 33.6 | 40.7 | 11.8 | 14.7 | 56.5 | 75.5 |
| 8 | 66.4 | 91.1 | 60.3 | 79.4 | 50.0 | 64.8 | 32.0 | 39.4 | 11.6 | 14.6 | 52.9 | 73.4 |
| 9 | 62.3 | 88.5 | 56.0 | 76.2 | 47.2 | 63.6 | 29.7 | 37.8 | 9.8 | 12.9 | 49.1 | 70.9 |
| 10 | 59.8 | 88.3 | 51.9 | 73.9 | 45.6 | 63.5 | 28.5 | 37.8 | 8.3 | 11.3 | 45.6 | 68.4 |

Table 4b. Observed (obs.) and relative (rel.) survival of patients with bladder cancer by UICC for period 1988-2012 (N=2,749).

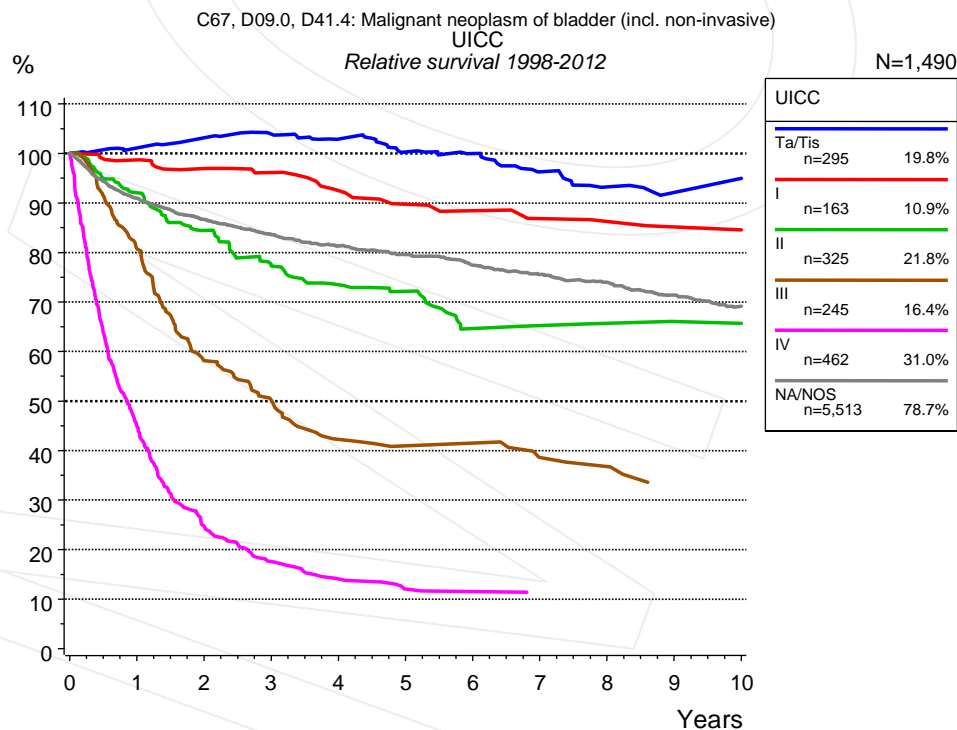


Figure 4c. Relative survival of patients with bladder cancer by UICC. For 6,718 of 7,003 cases diagnosed between 1998 and 2012 valid data could be obtained for this item. For a total of 1,490 cases an evaluable classification was established. The grey line represents the subgroup of 5,513 patients with missing values regarding UICC (78.7% of 7,003 patients, the percent values of all other categories are related to n=1,490).

| Years | UICC | | | | | | | | | | | |
|-------|-----------------|--------|------------|--------|-------------|--------|--------------|--------|-------------|--------|-------------------|--------|
| | Ta/Tis n=295 | | I n=163 | | II n=325 | | III n=245 | | IV n=462 | | NA/NOS n=5,513 | |
| | obs. % | rel. % | obs. % | rel. % | obs. % | rel. % | obs. % | rel. % | obs. % | rel. % | obs. % | rel. % |
| 0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1 | 97.9 | 101.1 | 96.8 | 98.7 | 89.9 | 92.1 | 78.6 | 80.7 | 43.7 | 44.9 | 86.8 | 91.0 |
| 2 | 96.8 | 103.1 | 92.8 | 96.9 | 80.0 | 84.5 | 55.3 | 58.1 | 23.3 | 24.7 | 79.4 | 86.6 |
| 3 | 94.0 | 103.9 | 89.7 | 96.1 | 71.5 | 77.4 | 47.0 | 50.1 | 16.2 | 17.5 | 73.7 | 83.6 |
| 4 | 89.7 | 102.9 | 83.9 | 92.5 | 65.8 | 73.5 | 38.4 | 42.3 | 12.6 | 14.1 | 69.0 | 81.3 |
| 5 | 84.4 | 100.3 | 79.5 | 89.7 | 62.9 | 72.1 | 36.0 | 40.9 | 10.4 | 12.0 | 65.0 | 79.5 |
| 6 | 81.1 | 100.0 | 76.7 | 88.4 | 54.5 | 64.6 | 36.0 | 41.5 | 9.9 | 11.5 | 60.9 | 77.4 |
| 7 | 74.9 | 96.2 | 73.0 | 86.8 | 53.5 | 65.2 | 31.8 | 38.6 | 9.3 | 11.0 | 57.1 | 75.5 |
| 8 | 70.0 | 93.2 | 70.9 | 86.2 | 52.2 | 65.7 | 30.7 | 36.8 | | | 53.8 | 74.0 |
| 9 | 66.4 | 92.1 | 68.1 | 85.1 | 50.5 | 66.0 | 26.4 | 33.4 | | | 50.0 | 71.4 |
| 10 | 66.4 | 95.0 | 68.1 | 84.5 | 50.5 | 65.7 | 26.4 | 33.1 | | | 46.6 | 69.1 |

Table 4d. Observed (obs.) and relative (rel.) survival of patients with bladder cancer by UICC for period 1998-2012 (N=1,490).

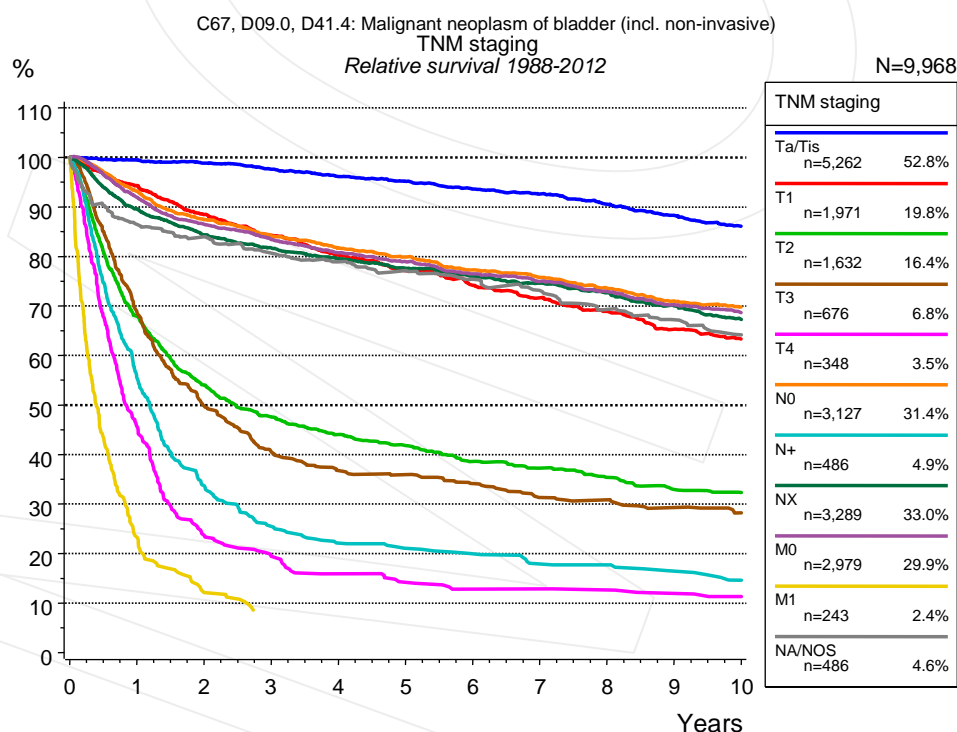


Figure 4e. Relative survival of patients with bladder cancer by TNM staging. For 9,972 of 10,454 cases diagnosed between 1988 and 2012 valid data could be obtained for this item. For a total of 9,968 cases an evaluable classification was established. The accumulated percentage exceeds the 100% value because patients are potentially considered in more than one subgroup. The grey line represents the subgroup of 486 patients with missing values regarding TNM staging (4.6% of 10,454 patients, the percent values of all other categories are related to n=9,968).

| Years | TNM staging | | | | | | | | | | | | | |
|-------|-------------------|--------|---------------|--------|---------------|--------|-------------|--------|-------------|--------|---------------|--------|-------------|--------|
| | Ta/Tis n=5,262 | | T1 n=1,971 | | T2 n=1,632 | | T3 n=676 | | T4 n=348 | | N0 n=3,127 | | N+ n=486 | |
| | obs. % | rel. % | obs. % | rel. % | obs. % | rel. % | obs. % | rel. % | obs. % | rel. % | obs. % | rel. % | obs. % | rel. % |
| 0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1 | 95.6 | 99.5 | 89.9 | 94.3 | 64.1 | 67.9 | 66.4 | 68.8 | 43.9 | 45.7 | 89.8 | 93.2 | 54.0 | 55.6 |
| 2 | 91.3 | 98.8 | 80.7 | 88.5 | 48.5 | 54.0 | 46.7 | 49.8 | 21.9 | 23.7 | 81.2 | 87.4 | 31.7 | 33.7 |
| 3 | 86.8 | 97.6 | 73.7 | 84.2 | 40.9 | 47.6 | 37.0 | 40.5 | 17.4 | 19.5 | 75.4 | 84.1 | 23.4 | 25.5 |
| 4 | 82.3 | 96.1 | 67.4 | 80.3 | 36.3 | 44.0 | 32.5 | 36.7 | 13.9 | 15.9 | 70.6 | 81.7 | 19.7 | 22.1 |
| 5 | 78.5 | 95.2 | 62.2 | 77.1 | 33.0 | 41.8 | 30.9 | 35.9 | 12.0 | 14.2 | 66.5 | 79.9 | 18.1 | 21.0 |
| 6 | 74.3 | 93.6 | 57.4 | 74.2 | 29.2 | 38.6 | 28.3 | 34.1 | 10.4 | 12.8 | 61.8 | 77.2 | 16.7 | 19.9 |
| 7 | 70.7 | 92.6 | 53.2 | 71.6 | 27.0 | 37.2 | 25.1 | 31.3 | 10.4 | 12.8 | 58.4 | 75.7 | 14.6 | 17.9 |
| 8 | 66.5 | 90.6 | 49.2 | 68.9 | 24.6 | 35.4 | 24.2 | 30.8 | 10.0 | 12.6 | 54.6 | 73.6 | 14.2 | 17.7 |
| 9 | 62.5 | 88.3 | 44.8 | 65.3 | 22.0 | 32.9 | 22.2 | 29.3 | 9.0 | 11.9 | 50.8 | 71.0 | 12.6 | 16.4 |
| 10 | 58.6 | 86.0 | 41.7 | 63.3 | 20.8 | 32.3 | 20.5 | 28.2 | 8.1 | 11.3 | 48.1 | 69.8 | 10.9 | 14.6 |

| cont'd Years | TNM staging | | | | | | | |
|-----------------|---------------|--------|---------------|--------|-------------|--------|-----------------|--------|
| | NX n=3,289 | | M0 n=2,979 | | M1 n=243 | | NA/NOS n=486 | |
| | obs. % | rel. % | obs. % | rel. % | obs. % | rel. % | obs. % | rel. % |
| 0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1 | 85.3 | 89.6 | 88.3 | 91.9 | 22.7 | 23.3 | 82.7 | 86.4 |
| 2 | 76.8 | 84.4 | 79.9 | 86.5 | 11.2 | 12.1 | 77.3 | 84.0 |
| 3 | 71.3 | 81.7 | 74.2 | 83.4 | | | 71.5 | 80.6 |
| 4 | 66.6 | 79.5 | 69.1 | 80.7 | | | 67.3 | 78.9 |
| 5 | 62.4 | 77.6 | 65.1 | 78.9 | | | 63.7 | 77.1 |
| 6 | 58.7 | 76.0 | 60.6 | 76.5 | | | 60.0 | 75.4 |
| 7 | 55.3 | 74.6 | 57.2 | 75.0 | | | 55.8 | 73.1 |
| 8 | 51.7 | 72.7 | 53.5 | 72.9 | | | 51.1 | 69.3 |
| 9 | 47.9 | 70.0 | 49.7 | 70.2 | | | 47.6 | 67.2 |
| 10 | 44.2 | 67.2 | 46.7 | 68.7 | | | 44.0 | 64.1 |

Table 4f. Observed (obs.) and relative (rel.) survival of patients with bladder cancer by TNM staging for period 1988-2012 (N=20,013).

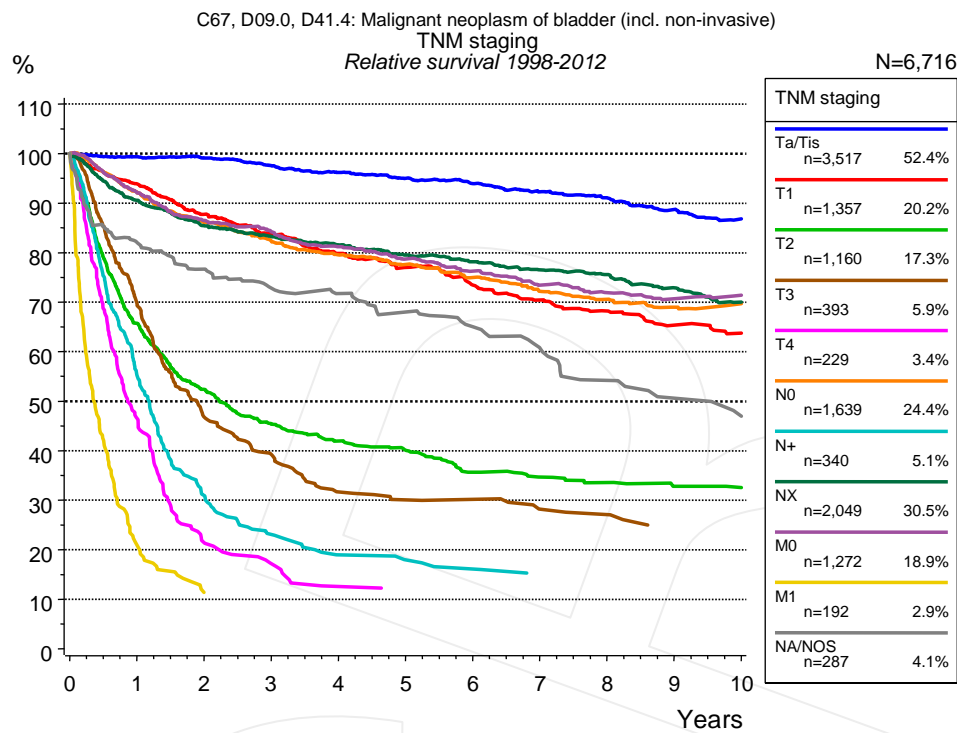


Figure 4g. Relative survival of patients with bladder cancer by TNM staging. For 6,718 of 7,003 cases diagnosed between 1998 and 2012 valid data could be obtained for this item. For a total of 6,716 cases an evaluable classification was established. The accumulated percentage exceeds the 100% value because patients are potentially considered in more than one subgroup. The grey line represents the subgroup of 287 patients with missing values regarding TNM staging (4.1% of 7,003 patients, the percent values of all other categories are related to n=6,716).

| TNM staging | | | | | | | | | | | | | | |
|-------------|-------------------|--------|---------------|--------|---------------|--------|-------------|--------|-------------|--------|---------------|--------|-------------|--------|
| | Ta/Tis n=3,517 | | T1 n=1,357 | | T2 n=1,160 | | T3 n=393 | | T4 n=229 | | N0 n=1,639 | | N+ n=340 | |
| Years | obs. % | rel. % | obs. % | rel. % | obs. % | rel. % | obs. % | rel. % | obs. % | rel. % | obs. % | rel. % | obs. % | rel. % |
| 0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1 | 95.7 | 99.4 | 89.7 | 93.9 | 62.2 | 65.8 | 67.5 | 69.5 | 44.9 | 46.5 | 89.3 | 92.2 | 53.9 | 55.3 |
| 2 | 91.9 | 99.1 | 80.4 | 87.7 | 47.3 | 52.4 | 44.2 | 46.7 | 20.3 | 21.4 | 80.8 | 86.1 | 29.5 | 31.0 |
| 3 | 87.2 | 97.5 | 73.9 | 83.8 | 39.4 | 45.4 | 36.4 | 39.2 | 15.5 | 17.2 | 74.9 | 82.4 | 21.5 | 23.1 |
| 4 | 82.9 | 96.2 | 67.8 | 79.9 | 35.0 | 41.9 | 28.4 | 31.7 | 11.2 | 12.6 | 69.9 | 79.5 | 17.0 | 19.0 |
| 5 | 79.0 | 95.0 | 62.8 | 77.0 | 32.3 | 40.1 | 26.4 | 30.1 | | | 65.9 | 77.6 | 15.7 | 18.0 |
| 6 | 75.3 | 93.9 | 57.8 | 73.5 | 27.7 | 35.6 | 25.8 | 30.2 | | | 61.4 | 75.0 | 14.3 | 16.1 |
| 7 | 71.2 | 92.3 | 53.3 | 70.4 | 25.9 | 34.7 | 23.0 | 28.2 | | | 57.1 | 72.2 | 12.6 | 14.8 |
| 8 | 67.6 | 91.1 | 49.7 | 68.2 | 24.4 | 33.6 | 22.2 | 27.1 | | | 53.9 | 70.6 | | |
| 9 | 63.5 | 88.7 | 45.7 | 65.4 | 22.7 | 32.8 | 19.4 | 24.8 | | | 50.8 | 69.0 | | |
| 10 | 59.8 | 86.8 | 43.0 | 63.8 | 22.1 | 32.5 | 19.4 | 24.2 | | | 49.5 | 69.7 | | |

| cont'd Years | TNM staging | | | | | | | |
|-----------------|---------------|--------|---------------|--------|-------------|--------|-----------------|--------|
| | NX n=2,049 | | M0 n=1,272 | | M1 n=192 | | NA/NOS n=287 | |
| | obs. % | rel. % | obs. % | rel. % | obs. % | rel. % | obs. % | rel. % |
| 0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1 | 86.5 | 90.6 | 89.1 | 92.1 | 20.9 | 20.9 | 78.3 | 82.0 |
| 2 | 78.3 | 85.4 | 80.9 | 86.5 | 10.5 | 11.3 | 70.4 | 76.7 |
| 3 | 73.4 | 83.3 | 76.2 | 84.2 | | | 64.4 | 72.8 |
| 4 | 69.1 | 81.5 | 70.9 | 81.2 | | | 60.8 | 71.7 |
| 5 | 64.8 | 79.5 | 66.4 | 78.7 | | | 55.9 | 68.0 |
| 6 | 61.4 | 78.2 | 62.2 | 76.3 | | | 51.8 | 65.0 |
| 7 | 57.7 | 76.5 | 57.8 | 73.4 | | | 46.1 | 60.7 |
| 8 | 54.9 | 75.6 | 54.7 | 71.9 | | | 40.4 | 54.2 |
| 9 | 50.9 | 72.9 | 52.0 | 70.7 | | | 36.3 | 50.6 |
| 10 | 47.1 | 70.0 | 50.6 | 71.4 | | | 33.2 | 47.0 |

Table 4h. Observed (obs.) and relative (rel.) survival of patients with bladder cancer by TNM staging for period 1998-2012 (N=12,148).

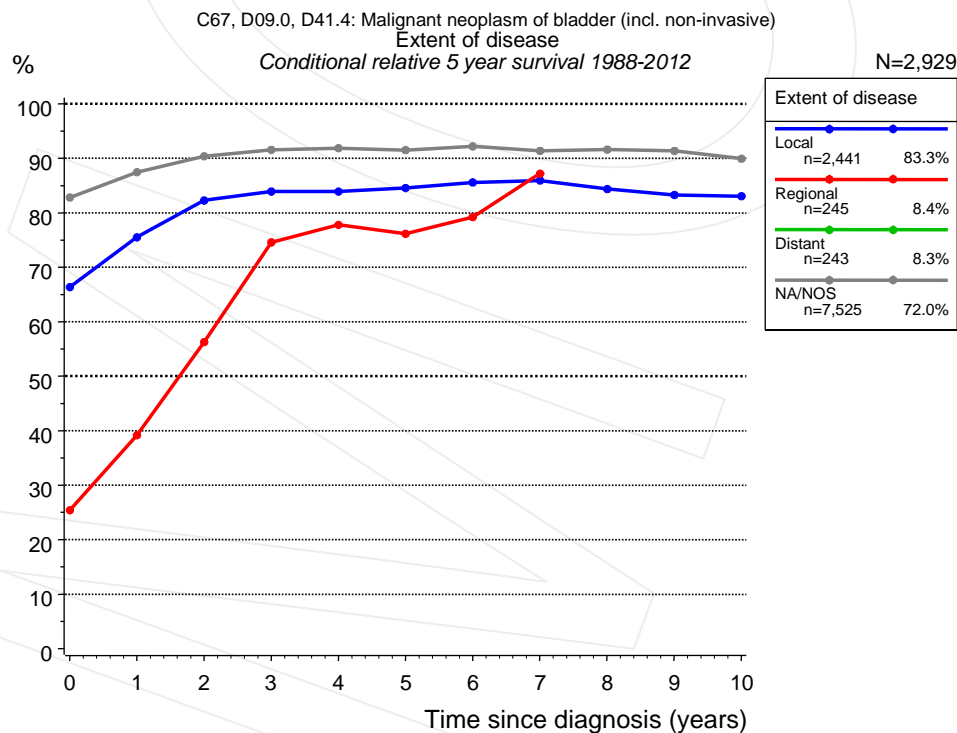


Figure 4i. Conditional relative 5-year survival of patients with bladder cancer by extent of disease. For 9,972 of 10,454 cases diagnosed between 1988 and 2012 valid data could be obtained for this item. For a total of 2,929 cases an evaluable classification was established. The grey line represents the subgroup of 7,525 patients with missing values regarding extent of disease (72.0% of 10,454 patients, the percent values of all other categories are related to n=2,929).

| Years | Extent of disease | | | | | | | |
|-------|-------------------|------------------------|----------|------------------------|---------|------------------------|--------|------------------------|
| | Local | | Regional | | Distant | | NA/NOS | |
| | n | Cond. surv. % 5 yrs | n | Cond. surv. % 5 yrs | n | Cond. surv. % 5 yrs | n | Cond. surv. % 5 yrs |
| 0 | 2,441 | 66.3 | 245 | 25.4 | 243 | | 7,525 | 82.8 |
| 1 | 1,870 | 75.5 | 134 | 39.2 | | | 6,419 | 87.5 |
| 2 | 1,485 | 82.3 | 74 | 56.3 | | | 5,556 | 90.4 |
| 3 | 1,232 | 83.9 | 52 | 74.6 | | | 4,783 | 91.5 |
| 4 | 1,021 | 83.9 | 41 | 77.8 | | | 4,113 | 91.9 |
| 5 | 850 | 84.6 | 37 | 76.2 | | | 3,550 | 91.5 |
| 6 | 708 | 85.6 | 32 | 79.2 | | | 3,031 | 92.2 |
| 7 | 612 | 85.9 | 27 | 87.2 | | | 2,657 | 91.4 |
| 8 | 526 | 84.4 | | | | | 2,284 | 91.6 |
| 9 | 441 | 83.3 | | | | | 1,951 | 91.4 |
| 10 | 386 | 83.1 | | | | | 1,636 | 89.9 |

Table 4j. Conditional relative 5-year survival of patients with bladder cancer by extent of disease for period 1988-2012 (N=2,929).

Conditional relative survival rates refer to the relative survival probability, in this case for 5 years after cancer diagnosis, compared to the age- and sex-matched population (=100%) under the condition of being alive for a certain time period (x-axis in Figure 4g). The results illustrate to what extent the cancer induced mortality of particular subgroups declines in the subsequent years after detection of the malignancy. For instance, according to the presented survival statistics, patients in the subgroup extent of disease="Local", who are alive at least 3 years after cancer diagnosis, the conditional relative 5-year survival rate is 83.9% (n=1,232).

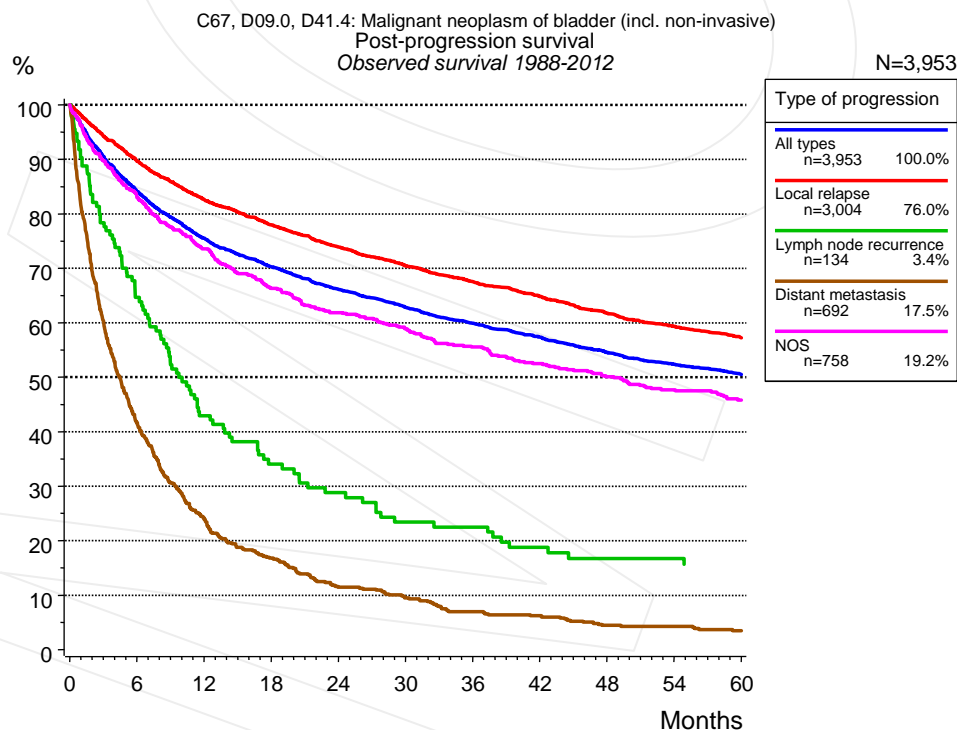


Figure 5a. Observed post-progression survival of 3,953 patients with bladder cancer diagnosed between 1988 and 2012 (incl. M1). These 3,953 patients with documented progression events during their course of disease represent 37.8% of the totally 10,454 evaluated cases. Patients with cancer relapse documented via death certificates only were excluded (n=615, 5.9%). Multiple progression types on different sites are included in the evaluation even when not occurring

synchronously. The NOS (not otherwise specified) class is included under the condition, that it is the one and only progression type during the course of disease.

Medical record documentation often lacks the linguistic severity to distinguish between local relapse, regional lymph node metastasis and distant spread in solid cancers. Frequently, the statement "not specified" is the only information in registries regarding relapse of the disease. The category "All types" denotes all cases who suffered from at least one relapse during the course of disease (incl. primary M1-status). Although, the real number of relapsed patients is likely to be much higher. The accumulated percentage of patients with local relapse or distant metastasis exceeds the 100% value because patients are potentially considered in more than one subgroup.

| Months | Type of progression | | | | NOS n=758 % |
|--------|---------------------------|-------------------------------|-------------------------------------|----------------------------------|-------------------|
| | All types n=3,953 % | Local relapse n=3,004 % | Lymph node recurrence n=134 % | Distant metastasis n=692 % | |
| 0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 12 | 75.5 | 82.6 | 42.9 | 23.9 | 73.6 |
| 24 | 66.1 | 73.9 | 28.8 | 11.5 | 61.8 |
| 36 | 59.9 | 67.5 | 22.5 | 7.0 | 55.5 |
| 48 | 54.5 | 61.8 | 16.7 | 4.4 | 50.1 |
| 60 | 50.5 | 57.3 | 15.7 | 3.5 | 45.8 |

Table 5b. Observed post-progression survival of patients with bladder cancer for period 1988-2012 (N=3,953).

Shortcuts

| | |
|------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| AS | Assembled survival chart (observed, expected, relative) |
| CS | Conditional survival |
| DCO | Death certificate only. The death certificate provides the only notification to the registry. |
| MCR | Munich Cancer Registry, Germany (Tumorregister München) |
| NA | Not available |
| NCI | National Cancer Institute, USA |
| NOS | Not otherwise specified |
| OS | Observed/overall survival (Kaplan-Meier estimate) |
| PPS | Post-progression survival |
| RS | Relative Survival. Ratio of observed and expected survival (derived from the normal population) |
| SEER | Surveillance, Epidemiology, and End Results, USA |
| TTP | Time to progression |
| | Date of entry: Date of diagnosis |
| | Event (Progression): First local recurrence, lymph node relapse or distant metastasis, unspecified recurrence |
| | First all-cause recurrence is illustrated by survival curves (Kaplan-Meier estimate). |
| | First local recurrence, lymph node relapse or distant metastasis are depicted cumulatively, where applicable ("reverse" Kaplan-Meier estimate). |
| UICC | Union for International Cancer Control, Geneva |

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