

# Munich Cancer Registry



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

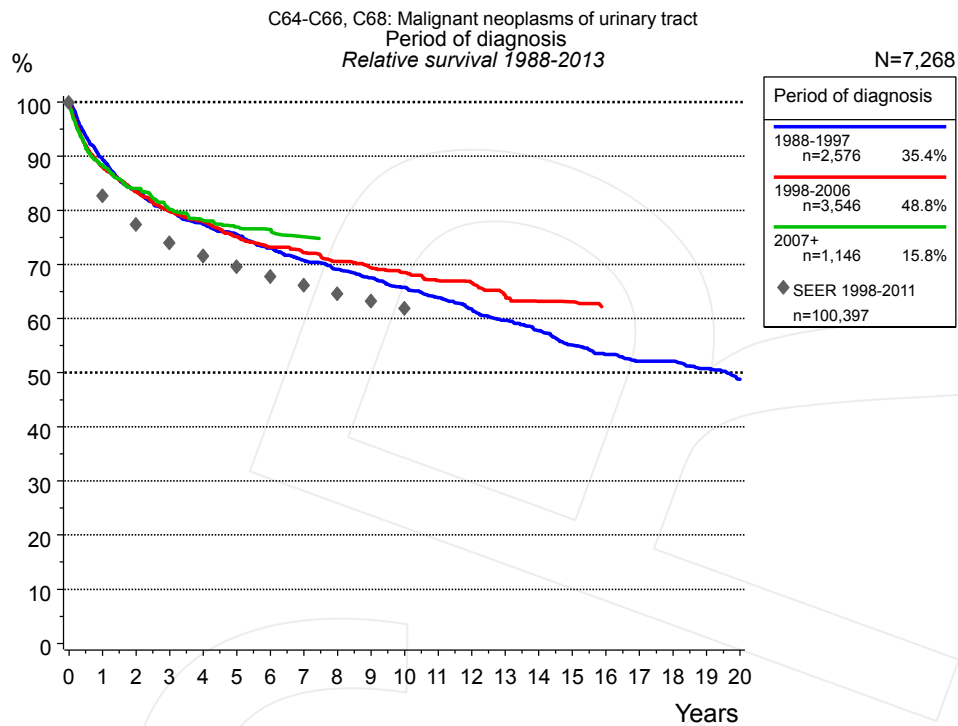
## Cancer statistics: Survival

### C64-C66, C68: Urinary tract cancer

Year of diagnosis	1988-2013
Patients	13,969
Diseases	14,401
Cases evaluated	7,268
Creation date	05/13/2015
Export date	12/30/2014
Population	4.64 m



[http://www.tumorregister-muenchen.de/en/facts/surv/surv\\_C6466E.pdf](http://www.tumorregister-muenchen.de/en/facts/surv/surv_C6466E.pdf)



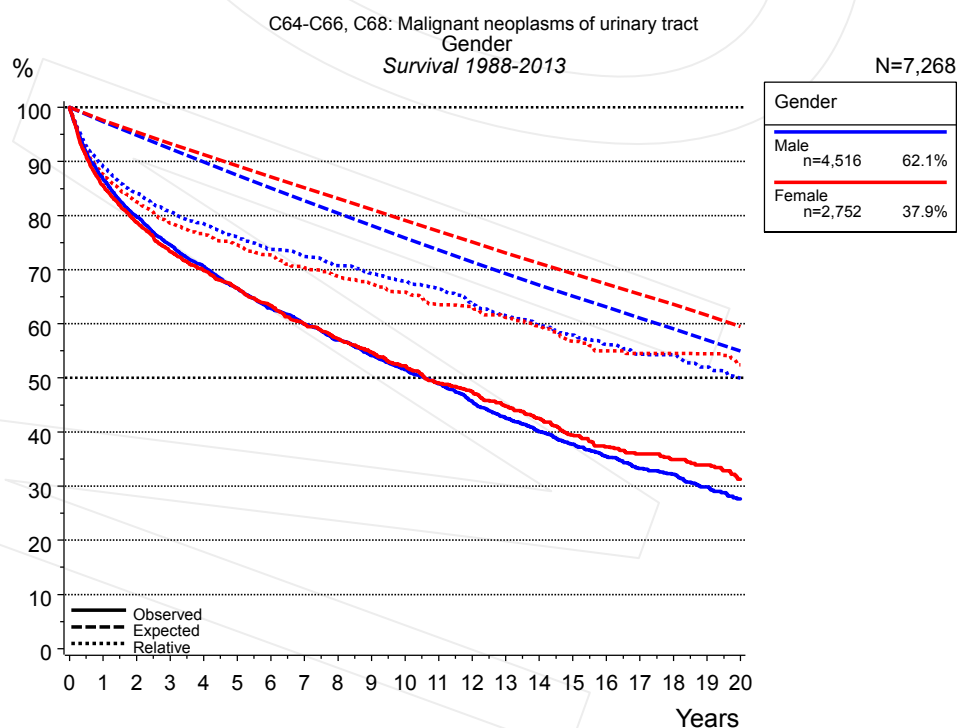
**Figure 1a.** Relative survival of patients with urinary tract cancer by period of diagnosis. Included in the evaluation are 7,268 cases diagnosed between 1988 and 2013.

The survival results of the SEER program (Surveillance, Epidemiology, and End Results) of the American National Cancer Institute (NCI) are summarized as the period of diagnosis from 1998 to 2011, and are represented by gray diamonds in order to facilitate comparisons between MCR and SEER.

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=2,576		1998-2006 n=3,546		2007+ n=1,146	
	obs. %	rel. %	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0	100.0	100.0
1	87.2	89.4	85.7	88.0	85.9	88.1
2	79.4	83.5	79.3	83.4	80.2	84.0
3	74.2	80.1	74.0	79.8	74.5	80.2
4	70.0	77.4	70.5	77.9	71.0	78.2
5	66.5	75.5	66.3	75.2	67.9	76.9
6	62.7	73.0	62.9	73.2	66.0	76.5
7	59.1	70.7	60.5	72.2	63.7	75.1
8	56.3	69.1	57.5	70.5		
9	53.5	67.5	55.0	69.4		
10	50.8	65.8	52.7	68.5		
11	48.0	63.9	50.1	67.0		
12	45.2	61.8	48.3	66.6		
13	42.4	59.6	45.3	64.3		
14	39.9	57.8	43.0	63.2		
15	37.0	55.1	41.9	63.1		
16	34.8	53.4				
17	32.9	52.1				
18	31.9	52.1				
19	30.2	50.8				
20	27.9	48.8				

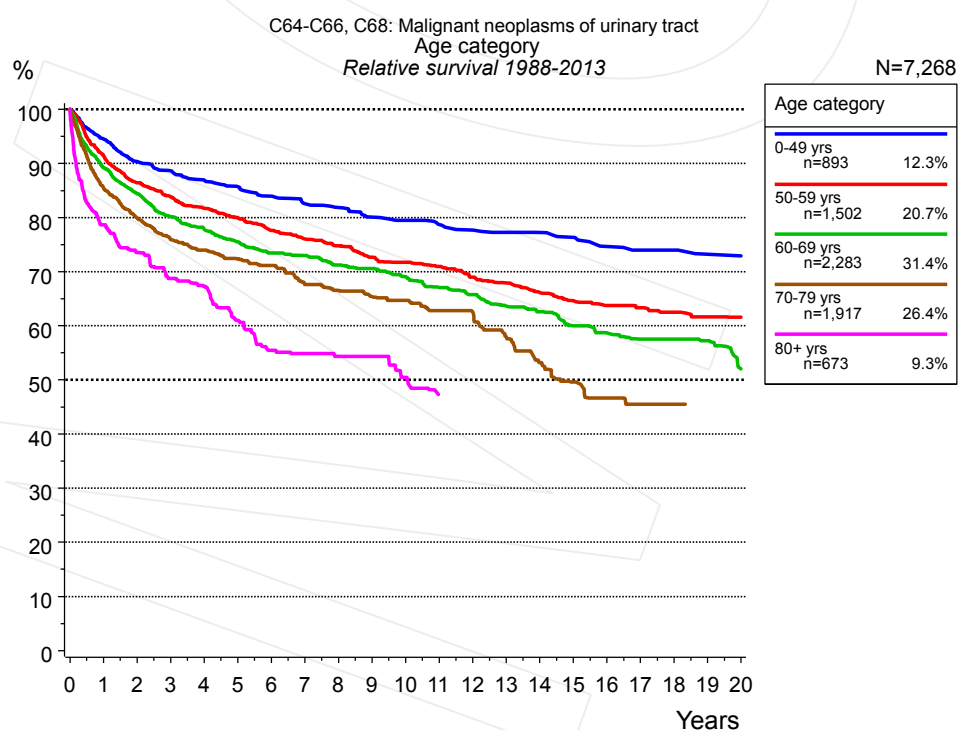
**Table 1b.** Observed (obs.) and relative (rel.) survival of patients with urinary tract cancer by period of diagnosis for period 1988-2013 (N=7,268).



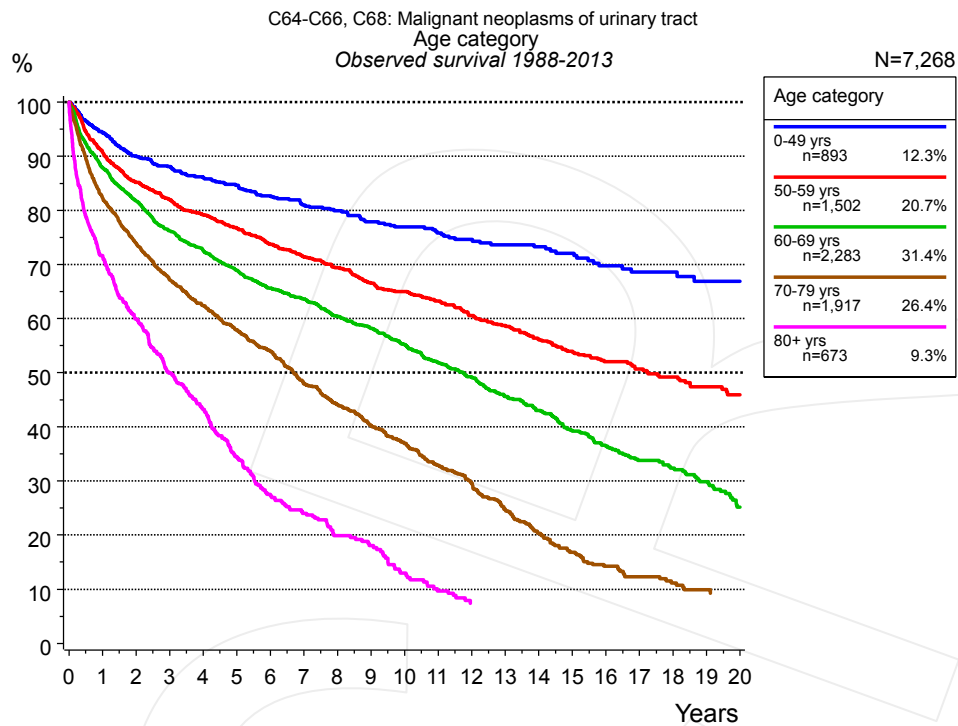
**Figure 2a.** Survival of patients with urinary tract cancer by gender. Included in the evaluation are 7,268 cases diagnosed between 1988 and 2013.

Years	Gender			
	Male n=4,516		Female n=2,752	
	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0
1	86.7	89.0	85.6	87.7
2	79.8	84.1	78.8	82.5
3	74.6	80.7	73.4	78.6
4	70.6	78.5	69.9	76.5
5	66.6	76.1	66.5	74.6
6	62.9	73.8	63.4	72.7
7	59.9	72.4	60.0	70.4
8	57.0	70.7	57.3	68.8
9	54.1	69.3	54.7	67.5
10	51.5	67.9	52.2	65.9
11	48.9	66.4	49.1	63.6
12	45.7	63.9	47.5	63.2
13	42.7	61.5	44.8	61.2
14	40.1	59.6	42.6	59.7
15	37.7	57.9	39.5	56.8
16	35.5	56.2	37.3	55.0
17	33.3	54.4	36.0	54.6
18	32.2	54.3	34.9	54.6
19	29.9	52.0	34.0	54.5
20	27.7	50.0	31.3	52.4

**Table 2b.** Observed (obs.) and relative (rel.) survival of patients with urinary tract cancer by gender for period 1988-2013 (N=7,268).



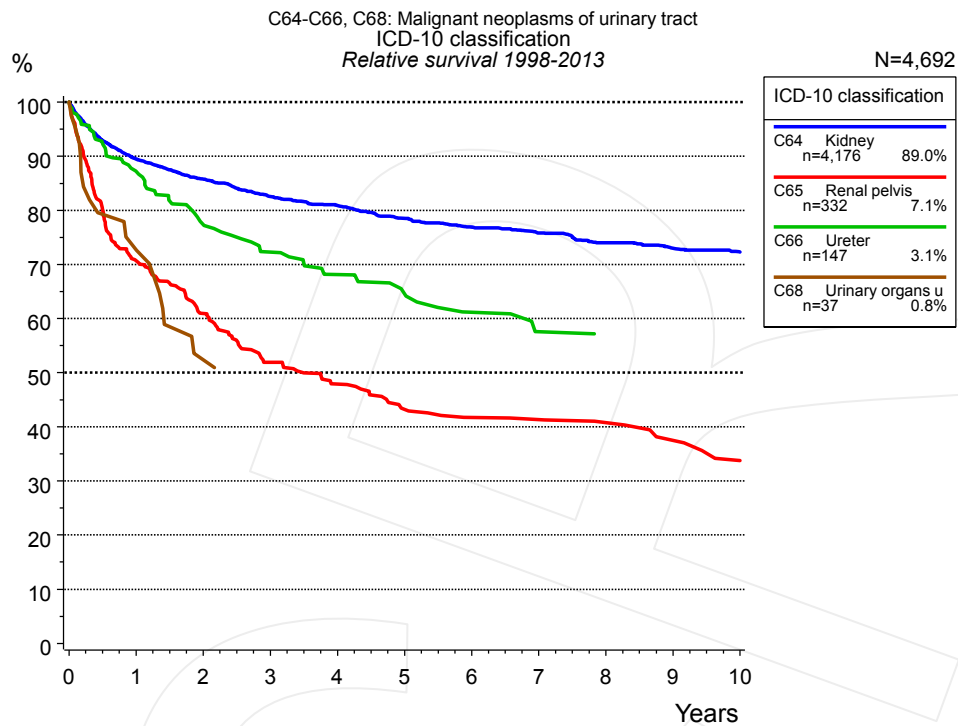
**Figure 3a.** Relative survival of patients with urinary tract cancer by age category. Included in the evaluation are 7,268 cases diagnosed between 1988 and 2013.



**Figure 3b.** Observed survival of patients with urinary tract cancer by age category. Included in the evaluation are 7,268 cases diagnosed between 1988 and 2013.

Years	Age category									
	0-49 yrs n=893		50-59 yrs n=1,502		60-69 yrs n=2,283		70-79 yrs n=1,917		80+ yrs n=673	
	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	94.3	94.5	90.7	91.4	87.8	89.2	82.3	85.5	71.5	78.7
2	90.0	90.4	85.2	86.4	81.7	84.4	73.9	80.0	59.9	73.6
3	88.1	88.7	82.0	83.8	76.2	80.2	67.1	75.9	49.9	68.8
4	86.1	86.9	79.2	81.7	72.6	77.9	62.4	74.0	43.2	67.3
5	84.6	85.7	76.7	79.9	69.0	75.5	57.9	72.4	34.6	61.1
6	82.7	84.0	73.7	77.7	65.7	73.5	54.0	71.2	27.5	55.5
7	81.0	82.6	71.4	76.1	63.7	73.0	47.9	67.6	24.0	54.9
8	79.9	81.9	69.4	74.8	60.4	71.2	44.1	66.5	19.9	54.4
9	77.9	80.1	66.5	72.7	58.2	70.6	40.2	65.4	18.1	54.4
10	76.9	79.5	65.0	71.7	55.2	69.1	36.9	64.7	13.0	50.5
11	75.8	78.7	63.2	71.0	51.9	67.1	33.0	62.8	9.7	47.3
12	74.6	77.7	60.5	69.0	49.2	65.8	29.6	62.5		
13	73.7	77.3	58.7	67.9	45.6	63.6	24.9	58.0		
14	73.3	77.2	56.2	66.1	43.1	62.6	20.3	53.2		
15	72.1	76.3	53.9	64.7	39.2	60.0	16.9	49.6		
16	69.8	74.7	52.0	63.8	36.5	58.7	14.2	46.7		
17	68.6	74.0	50.7	63.4	33.8	57.5	12.4	45.5		
18	68.6	74.0	49.2	62.5	32.4	57.5	11.2	45.5		
19	66.9	73.2	47.4	61.6	29.9	57.2				
20	66.9	72.9	45.9	61.6	25.2	52.0				

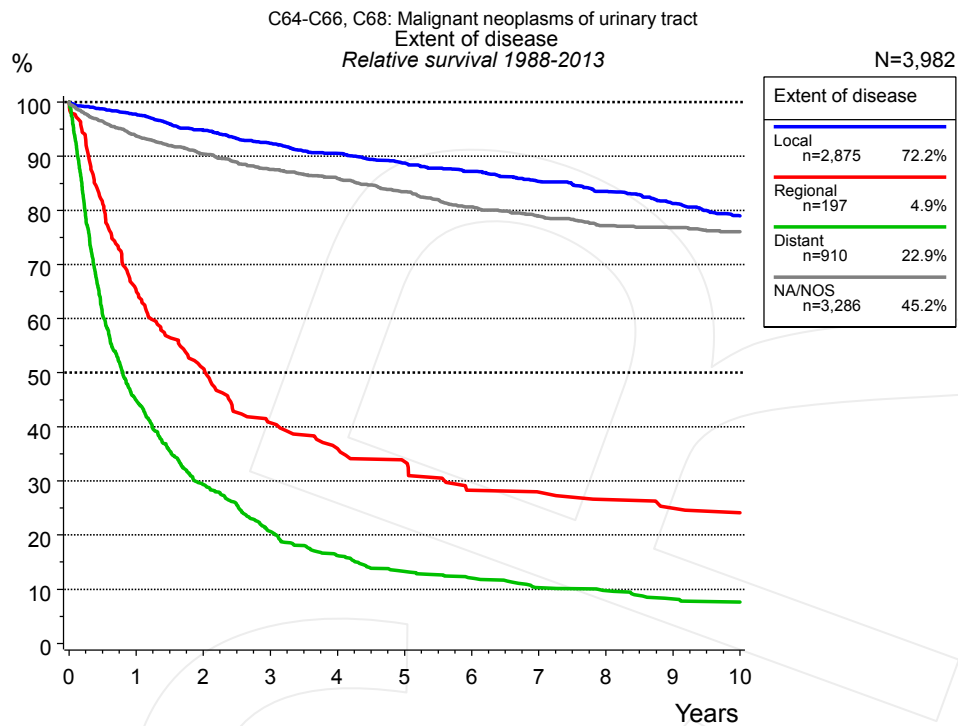
**Table 3c.** Observed (obs.) and relative (rel.) survival of patients with urinary tract cancer by age category for period 1988-2013 (N=7,268).



**Figure 4a.** Relative survival of patients with urinary tract cancer by ICD-10 classification. Included in the evaluation are 4,692 cases diagnosed between 1998 and 2013.

ICD-10 classification								
Years	C64 Kidney n=4,176		C65 Renal pelvis n=332		C66 Ureter n=147		C68 Urinary organs unspec. n=37	
	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	87.3	89.5	68.1	70.7	83.6	87.2	72.9	72.7
2	81.8	85.7	56.4	61.0	71.8	77.4	50.2	52.4
3	76.9	82.5	46.2	51.9	64.2	72.3		
4	73.6	80.9	41.1	47.9	58.2	68.1		
5	69.7	78.5	35.8	43.2	53.5	64.6		
6	66.6	76.9	33.3	41.7	48.3	61.2		
7	64.0	75.8	32.5	41.3	43.6	57.6		
8	60.9	74.0	30.8	40.8	41.9	57.2		
9	58.3	73.0	27.8	37.5	41.9	57.1		
10	56.2	72.3	24.2	33.7				

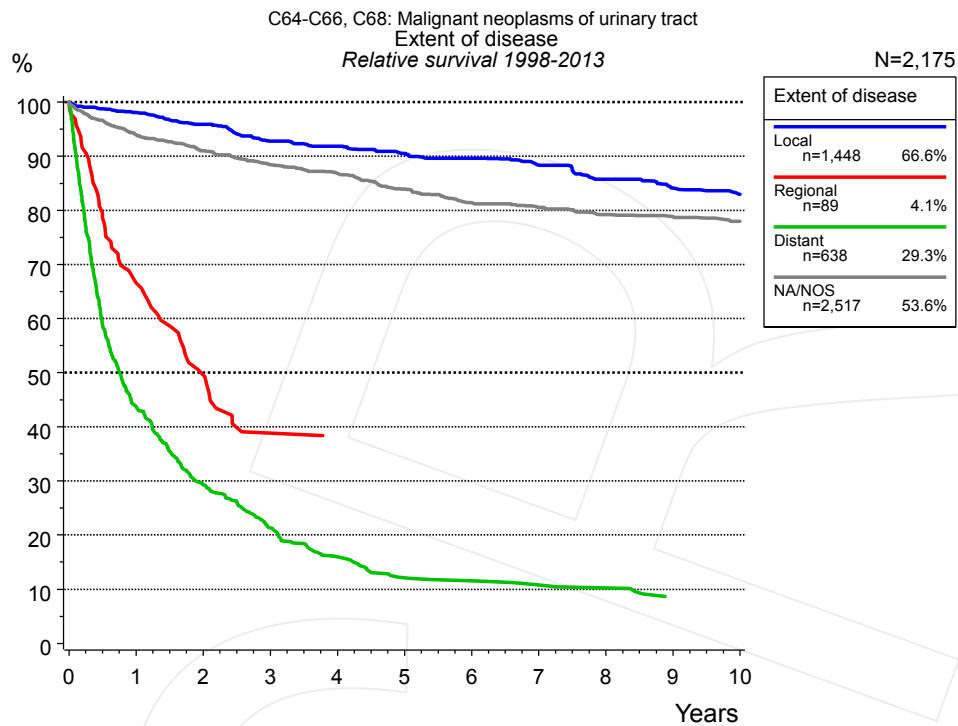
**Table 4b.** Observed (obs.) and relative (rel.) survival of patients with urinary tract cancer by ICD-10 classification for period 1998-2013 (N=4,692).



**Figure 4c.** Relative survival of patients with urinary tract cancer by extent of disease. For 6,983 of 7,268 cases diagnosed between 1988 and 2013 valid data could be obtained for this item. For a total of 3,982 cases an evaluable classification was established. The grey line represents the subgroup of 3,286 patients with missing values regarding extent of disease (45.2% of 7,268 patients, the percent values of all other categories are related to n=3,982).

Years	Extent of disease							
	Local n=2,875		Regional n=197		Distant n=910		NA/NOS n=3,286	
	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	95.5	97.7	63.7	65.3	43.7	44.9	91.2	93.7
2	90.4	94.8	48.7	50.8	28.0	29.3	85.7	90.4
3	86.0	92.4	37.9	40.8	19.3	20.7	80.9	87.5
4	82.2	90.5	33.2	36.0	14.8	16.2	77.3	85.9
5	78.7	88.7	30.1	33.6	11.8	13.3	73.1	83.4
6	75.4	87.2	24.7	28.3	10.6	12.1	68.8	80.6
7	71.9	85.3	23.9	28.0	8.8	10.3	65.5	78.9
8	68.7	83.5	22.3	26.6	8.2	9.8	62.3	77.1
9	65.0	81.3	20.8	25.0	6.8	8.2	60.2	76.8
10	61.5	79.0	20.0	24.2	6.1	7.6	58.1	76.0

**Table 4d.** Observed (obs.) and relative (rel.) survival of patients with urinary tract cancer by extent of disease for period 1988-2013 (N=3,982).

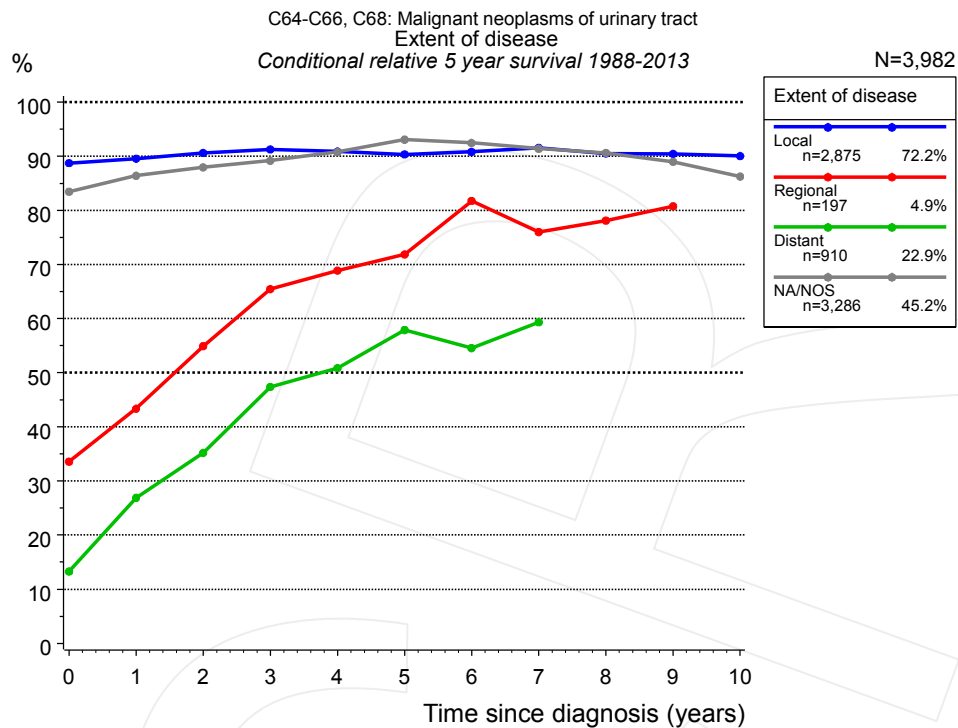


**Figure 4e.** Relative survival of patients with urinary tract cancer by extent of disease. For 4,549 of 4,692 cases diagnosed between 1998 and 2013 valid data could be obtained for this item. For a total of 2,175 cases an evaluable classification was established. The grey line represents the subgroup of 2,517 patients with missing values regarding extent of disease (53.6% of 4,692 patients, the percent values of all other categories are related to n=2,175).

Years	Extent of disease							
	Local n=1,448		Regional n=89		Distant n=638		NA/NOS n=2,517	
	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	96.0	98.1	64.7	66.6	42.6	43.7	91.5	93.9
2	91.7	95.9	48.0	49.6	27.9	29.3	86.4	91.0
3	86.5	92.8	36.5	38.9	19.9	21.3	81.8	88.4
4	83.8	91.8	34.8	38.1	14.6	16.0	78.3	86.8
5	80.5	90.5	34.8	36.9	10.9	12.1	73.7	83.9
6	77.9	89.6			10.4	11.6	69.6	81.4
7	74.7	88.4			9.3	10.8	67.0	80.6
8	70.9	85.7			8.9	10.2	64.1	79.2
9	67.4	84.1			7.2	8.3	61.9	78.8
10	64.6	83.0					59.6	78.0

**Table 4f.** Observed (obs.) and relative (rel.) survival of patients with urinary tract cancer by extent of disease for period 1998-2013 (N=2,175).



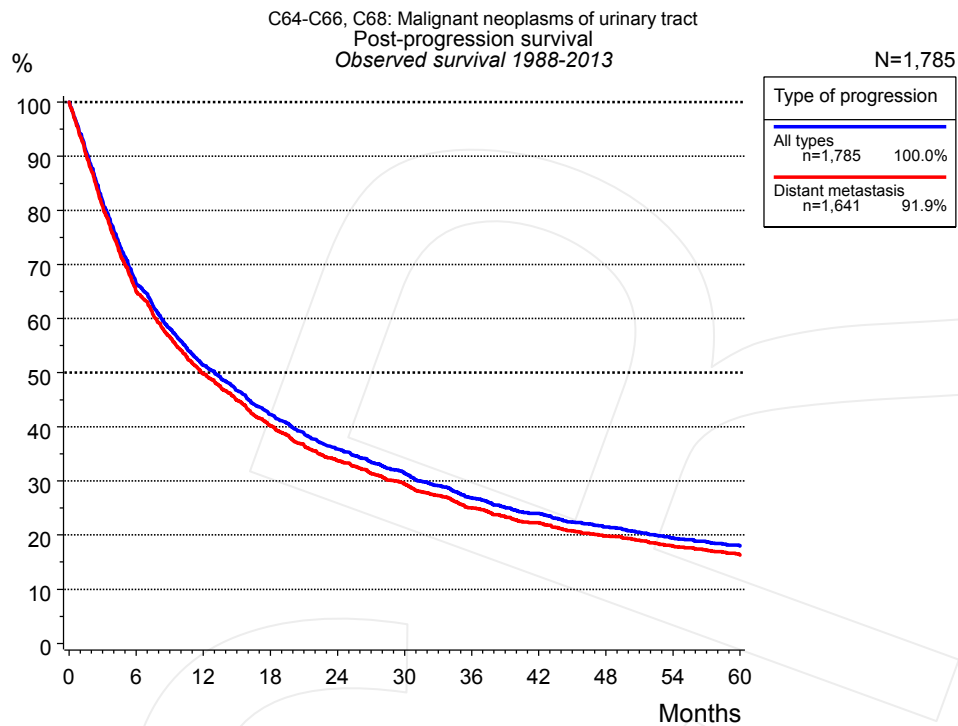


**Figure 4g.** Conditional relative 5-year survival of patients with urinary tract cancer by extent of disease. For 6,983 of 7,268 cases diagnosed between 1988 and 2013 valid data could be obtained for this item. For a total of 3,982 cases an evaluable classification was established. The grey line represents the subgroup of 3,286 patients with missing values regarding extent of disease (45.2% of 7,268 patients, the percent values of all other categories are related to n=3,982).

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	2,875	88.7	197	33.6	910	13.3	3,286	83.5
1	2,637	89.6	123	43.4	373	26.9	2,830	86.4
2	2,374	90.6	87	54.9	222	35.2	2,406	88.0
3	2,131	91.3	65	65.5	143	47.4	2,067	89.2
4	1,933	90.9	55	68.9	104	50.9	1,782	90.8
5	1,726	90.3	45	71.9	76	57.9	1,496	93.1
6	1,574	90.8	35	81.8	62	54.6	1,246	92.5
7	1,441	91.6	31	76.0	47	59.3	1,070	91.4
8	1,319	90.5	29	78.1			914	90.6
9	1,174	90.4	27	80.8			776	89.0
10	1,035	90.1					657	86.3

**Table 4h.** Conditional relative 5-year survival of patients with urinary tract cancer by extent of disease for period 1988-2013 (N=3,982).

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 4e). 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 91.3% (n=2,131).



**Figure 5a.** Observed post-progression survival of 1,785 patients with urinary tract cancer diagnosed between 1988 and 2013 (incl. M1). These 1,785 patients with documented progression events during their course of disease represent 24.6% of the totally 7,268 evaluated cases. Patients with cancer relapse documented via death certificates only were excluded (n=309, 4.3%). Multiple progression types on different sites are included in the evaluation even when not occurring synchronously.

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	
	All types n=1,785	Distant metastasis n=1,641
	%	%
0	100.0	100.0
12	51.4	49.8
24	35.9	33.8
36	26.9	25.1
48	21.5	19.9
60	18.0	16.3

**Table 5b.** Observed post-progression survival of patients with urinary tract cancer for period 1988-2013 (N=1,785).

**Shortcuts**

MCR	Munich Cancer Registry, Germany (Tumorregister München)
NCI	National Cancer Institute, USA
SEER	Surveillance, Epidemiology, and End Results, USA
UICC	Union for International Cancer Control, Geneva
DCO	Death certificate only. The death certificate provides the only notification to the registry.
NA	Not available
NOS	Not otherwise specified
OS	Observed/overall survival (Kaplan-Meier estimate)
RS	Relative survival, compared to the general population, ratio of observed to expected survival (Ederer II method), reflecting excess mortality among cancer patients
AS	Assembled survival chart (observed, expected, relative)
PPS	Post-progression survival, survival since first relapse (Kaplan-Meier estimate)
progression	Date of entry: Date of first locoregional recurrence, distant metastasis, unspecified
	Event: Death of all causes
CS	Conditional survival, survival probability under the condition of surviving a given period of time

**Recommended Citation**

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