

Munich Cancer Registry



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

Cancer statistics: Survival

C64: Kidney cancer

Year of diagnosis	1988-2012
Patients	11,370
Diseases	11,625
Cases evaluated	6,384
Creation date	03/25/2014
Export date	02/12/2014
Population	4.5 m



http://www.tumorregister-muenchen.de/en/facts/surv/surv_C64__E.pdf

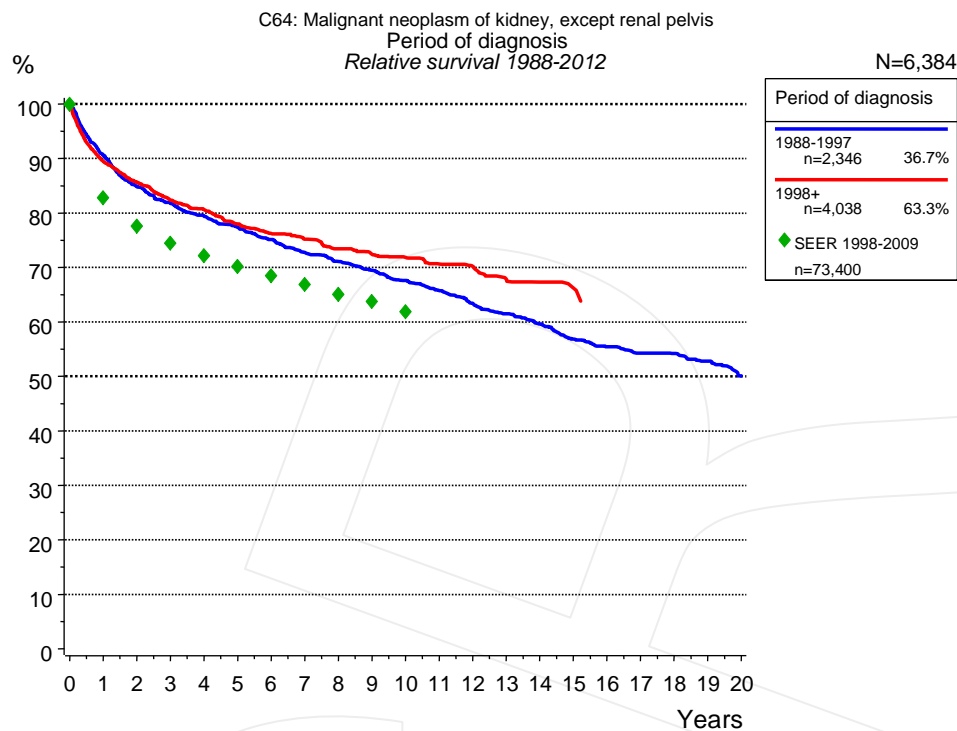


Figure 1a. Relative survival of patients with kidney cancer by period of diagnosis. Included in the evaluation are 6,384 cases diagnosed between 1988 and 2012.

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 2009, and are represented by green 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		1998+	
	n=2,346		n=4,038	
	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0
1	88.4	90.6	87.3	89.4
2	80.8	84.8	81.7	85.6
3	76.0	81.8	76.8	82.3
4	72.0	79.4	73.4	80.6
5	68.4	77.4	69.3	78.0
6	64.8	75.1	66.0	76.2
7	61.1	72.7	63.5	75.2
8	58.2	71.1	60.4	73.4
9	55.4	69.4	58.0	72.5
10	52.5	67.6	55.9	71.8
11	49.7	65.7	53.5	70.6
12	46.6	63.4	51.6	70.2
13	44.0	61.5	48.5	67.9
14	41.5	59.6	46.6	67.3
15	38.4	56.9	45.2	66.2
16	36.4	55.5		
17	34.5	54.2		
18	33.5	54.2		
19	31.7	52.8		
20	28.9	50.1		

Table 1b. Observed (obs.) and relative (rel.) survival of patients with kidney cancer by period of diagnosis for period 1988-2012 (N=6,384).

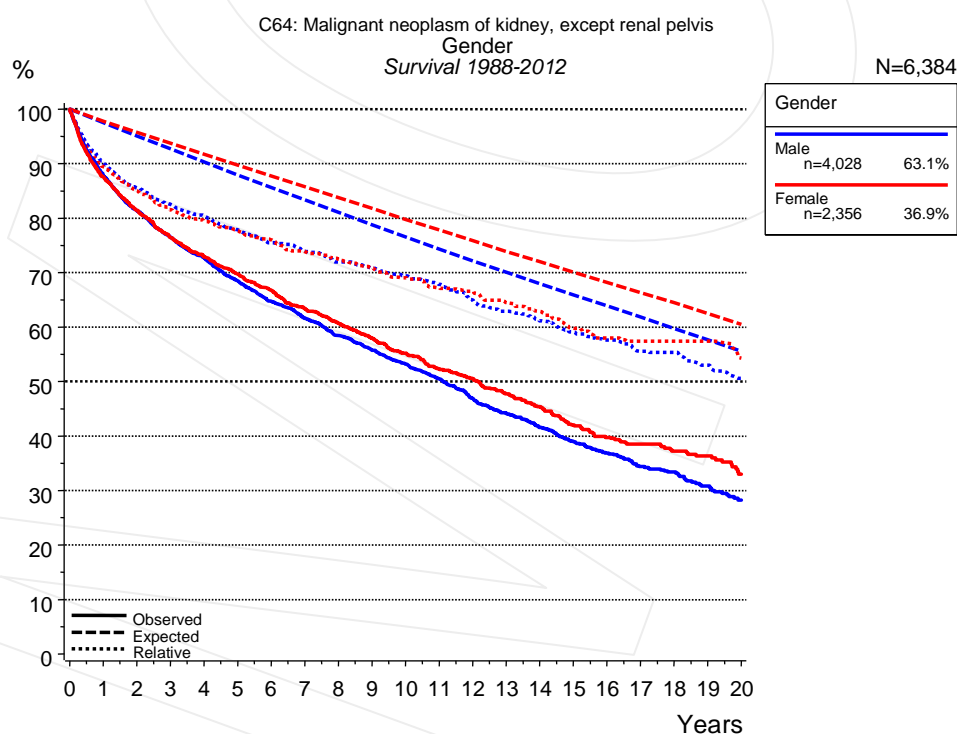


Figure 2a. Survival of patients with kidney cancer by gender. Included in the evaluation are 6,384 cases diagnosed between 1988 and 2012.

Years	Gender			
	Male n=4,028		Female n=2,356	
	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0
1	87.8	90.0	87.6	89.5
2	81.3	85.5	81.4	85.0
3	76.5	82.5	76.4	81.5
4	72.7	80.4	73.0	79.4
5	68.5	77.8	69.7	77.7
6	64.7	75.5	66.7	76.0
7	61.6	73.9	63.4	73.9
8	58.4	71.9	60.7	72.5
9	55.8	70.8	57.9	70.8
10	53.1	69.4	55.2	69.1
11	50.4	67.8	52.4	67.2
12	46.9	65.0	50.5	66.6
13	44.2	62.9	47.7	64.5
14	41.6	61.1	45.4	62.9
15	38.9	59.1	42.0	59.8
16	36.9	57.6	39.8	58.0
17	34.4	55.6	38.5	57.4
18	33.4	55.3	37.2	57.4
19	30.8	53.0	36.3	57.4
20	28.3	50.6	33.0	54.3

Table 2b. Observed (obs.) and relative (rel.) survival of patients with kidney cancer by gender for period 1988-2012 (N=6,384).

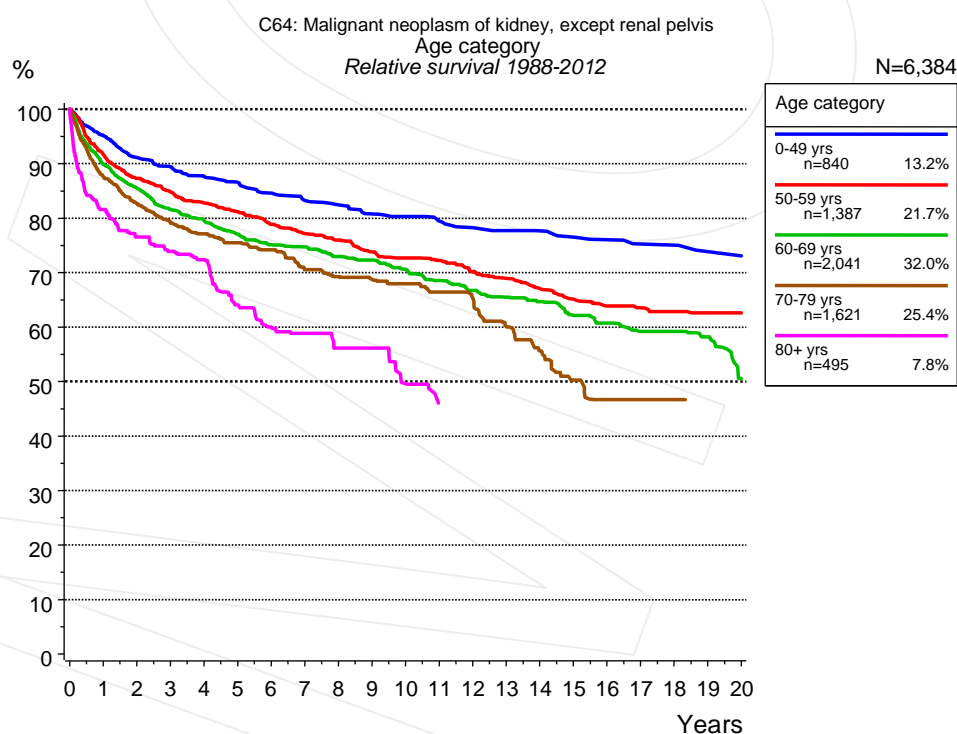


Figure 3a. Relative survival of patients with kidney cancer by age category. Included in the evaluation are 6,384 cases diagnosed between 1988 and 2012.

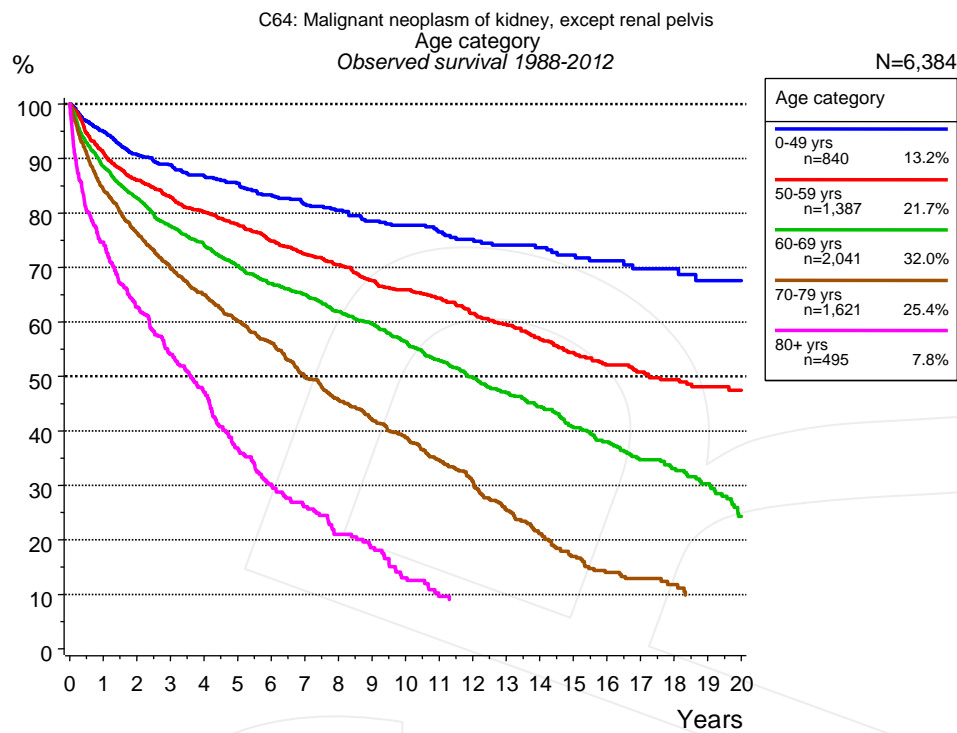


Figure 3b. Observed survival of patients with kidney cancer by age category. Included in the evaluation are 6,384 cases diagnosed between 1988 and 2012.

Years	Age category									
	0-49 yrs n=840		50-59 yrs n=1,387		60-69 yrs n=2,041		70-79 yrs n=1,621		80+ yrs n=495	
	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	94.9	95.1	91.0	91.6	88.4	89.9	84.3	87.6	74.4	81.6
2	90.7	91.1	86.0	87.3	82.7	85.4	76.3	82.7	62.7	76.5
3	88.8	89.4	82.9	84.8	77.5	81.6	69.8	79.1	54.0	73.9
4	86.8	87.7	80.2	82.8	74.2	79.5	65.0	77.1	47.1	72.4
5	85.4	86.5	77.8	81.1	70.3	77.0	60.2	75.5	36.9	64.1
6	83.3	84.6	74.8	78.9	67.1	75.1	56.1	74.2	30.2	60.0
7	81.6	83.2	72.4	77.2	65.1	74.7	49.8	70.5	26.1	58.8
8	80.5	82.4	70.5	76.0	61.9	73.0	45.7	69.2	21.0	56.1
9	78.5	80.8	67.5	73.8	59.6	72.3	42.1	68.8	18.6	56.1
10	77.7	80.3	65.9	72.7	56.4	70.6	38.8	68.0	13.1	49.6
11	76.5	79.5	64.3	72.2	53.0	68.5	34.7	66.4	9.6	46.1
12	75.2	78.2	61.5	70.2	49.9	66.7	30.7	65.3		
13	74.1	77.7	59.6	68.9	47.0	65.5	25.6	60.0		
14	73.7	77.7	56.9	67.0	44.4	64.7	21.1	55.6		
15	72.3	76.5	54.3	65.1	40.6	62.1	17.0	50.3		
16	71.2	76.0	52.1	63.9	38.0	60.7	14.0	46.7		
17	69.8	75.2	50.8	63.5	34.7	59.2	12.9	46.7		
18	69.8	75.0	49.4	62.8	33.1	59.2	11.8	46.7		
19	67.6	73.8	48.1	62.6	30.3	58.2				
20	67.6	73.0	47.4	62.6	24.3	50.6				

Table 3c. Observed (obs.) and relative (rel.) survival of patients with kidney cancer by age category for period 1988-2012 (N=6,384).

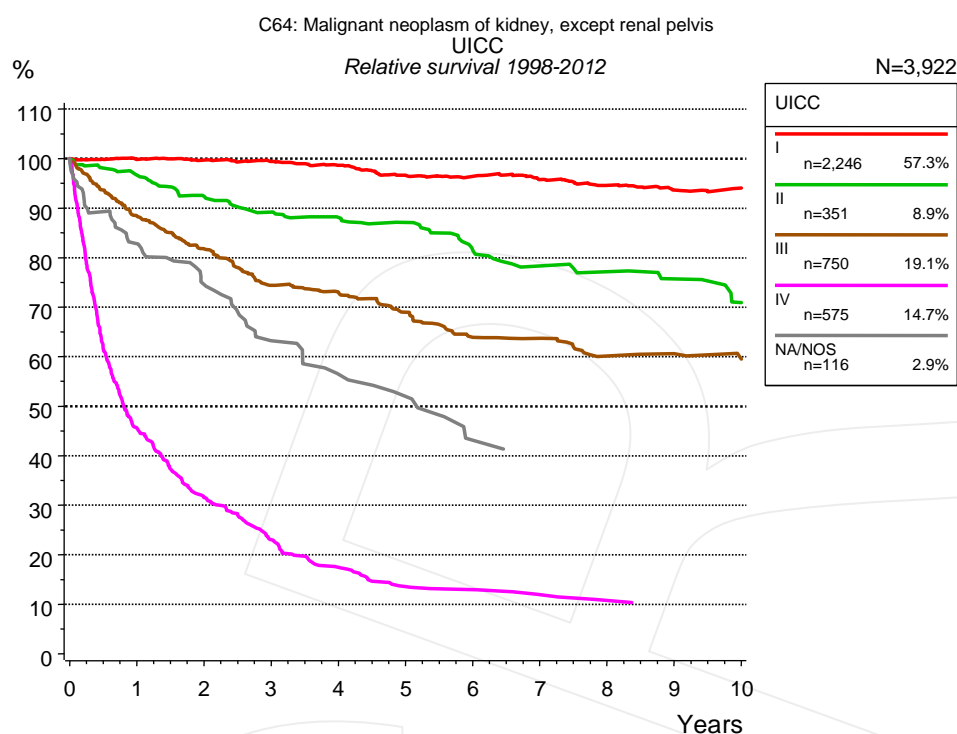


Figure 4a. Relative survival of patients with kidney cancer by UICC. For 3,935 of 4,038 cases diagnosed between 1998 and 2012 valid data could be obtained for this item. For a total of 3,922 cases an evaluable classification was established. The grey line represents the subgroup of 116 patients with missing values regarding UICC (2.9% of 4,038 patients, the percent values of all other categories are related to n=3,922).

		UICC									
		I n=2,246		II n=351		III n=750		IV n=575		NA/NOS n=116	
Years		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		97.8	99.8	94.4	96.6	86.0	88.5	44.4	45.5	80.0	82.8
2		95.8	99.7	88.1	92.3	77.3	81.7	30.0	31.6	69.4	74.6
3		93.3	99.3	83.1	89.2	68.4	74.4	21.5	23.0	56.4	63.2
4		90.6	98.6	80.0	88.1	65.3	72.9	16.0	17.5	48.9	56.5
5		86.7	96.6	77.2	87.1	60.0	68.9	12.2	13.6	44.4	51.9
6		84.5	96.4	70.7	81.5	53.9	63.9	11.6	12.9	35.3	43.1
7		81.8	95.8	66.0	78.3	52.5	63.7	10.3	11.9		
8		78.6	94.6	63.6	77.2	48.0	60.1	9.3	10.7		
9		75.8	93.6	60.5	75.7	46.8	60.6				
10		74.1	94.1	55.1	70.9	44.7	59.5				

Table 4b. Observed (obs.) and relative (rel.) survival of patients with kidney cancer by UICC for period 1998-2012 (N=3,922).

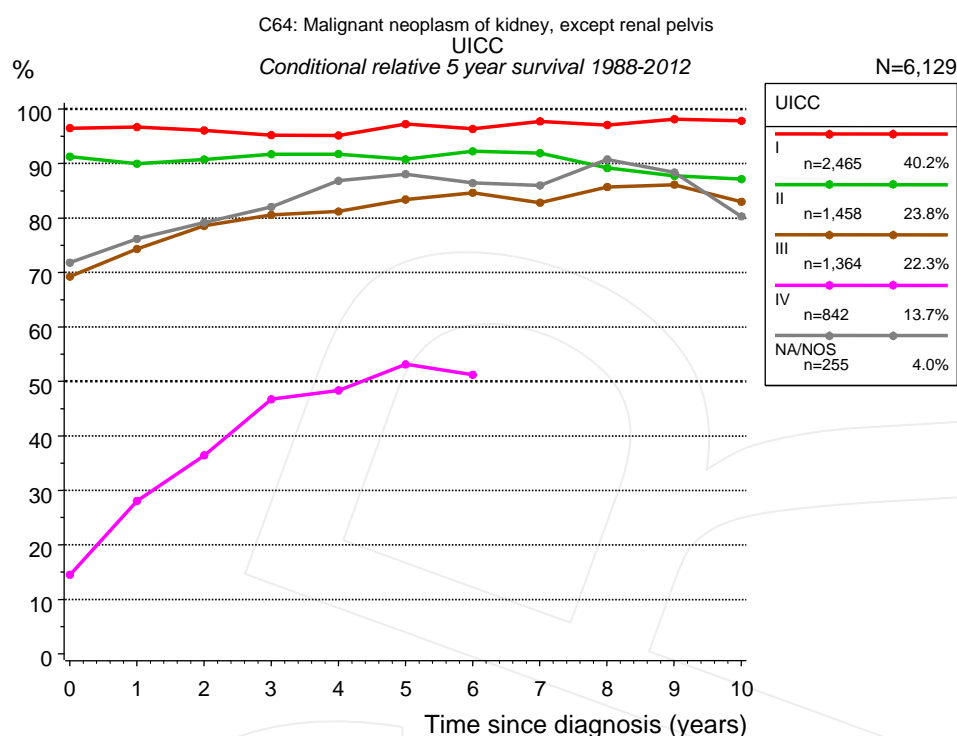


Figure 4c. Conditional relative 5-year survival of patients with kidney cancer by UICC. For 6,153 of 6,384 cases diagnosed between 1988 and 2012 valid data could be obtained for this item. For a total of 6,129 cases an evaluable classification was established. The grey line represents the subgroup of 255 patients with missing values regarding UICC (4.0% of 6,384 patients, the percent values of all other categories are related to n=6,129).

UICC										
Years	I		II		III		IV		NA/NOS	
	n	Cond. surv. % 5 yrs	n	Cond. surv. % 5 yrs	n	Cond. surv. % 5 yrs	n	Cond. surv. % 5 yrs	n	Cond. surv. % 5 yrs
0	2,465	96.5	1,458	91.3	1,364	69.2	842	14.5	255	71.8
1	2,252	96.7	1,378	90.0	1,122	74.3	360	28.1	214	76.2
2	1,973	96.1	1,272	90.8	928	78.5	215	36.4	186	79.2
3	1,722	95.2	1,183	91.7	788	80.6	140	46.7	162	82.0
4	1,435	95.1	1,113	91.7	694	81.2	102	48.4	145	86.8
5	1,199	97.2	1,032	90.8	588	83.4	76	53.1	131	88.1
6	1,008	96.3	954	92.2	506	84.6	62	51.2	116	86.4
7	855	97.7	889	91.9	449	82.8			105	86.0
8	698	97.1	846	89.2	395	85.7			96	90.7
9	560	98.1	790	87.8	342	86.1			93	88.4
10	410	97.8	730	87.1	302	83.0			87	80.3

Table 4d. Conditional relative 5-year survival of patients with kidney cancer by UICC for period 1988-2012 (N=6,129).

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 4a). 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 UICC="I", who are alive at least 3 years after cancer diagnosis, the conditional relative 5-year survival rate is 95.2% (n=1,722).

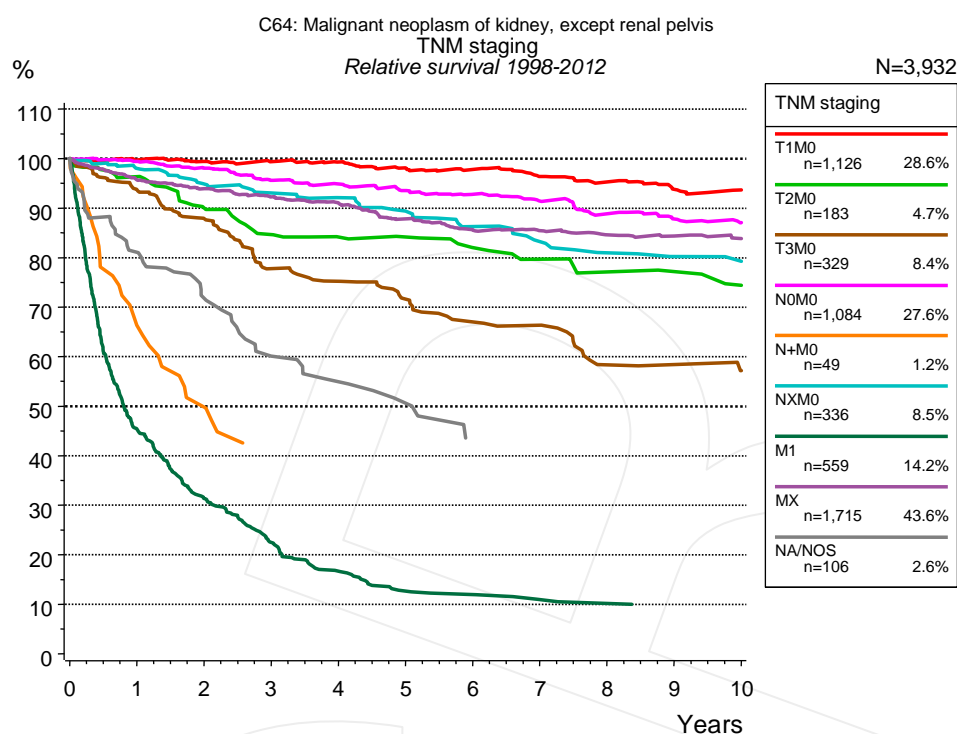


Figure 4e. Relative survival of patients with kidney cancer by TNM staging. For 3,935 of 4,038 cases diagnosed between 1998 and 2012 valid data could be obtained for this item. For a total of 3,932 cases an evaluable classification was established. The accumulated percentage exceeds the 100% value because patients are potentially considered in more than one subgroup. The grey line represents the subgroup of 106 patients with missing values regarding TNM staging (2.6% of 4,038 patients, the percent values of all other categories are related to n=3,932).

TNM staging														
Years	T1M0 n=1,126		T2M0 n=183		T3M0 n=329		N0M0 n=1,084		N+M0 n=49		NXM0 n=336		M1 n=559	
	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	97.8	99.7	94.4	96.3	91.2	93.7	97.4	99.4	64.7	66.2	96.0	98.0	44.2	45.3
2	95.5	99.4	85.9	90.0	83.2	87.8	94.0	98.1	49.7	49.8	91.0	94.9	29.8	31.3
3	93.5	99.3	79.2	84.7	71.7	77.7	89.6	95.6	40.1	41.9	87.4	93.1	21.0	22.5
4	91.4	99.3	76.3	84.1	68.0	75.2	87.0	94.9			84.7	92.1	15.3	16.7
5	88.2	98.1	74.7	84.2	63.1	71.6	83.9	93.5			80.2	89.4	11.5	12.7
6	86.0	97.8	70.7	82.0	57.4	67.0	81.1	92.8			75.9	86.3	10.8	12.0
7	82.6	96.4	67.3	79.7	55.9	66.3	78.0	91.4			71.8	83.2	9.6	11.0
8	79.7	95.3	63.5	77.1	47.4	58.3	73.9	88.9			68.1	80.9	9.1	10.2
9	76.4	93.8	61.9	77.2	46.4	58.4	71.1	87.8			65.8	80.2		
10	74.4	93.6	58.0	74.4	43.8	57.1	68.5	87.0			64.4	79.2		

cont'd Years	TNM staging			
	MX n=1,715		NA/NOS n=106	
	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0
1	93.6	95.7	78.1	81.1
2	89.7	93.9	66.5	71.8
3	86.0	92.3	53.3	60.1
4	82.8	91.0	47.9	54.9
5	77.9	87.8	42.9	50.6
6	74.0	85.6	35.1	43.1
7	71.9	85.4		
8	69.1	84.6		
9	66.9	84.4		
10	64.8	83.9		

Table 4f. Observed (obs.) and relative (rel.) survival of patients with kidney cancer by TNM staging for period 1998-2012 (N=5,381).

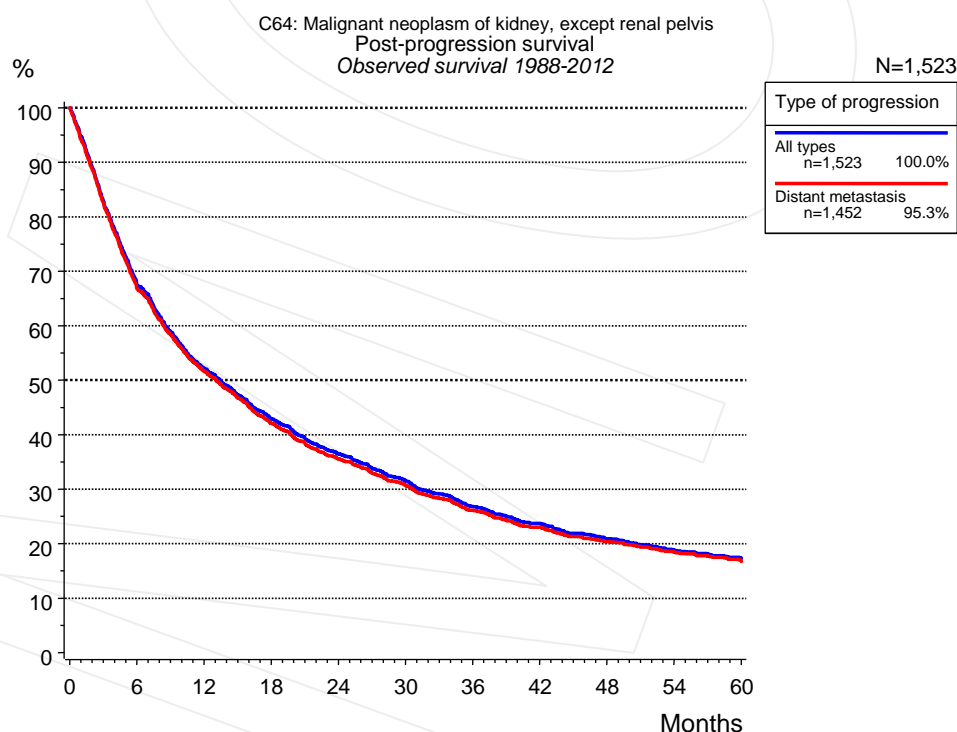


Figure 5a. Observed post-progression survival of 1,523 patients with kidney cancer diagnosed between 1988 and 2012 (incl. M1). These 1,523 patients with documented progression events during their course of disease represent 23.9% of the totally 6,384 evaluated cases. Patients with cancer relapse documented via death certificates only were excluded (n=241, 3.8%). 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	Distant metastasis
	n=1,523	n=1,452
	%	%
0	100.0	100.0
12	52.2	51.6
24	36.5	35.6
36	26.8	26.1
48	20.9	20.4
60	17.3	16.7

Table 5b. Observed post-progression survival of patients with kidney cancer for period 1988-2012 (N=1,523).

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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