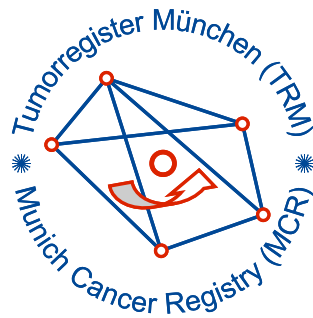


# Munich Cancer Registry



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Munich Cancer Registry at Munich Cancer Center  
Marchioninstr. 15  
Munich, 81377  
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<http://www.tumorregister-muenchen.de/en>

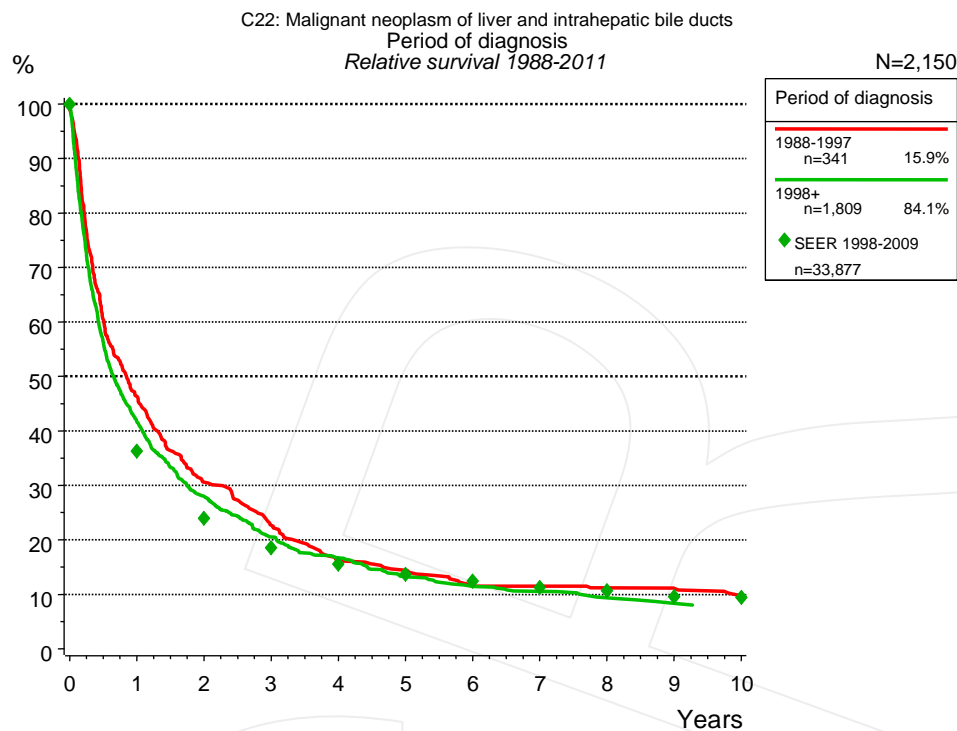
## Cancer statistics: Survival

### C22: Liver cancer

Year of diagnosis	1978-1997	1998-2011
Patients	442	4,736
Diseases	442	4,743
Creation date	04/01/2013	
Export date	01/03/2013	
Population	4.5 m	



[http://www.tumorregister-muenchen.de/en/facts/surv/surv\\_C22\\_\\_E.pdf](http://www.tumorregister-muenchen.de/en/facts/surv/surv_C22__E.pdf)



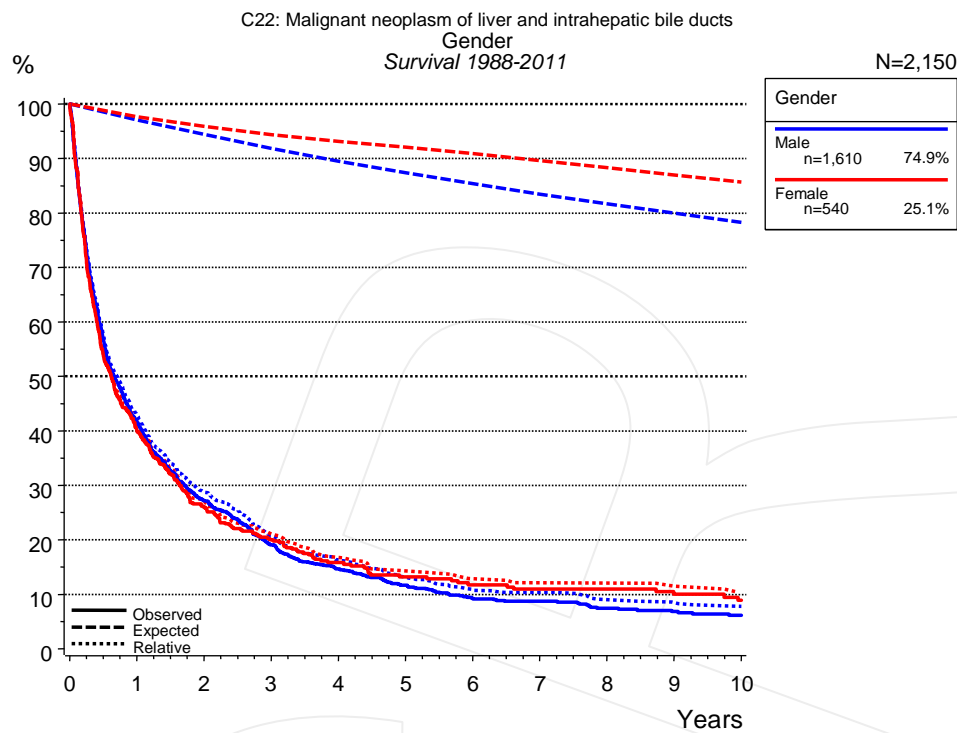
**Figure 1a.** Relative survival of patients with liver cancer by period of diagnosis. Included in the evaluation are 2,150 cases diagnosed between 1988 and 2011.

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 1998, 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=341		1998+ n=1,809	
	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0
1	45.3	46.3	40.5	41.6
2	29.1	30.6	26.5	28.0
3	21.2	22.7	19.0	20.5
4	15.0	16.3	15.2	16.7
5	13.2	14.4	11.8	13.3
6	10.1	11.5	10.0	11.4
7	10.1	11.5	9.1	10.5
8	9.5	11.2	7.9	9.4
9	9.2	11.1	6.9	8.3
10	8.0	9.9	6.5	7.8

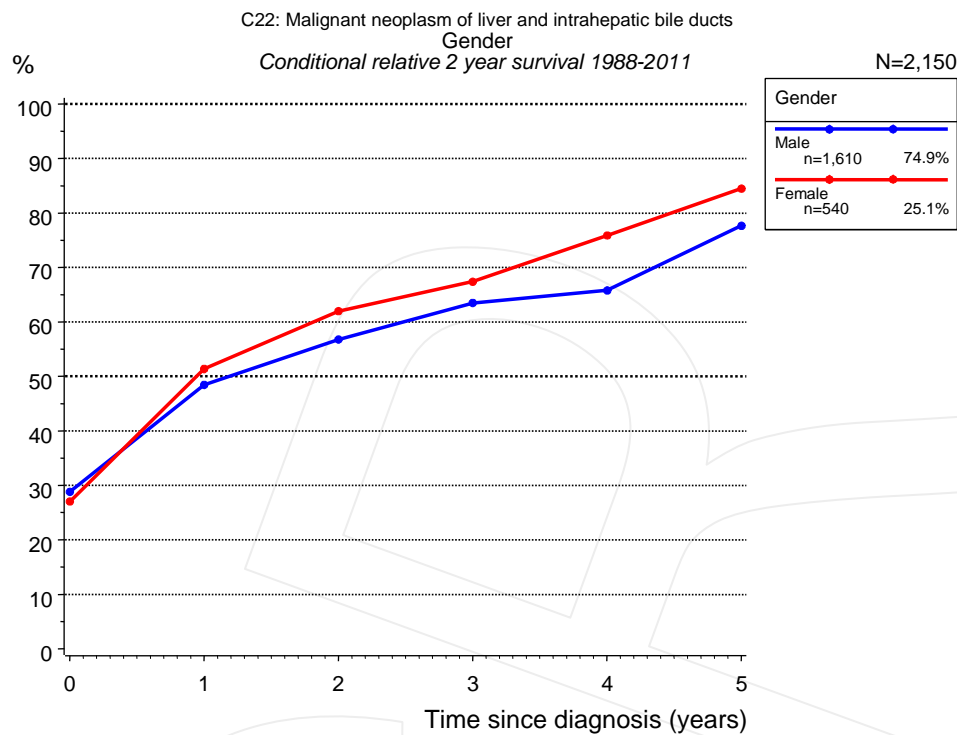
**Table 1b.** Observed (obs.) and relative (rel.) survival of patients with liver cancer by period of diagnosis for period 1988-2011 (N=2,150).



**Figure 2a.** Survival of patients with liver cancer by gender. Included in the evaluation are 2,150 cases diagnosed between 1988 and 2011.

Years	Gender			
	Male n=1,610		Female n=540	
	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0
1	41.6	42.9	40.1	41.0
2	27.3	28.8	26.0	27.0
3	19.1	20.8	20.0	21.1
4	14.7	16.3	15.8	16.8
5	11.7	13.1	13.2	14.3
6	9.3	10.8	11.8	12.9
7	8.7	10.3	10.9	12.1
8	7.5	9.0	10.9	12.1
9	6.8	8.4	10.0	11.5
10	6.2	7.8	8.9	10.4

**Table 2b.** Observed (obs.) and relative (rel.) survival of patients with liver cancer by gender for period 1988-2011 (N=2,150).

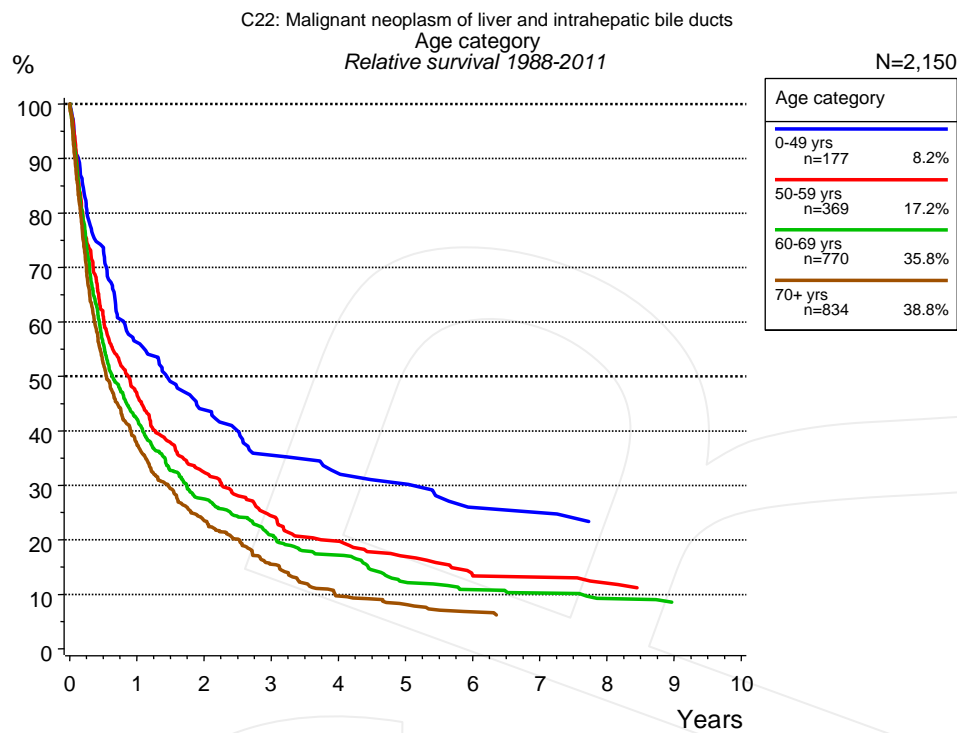


**Figure 2c.** Conditional relative 2-year survival of patients with liver cancer by gender. For 2,150 of 2,150 cases diagnosed between 1988 and 2011 valid data could be obtained for this item.

Years	Gender			
	Male		Female	
	n	Cond. surv. % 2 yrs	n	Cond. surv. % 2 yrs
0	1,610	28.8	540	27.0
1	620	48.5	203	51.4
2	370	56.8	121	62.0
3	232	63.5	85	67.4
4	156	65.8	50	75.9
5	105	77.7	39	84.5

**Table 2d.** Conditional relative 2-year survival of patients with liver cancer by gender for period 1988-2011 (N=2,150).

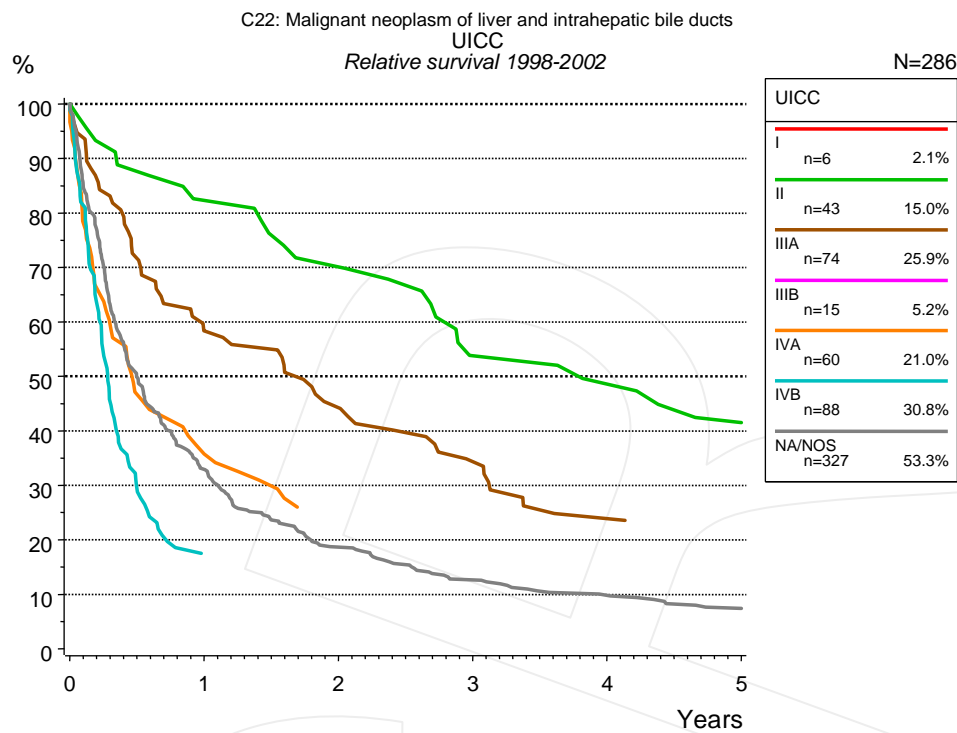
Conditional relative survival rates refer to the relative survival probability, in this case for 2 years after cancer diagnosis, compared to the age- and sex-matched population (=100%) under the condition of being alive for a certain time period (x-axis in Figure 2a). The results illustrate to what extent 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 gender="Male", who are alive at least 3 years after cancer diagnosis, the conditional relative 2-year survival rate is 63.5% (n=232).



**Figure 3a.** Relative survival of patients with liver cancer by age category. Included in the evaluation are 2,150 cases diagnosed between 1988 and 2011.

Years	Age category							
	0-49 yrs n=177		50-59 yrs n=369		60-69 yrs n=770		70+ yrs n=834	
	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	56.4	56.2	46.5	46.8	41.5	42.1	35.5	37.5
2	43.9	43.9	32.2	32.4	26.7	27.5	21.2	23.6
3	35.7	35.5	23.9	24.4	19.9	20.9	13.2	15.5
4	32.5	32.2	19.5	19.7	16.1	17.2	7.8	9.7
5	30.7	30.2	16.4	16.9	11.3	12.2	6.3	8.1
6	25.6	25.9	13.2	13.5	9.7	10.9	5.0	6.8
7	25.6	24.9	12.7	13.1	9.1	10.3		
8	22.9	23.2	11.6	12.1	7.8	9.2		
9	22.9	22.7	10.4	10.9	7.0	8.6		
10	22.9	22.2						

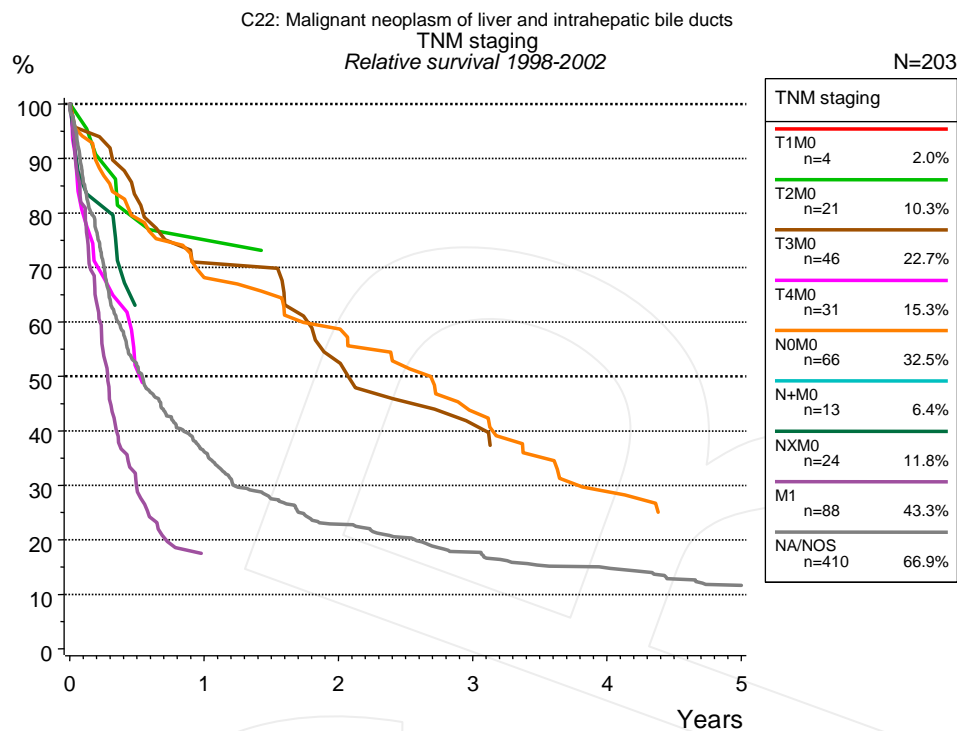
**Table 3b.** Observed (obs.) and relative (rel.) survival of patients with liver cancer by age category for period 1988-2011 (N=2,150).



**Figure 4a.** Relative survival of patients with liver cancer by UICC. For 297 of 613 cases diagnosed between 1998 and 2002 valid data could be obtained for this item. For a total of 286 cases an evaluable classification was established. The grey line represents the subgroup of 327 patients with missing values regarding UICC (53.3% of 613 patients, the percent values of all other categories are related to n=286). Subgroups with sample size <15 are dropped from the chart.

UICC														
	I		II		IIIA		IIIB		IVA		IVB		NA/NOS	
	n=6		n=43		n=74		n=15		n=60		n=88		n=327	
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	100.0	88.1	81.4	82.3	56.8	58.3			35.0	35.8			32.1	32.9
2			69.8	70.1	43.2	44.2							17.6	18.7
3			51.2	53.8	32.4	34.3							11.7	12.6
4			46.4	48.6	22.8	23.9							8.9	9.8
5			39.1	41.5									6.6	7.4

**Table 4b.** Observed (obs.) and relative (rel.) survival of patients with liver cancer by UICC for period 1998-2002 (N=286).



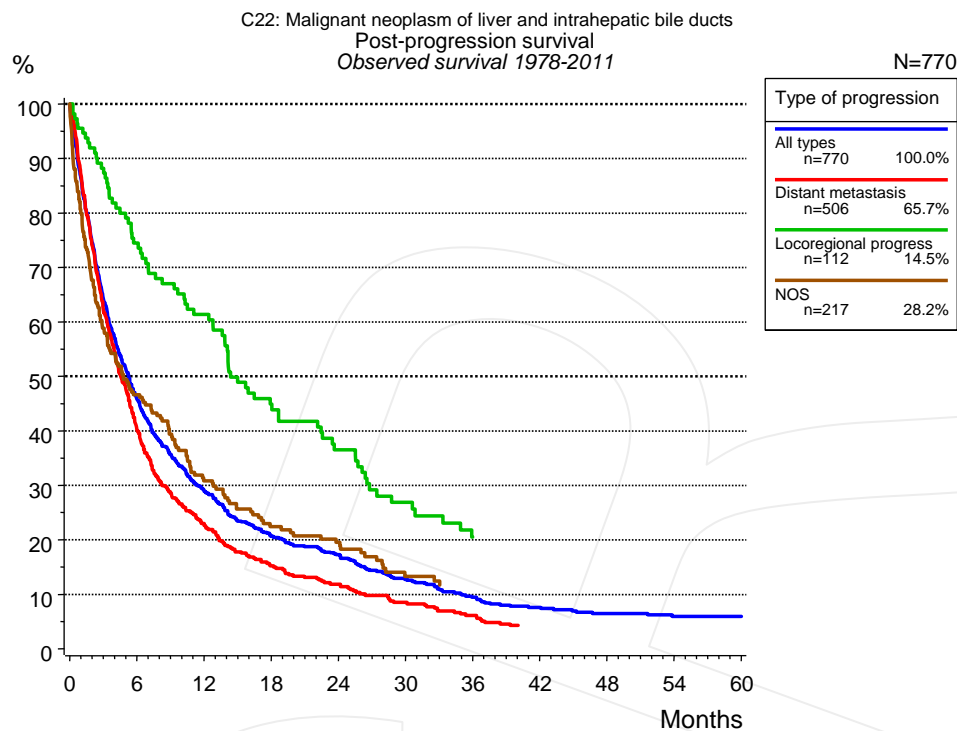
**Figure 4c.** Relative survival of patients with liver cancer by TNM staging. For 297 of 613 cases diagnosed between 1998 and 2002 valid data could be obtained for this item. For a total of 203 cases an evaluable classification was established. The accumulated percentage exceeds the 100% value because patients are potentially considered in more than one subgroup. The grey line represents the subgroup of 410 patients with missing values regarding TNM staging (66.9% of 613 patients, the percent values of all other categories are related to n=203). Subgroups with sample size <15 are dropped from the chart.

TNM staging															
Years	T1M0 n=4		T2M0 n=21		T3M0 n=46		T4M0 n=31		N0M0 n=66		N+M0 n=13		NXM0 n=24		
	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	100.0	81.8	76.2	75.0	69.6	70.8			66.7	68.1					
2			71.4	69.3	52.2	52.6			57.6	58.7					
3					39.1	41.2			40.9	43.6					
4									27.3	28.9					
5									22.7	23.7					

TNM staging					
cont'd		M1 n=88		NA/NOS n=410	
Years		obs. %	rel. %	obs. %	rel. %
0		100.0	100.0	100.0	100.0
1				35.2	36.2
2				21.6	22.9
3				16.5	17.7
4				13.5	14.8
5				10.4	11.6

**Table 4d.** Observed (obs.) and relative (rel.) survival of patients with liver cancer by TNM staging for period 1998-2002 (N=293).



**Figure 5a.** Observed post-progression survival of 770 patients with liver cancer diagnosed between 1978 and 2011 (incl. M1). These 770 patients with documented progression events during their course of disease represent 35.1% of the totally 2,195 evaluated cases. Patients with cancer relapse documented via death certificates only were excluded (n=844, 38.5%). 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			
	All types n=770 %	Distant metastasis n=506 %	Locoregional progress n=112 %	NOS n=217 %
0	100.0	100.0	100.0	100.0
12	28.9	22.6	61.4	30.8
24	17.3	11.9	36.5	19.5
36	9.4	6.1	20.5	
48	6.4			
60	5.9			

**Table 5b.** Observed post-progression survival of patients with liver cancer for period 1978-2011 (N=770).



## 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

## Recommended Citation

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