Munich Cancer Registry

Munich Cancer Registry at Munich Cancer Center
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http://www.tumorregister-muenchen.de/en

Cancer statistics: Survival

C64: Kidney cancer

Year of diagnosis	1988-2013
Patients	12,072
Diseases	12,347
Cases evaluated	6,524
Creation date	05/13/2015
Export date	12/30/2014
Population	4.64 m

C64: Malignant neoplasm of kidney, except renal pelvis
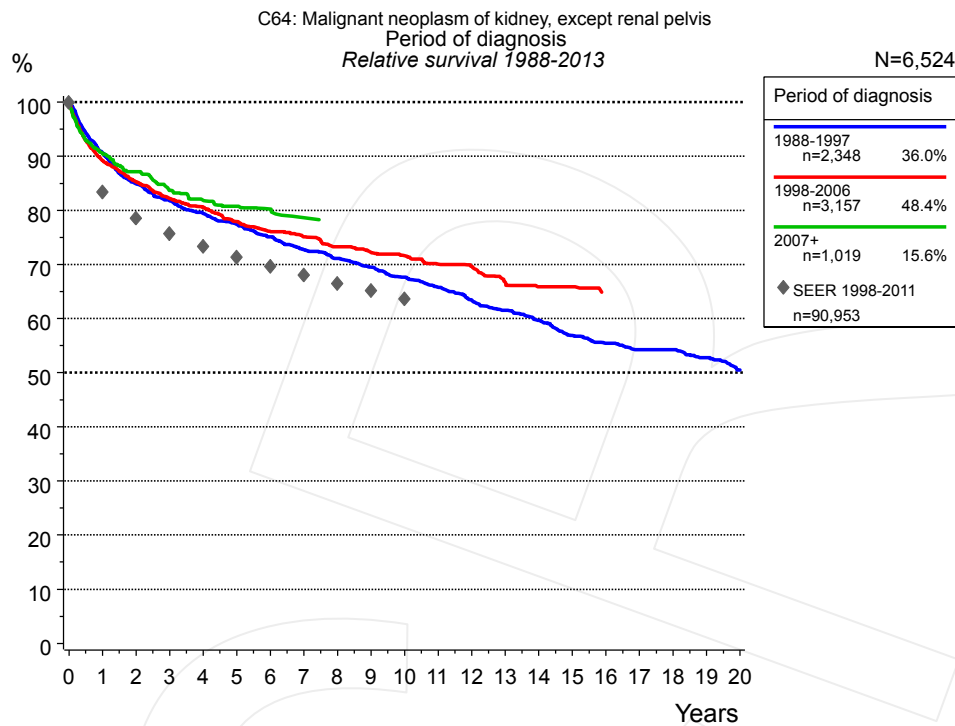Period of diagnosis
Relative survival 1988-2013

Figure 1a. Relative survival of patients with kidney cancer by period of diagnosis. Included in the evaluation are 6,524 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.

| | Period of diagnosis | | | | | |
| | 1988-1997 n=2,348 | | 1998-2006 n=3,157 | | 2007+ n=1,019 | |
Years	obs. %	rel. %	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0	100.0	100.0
1	88.4	90.6	87.1	89.2	88.3	90.4
2	80.8	84.8	81.4	85.3	83.5	87.1
3	76.0	81.8	76.6	82.2	78.0	83.7
4	72.0	79.4	73.3	80.6	74.7	81.9
5	68.4	77.4	69.2	77.9	71.7	80.7
6	64.8	75.1	65.9	76.1	69.7	80.2
7	61.1	72.7	63.4	75.1	67.1	78.6
8	58.2	71.1	60.3	73.3		
9	55.4	69.5	57.8	72.3		
10	52.6	67.6	55.6	71.6		
11	49.8	65.8	52.9	70.0		
12	46.7	63.4	51.0	69.6		
13	44.0	61.5	47.5	66.7		
14	41.5	59.6	45.4	65.9		
15	38.4	56.9	44.4	65.9		
16	36.4	55.5				
17	34.6	54.3				
18	33.5	54.3				
19	31.6	52.8				
20	29.1	50.5				

Table 1b. Observed (obs.) and relative (rel.) survival of patients with kidney cancer by period of diagnosis for period 1988-2013 (N=6,524).
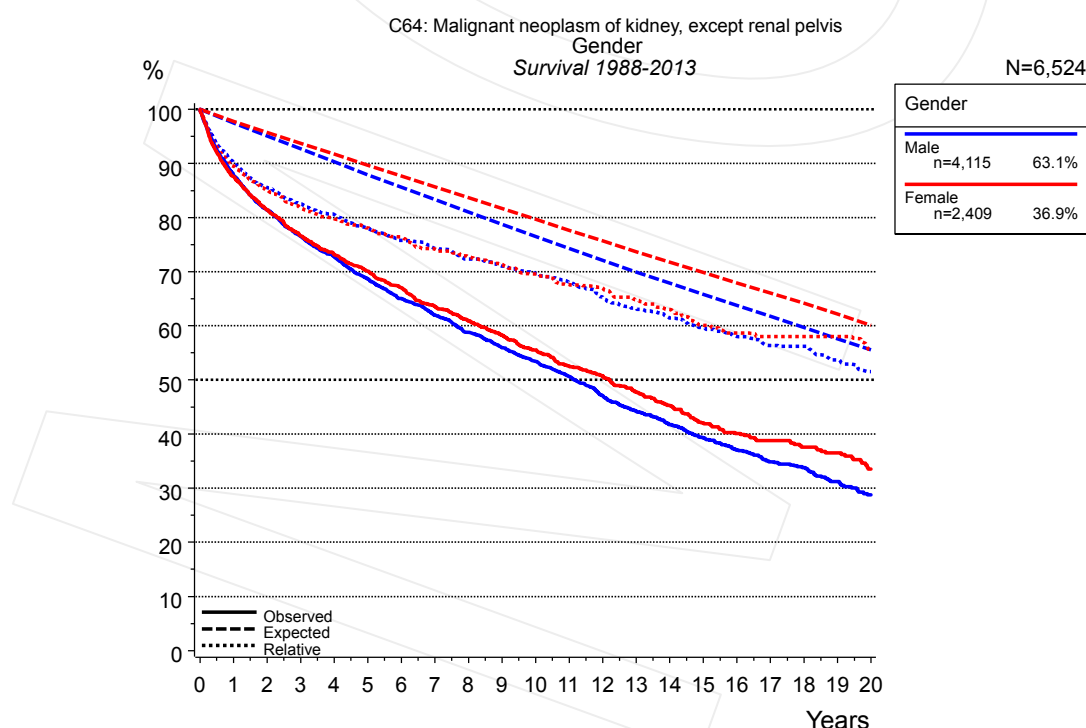

Figure 2a. Survival of patients with kidney cancer by gender. Included in the evaluation are 6,524 cases diagnosed between 1988 and 2013.

	Gender			
	Male n=4,115		Female n=2,409	
Years	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0
1	87.8	90.0	87.6	89.5
2	81.4	85.5	81.4	85.1
3	76.5	82.5	76.6	81.7
4	72.8	80.5	73.2	79.8
5	68.7	78.1	70.0	78.1
6	65.1	75.8	67.0	76.4
7	61.9	74.3	63.6	74.2
8	58.8	72.4	61.0	72.8
9	56.0	71.1	58.3	71.3
10	53.4	69.7	55.6	69.6
11	50.6	68.1	52.6	67.6
12	47.2	65.3	50.7	67.0
13	44.3	63.2	47.8	64.8
14	41.8	61.5	45.4	63.0
15	39.3	59.7	42.1	60.1
16	37.1	58.1	40.1	58.6
17	34.9	56.4	38.8	58.0
18	33.8	56.2	37.6	58.0
19	31.2	53.8	36.5	58.0
20	28.7	51.5	33.6	55.6

Table 2b. Observed (obs.) and relative (rel.) survival of patients with kidney cancer by gender for period 1988-2013 (N=6,524).
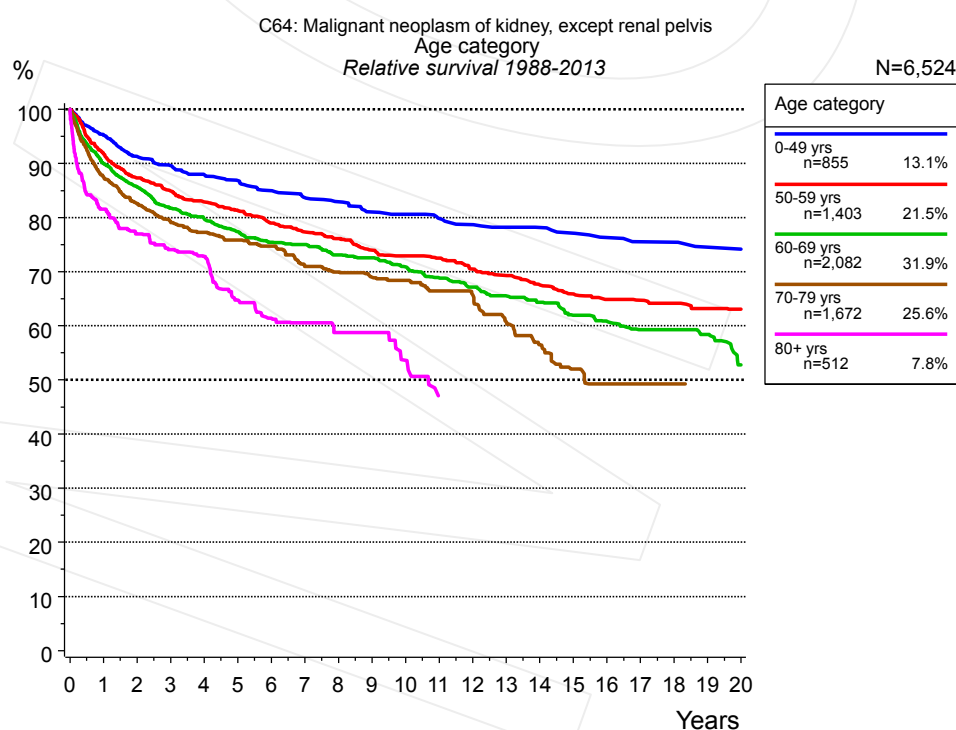

Figure 3a. Relative survival of patients with kidney cancer by age category. Included in the evaluation are 6,524 cases diagnosed between 1988 and 2013.

C64: Malignant neoplasm of kidney, except renal pelvis
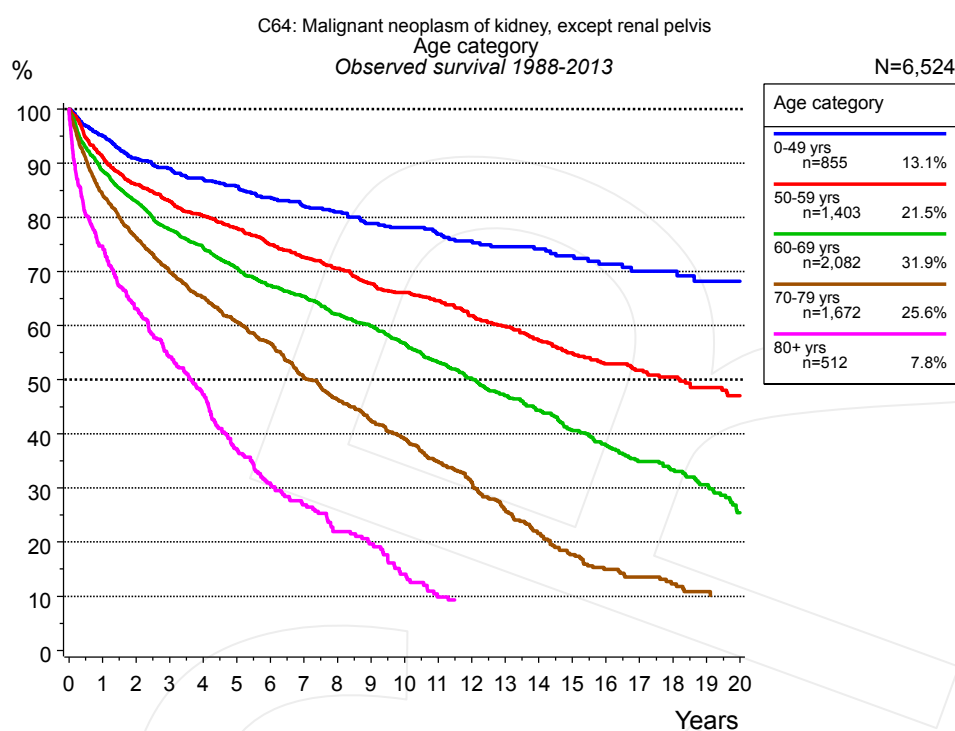Age category
Observed survival 1988-2013

Figure 3b. Observed survival of patients with kidney cancer by age category. Included in the evaluation are 6,524 cases diagnosed between 1988 and 2013.

	Age category									
	0-49 yrs n=855		50-59 yrs n=1,403		60-69 yrs n=2,082		70-79 yrs n=1,672		80+ yrs n=512	
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	95.0	95.2	91.1	91.7	88.5	89.9	84.2	87.4	74.5	81.6
2	90.8	91.3	86.0	87.3	82.8	85.6	76.3	82.6	63.1	77.0
3	89.0	89.6	83.0	84.9	77.7	81.7	69.9	79.1	54.2	74.1
4	87.1	87.9	80.3	82.9	74.5	79.8	65.2	77.3	47.3	72.8
5	85.7	86.8	77.9	81.3	70.7	77.4	60.7	75.9	37.3	64.8
6	83.7	85.0	74.9	79.0	67.4	75.4	56.7	74.7	30.9	61.4
7	82.1	83.7	72.6	77.3	65.4	75.0	50.3	71.0	26.9	60.6
8	81.0	82.9	70.6	76.1	62.1	73.1	46.4	69.9	22.0	58.8
9	78.8	81.1	67.7	74.0	59.9	72.6	42.4	69.0	19.7	58.8
10	78.1	80.6	66.1	73.0	56.7	70.9	39.1	68.4	14.1	53.6
11	76.9	79.8	64.6	72.5	53.3	68.9	35.0	66.5	9.9	47.1
12	75.6	78.7	61.8	70.5	50.3	67.2	31.0	65.7		
13	74.6	78.2	59.9	69.3	47.0	65.5	26.0	60.7		
14	74.2	78.2	57.4	67.5	44.3	64.4	21.6	56.5		
15	72.9	77.1	55.0	65.9	40.6	62.0	17.7	52.0		
16	71.4	76.3	52.9	64.9	37.9	60.9	15.0	49.3		
17	70.1	75.5	51.8	64.7	34.9	59.3	13.6	49.3		
18	70.1	75.5	50.5	64.2	33.3	59.3	12.3	49.3		
19	68.2	74.5	48.6	63.2	30.6	58.4				
20	68.2	74.1	47.0	63.1	25.4	52.8				

Table 3c. Observed (obs.) and relative (rel.) survival of patients with kidney cancer by age category for period 1988-2013 (N=6,524).

C64: Malignant neoplasm of kidney, except renal pelvis
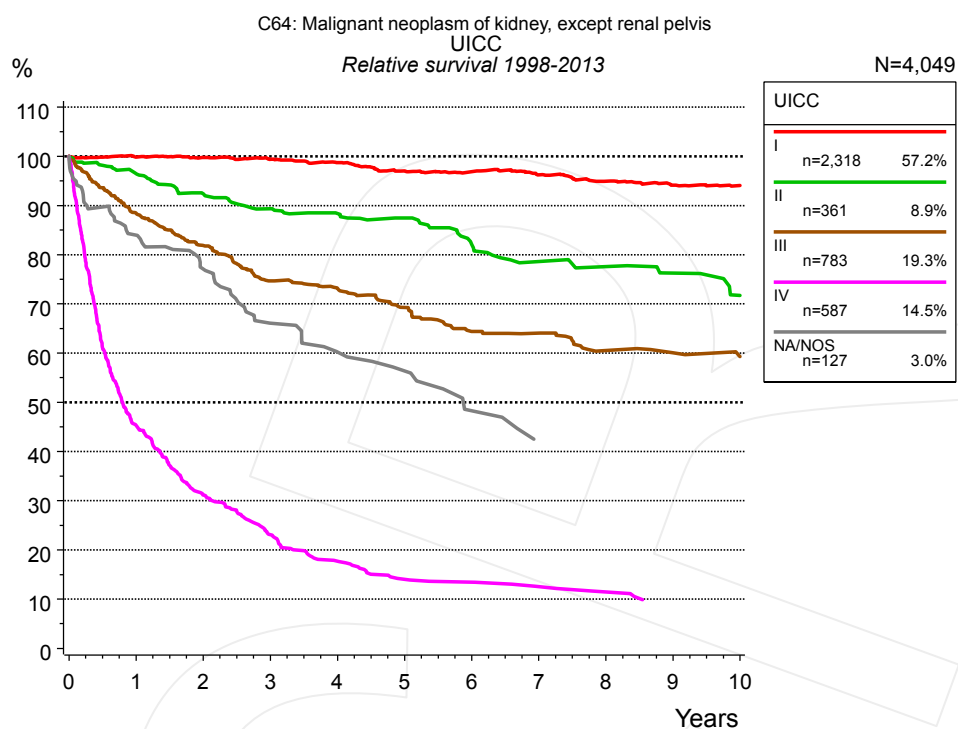UICC
Relative survival 1998-2013

Figure 4a. Relative survival of patients with kidney cancer by UICC. For 4,063 of 4,176 cases diagnosed between 1998 and 2013 valid data could be obtained for this item. For a total of 4,049 cases an evaluable classification was established. The grey line represents the subgroup of 127 patients with missing values regarding UICC (3.0% of 4,176 patients, the percent values of all other categories are related to n=4,049).

	UICC								
	I n=2,318		II n=361		III n=783		IV n=587		NA/NOS n=127	
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	94.3	96.5	86.0	88.4	44.2	45.3	80.9	84.0
2	95.8	99.7	88.1	92.3	77.4	81.9	29.7	31.2	71.3	77.1
3	93.3	99.3	83.3	89.3	68.6	74.7	21.5	23.1	58.6	66.1
4	90.7	98.7	80.3	88.4	65.4	73.2	16.2	17.7	51.9	60.2
5	87.0	97.0	77.6	87.4	60.3	69.3	12.6	14.0	47.9	56.4
6	84.8	96.9	71.4	82.2	54.3	64.4	12.0	13.4	39.4	48.3
7	82.2	96.2	66.3	78.6	52.7	64.1	10.8	12.5	33.6	42.2
8	79.0	94.9	64.0	77.6	48.1	60.5	9.8	11.4		
9	76.2	94.1	61.1	76.3	46.2	60.0				
10	74.1	94.1	55.9	71.7	44.4	59.3				

Table 4b. Observed (obs.) and relative (rel.) survival of patients with kidney cancer by UICC for period 1998-2013 (N=4,049).

C64: Malignant neoplasm of kidney, except renal pelvis
UICC
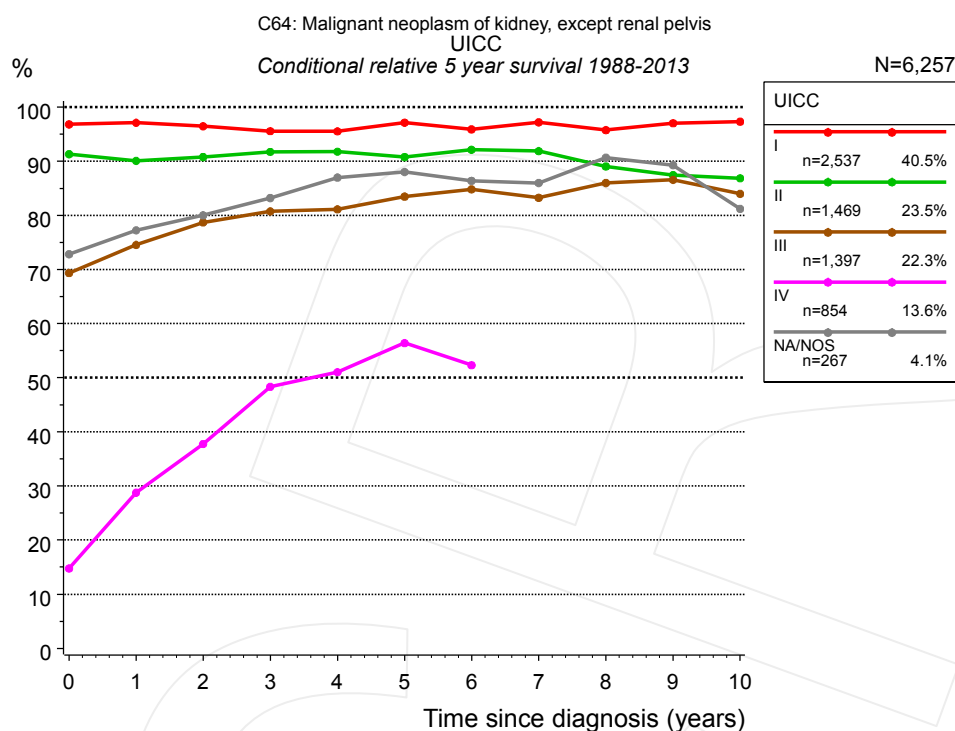*Conditional relative 5 year survival 1988-2013*

Figure 4c. Conditional relative 5-year survival of patients with kidney cancer by UICC. For 6,282 of 6,524 cases diagnosed between 1988 and 2013 valid data could be obtained for this item. For a total of 6,257 cases an evaluable classification was established. The grey line represents the subgroup of 267 patients with missing values regarding UICC (4.1% of 6,524 patients, the percent values of all other categories are related to n=6,257).

	UICC									
	I		II		III		IV		NA/NOS	
		Cond. surv. %		Cond. surv. %		Cond. surv. %		Cond. surv. %		Cond. surv. %
Years	n	5 yrs	n	5 yrs	n	5 yrs	n	5 yrs	n	5 yrs
0	2,537	96.8	1,469	91.3	1,397	69.4	854	14.8	267	72.8
1	2,326	97.1	1,388	90.1	1,145	74.6	364	28.8	224	77.2
2	2,049	96.5	1,280	90.8	946	78.7	220	37.8	200	80.0
3	1,786	95.6	1,191	91.7	802	80.7	143	48.3	173	83.2
4	1,529	95.5	1,117	91.8	709	81.1	105	51.0	153	87.0
5	1,268	97.1	1,039	90.8	602	83.5	78	56.4	137	88.0
6	1,072	95.9	962	92.1	521	84.8	64	52.3	120	86.4
7	921	97.2	892	91.9	460	83.3			111	86.0
8	765	95.8	851	89.0	408	86.0			99	90.7
9	610	97.0	795	87.4	357	86.5			96	89.3
10	478	97.3	733	86.9	311	84.0			89	81.2

Table 4d. Conditional relative 5-year survival of patients with kidney cancer by UICC for period 1988-2013 (N=6,257).

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 95.6% (n=1,786).
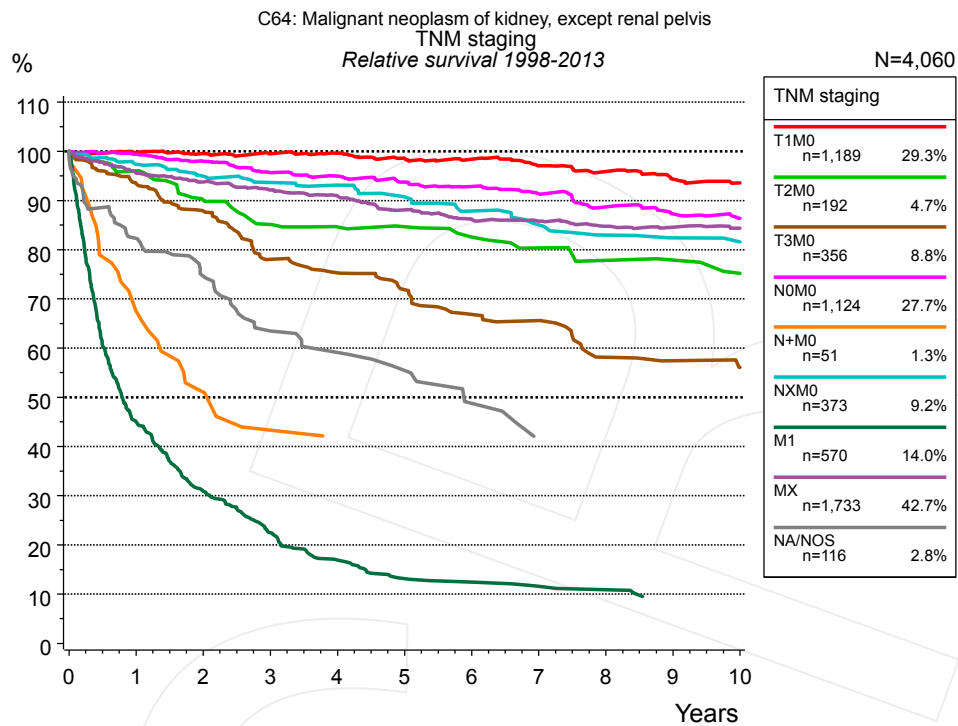
C64: Malignant neoplasm of kidney, except renal pelvis
TNM staging
Relative survival 1998-2013

Figure 4e. Relative survival of patients with kidney cancer by TNM staging. For 4,063 of 4,176 cases diagnosed between 1998 and 2013 valid data could be obtained for this item. For a total of 4,060 cases an evaluable classification was established. The accumulated percentage exceeds the 100% value because patients are potientially considered in more than one subgroup. The grey line represents the subgroup of 116 patients with missing values regarding TNM staging (2.8% of 4,176 patients, the percent values of all other categories are related to n=4,060).

	TNM staging												
	T1M0		T2M0		T3M0		N0M0		N+M0		NXM0		M1	
	n=1,189		n=192		n=356		n=1,124		n=51		n=373		n=570	
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	97.8	99.8	94.2	96.0	91.0	93.5	97.4	99.4	65.9	67.5	95.4	97.4	44.0	45.1
2	95.6	99.5	86.0	90.1	83.3	87.9	93.9	98.0	50.9	51.1	91.0	94.9	29.4	30.9
3	93.6	99.5	79.6	85.1	72.0	78.1	89.7	95.7	41.5	43.4	87.9	93.7	21.0	22.5
4	91.7	99.6	76.9	84.6	68.1	75.3	87.0	94.9	38.9	41.7	85.5	93.1	15.5	16.9
5	88.7	98.6	75.3	84.7	63.3	71.9	84.0	93.7	38.9	39.3	81.4	90.7	11.9	13.2
6	86.5	98.4	71.3	82.6	57.2	66.8	81.1	92.8			77.2	87.9	11.2	12.5
7	83.2	97.1	68.0	80.3	55.2	65.6	77.9	91.4			73.2	85.0	10.0	11.6
8	80.2	95.9	64.3	77.8	47.2	58.1	73.8	88.7			69.6	83.0	9.5	10.9
9	76.9	94.4	62.6	77.9	45.4	57.4	70.6	87.3			67.4	82.4		
10	74.3	93.6	58.8	75.2	43.0	56.1	67.9	86.4			66.1	81.6		

	TNM staging			
cont'd	MX n=1,733		NA/NOS n=116	
Years	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0
1	93.4	95.6	79.1	82.3
2	89.6	93.8	68.8	74.6
3	85.9	92.2	55.9	63.5
4	82.7	90.9	51.1	59.1
5	78.1	88.1	46.8	55.5
6	74.5	86.2	39.5	48.8
7	72.2	85.8	33.0	41.8
8	69.3	84.7		
9	67.1	84.5		
10	65.2	84.4		

Table 4f. Observed (obs.) and relative (rel.) survival of patients with kidney cancer by TNM staging for period 1998-2013 (N=5,588).
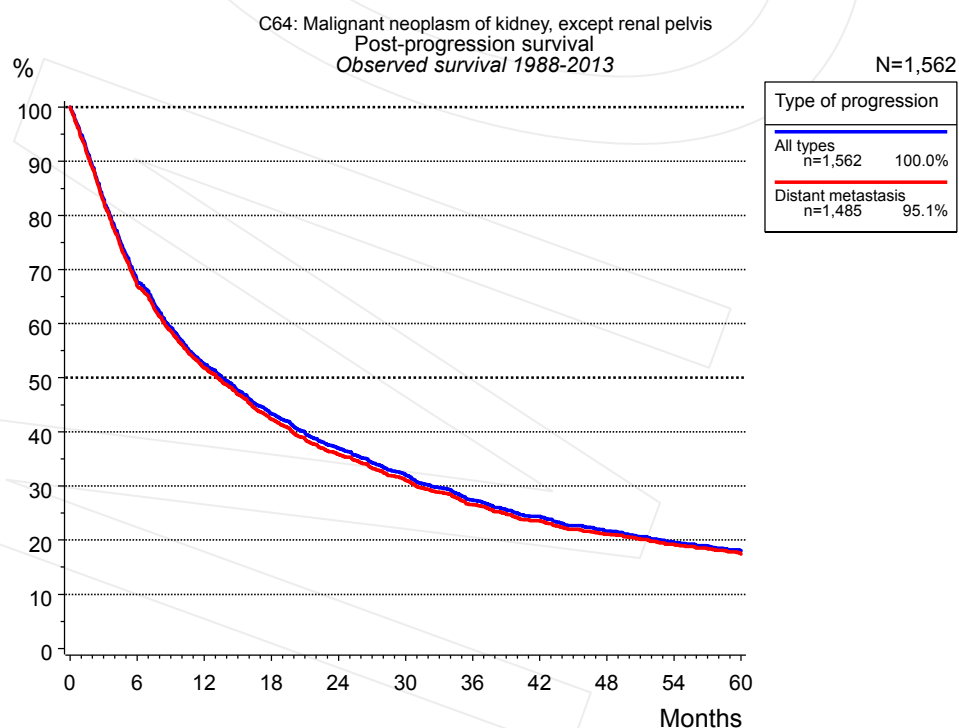
Figure 5a. Observed post-progression survival of 1,562 patients with kidney cancer diagnosed between 1988 and 2013 (incl. M1). These 1,562 patients with documented progression events during their course of disease represent 23.9% of the totally 6,524 evaluated cases. Patients with cancer relapse documented via death certificates only were excluded (n=248, 3.8%). Multiple progression types on different sites are included in the evaluation even when not occuring 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 potientially considered in more than one subgroup.

	Type of progression	
	All types n=1,562	Distant metastasis n=1,485
Months	%	%
0	100.0	100.0
12	52.5	51.8
24	37.0	35.9
36	27.4	26.6
48	21.7	21.1
60	18.0	17.4

Table 5b. Observed post-progression survival of patients with kidney cancer for period 1988-2013 (N=1,562).

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)
	Date of entry:　　　　Date of first locoregional recurrence, distant metastasis, unspecified progression
	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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