

# Munich Cancer Registry



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

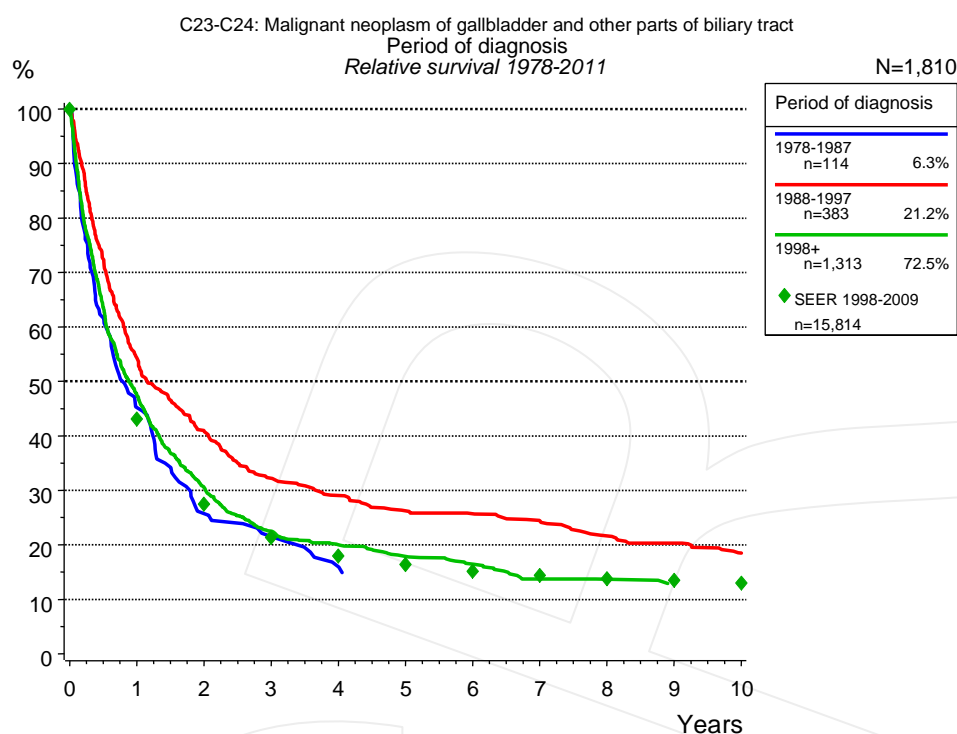
## Cancer statistics: Survival

### C23-C24: Gallbladder cancer

Year of diagnosis	1978-1987	1988-1997	1998-2011
Patients	128	460	2,778
Diseases	128	460	2,781
Creation date	04/01/2013		
Export date	01/03/2013		
Population	4.5 m		



[http://www.tumorregister-muenchen.de/en/facts/surv/surv\\_C2324E.pdf](http://www.tumorregister-muenchen.de/en/facts/surv/surv_C2324E.pdf)



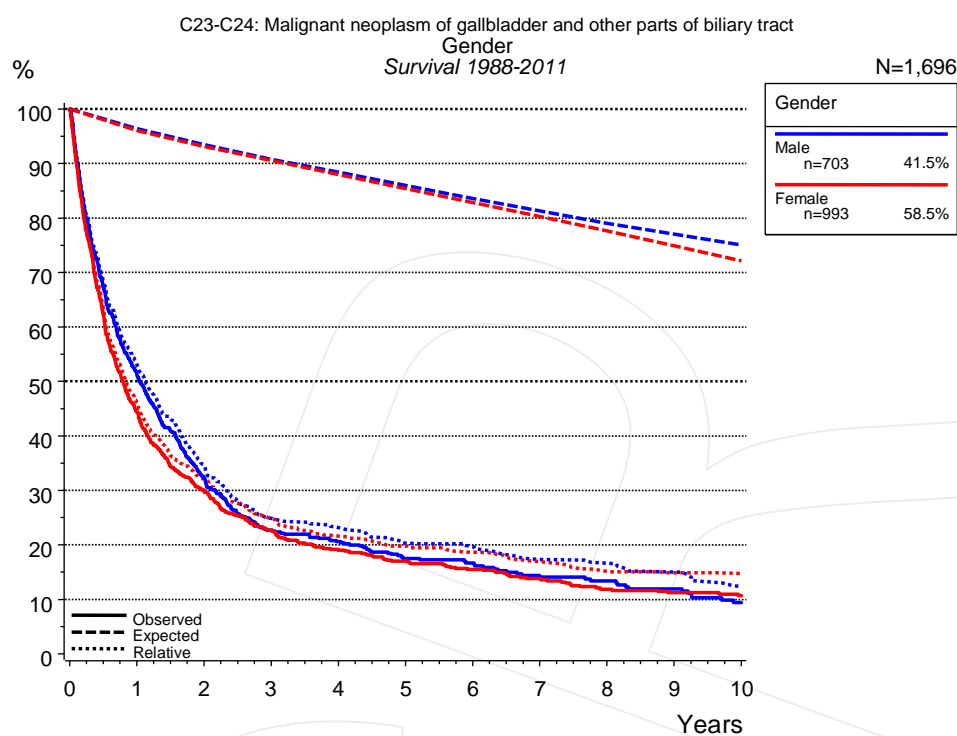
**Figure 1a.** Relative survival of patients with gallbladder cancer by period of diagnosis. Included in the evaluation are 1,810 cases diagnosed between 1978 and 2011.

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					
	1978-1987 n=114		1988-1997 n=383		1998+ n=1,313	
	obs. %	rel. %	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0	100.0	100.0
1	43.9	45.2	52.5	54.3	45.6	47.4
2	24.6	25.7	38.4	40.9	28.3	30.4
3	20.2	21.5	29.5	32.2	20.5	22.5
4	14.9	16.0	25.8	29.0	17.6	20.0
5			22.6	26.2	15.4	17.9
6			21.6	25.7	13.9	16.4
7			19.7	24.4	11.2	13.7
8			17.0	21.6	10.8	13.7
9			15.7	20.3		
10			13.6	18.5		

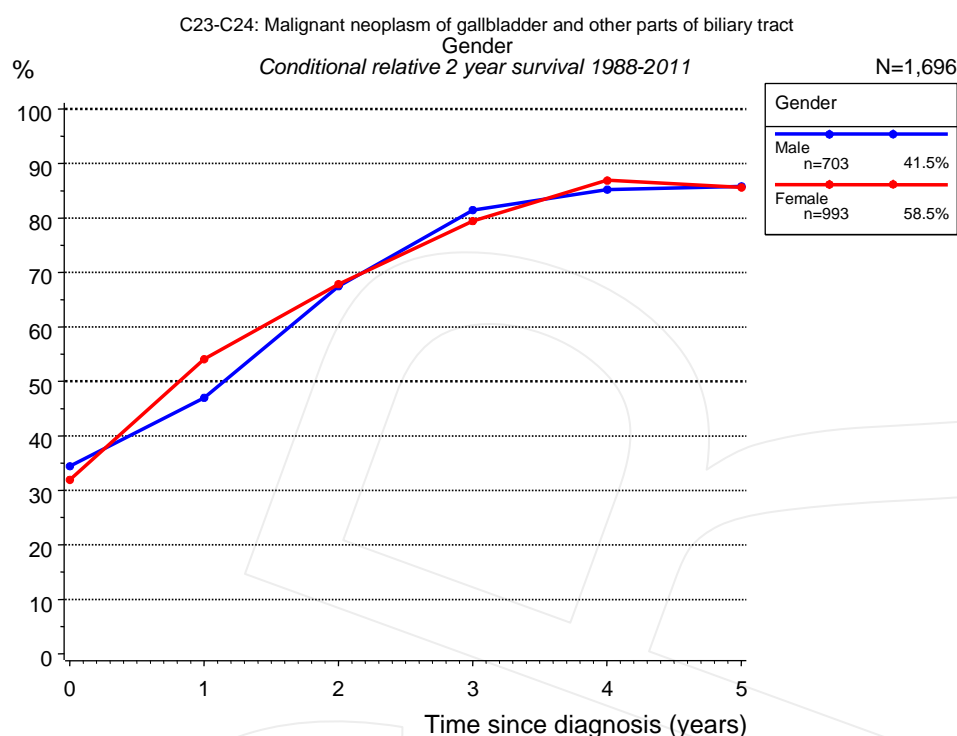
**Table 1b.** Observed (obs.) and relative (rel.) survival of patients with gallbladder cancer by period of diagnosis for period 1978-2011 (N=1,810).



**Figure 2a.** Survival of patients with gallbladder cancer by gender. Included in the evaluation are 1,696 cases diagnosed between 1988 and 2011.

Years	Gender			
	Male n=703		Female n=993	
	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0
1	51.2	53.1	44.4	46.1
2	32.2	34.5	29.7	31.9
3	22.7	24.9	22.7	24.9
4	20.6	23.2	19.0	21.6
5	17.5	20.3	17.0	19.8
6	16.7	19.7	15.5	18.7
7	14.1	17.3	13.8	16.9
8	13.4	16.6	11.9	15.1
9	11.9	15.0	11.2	14.9
10	9.4	12.3	10.7	14.7

**Table 2b.** Observed (obs.) and relative (rel.) survival of patients with gallbladder cancer by gender for period 1988-2011 (N=1,696).

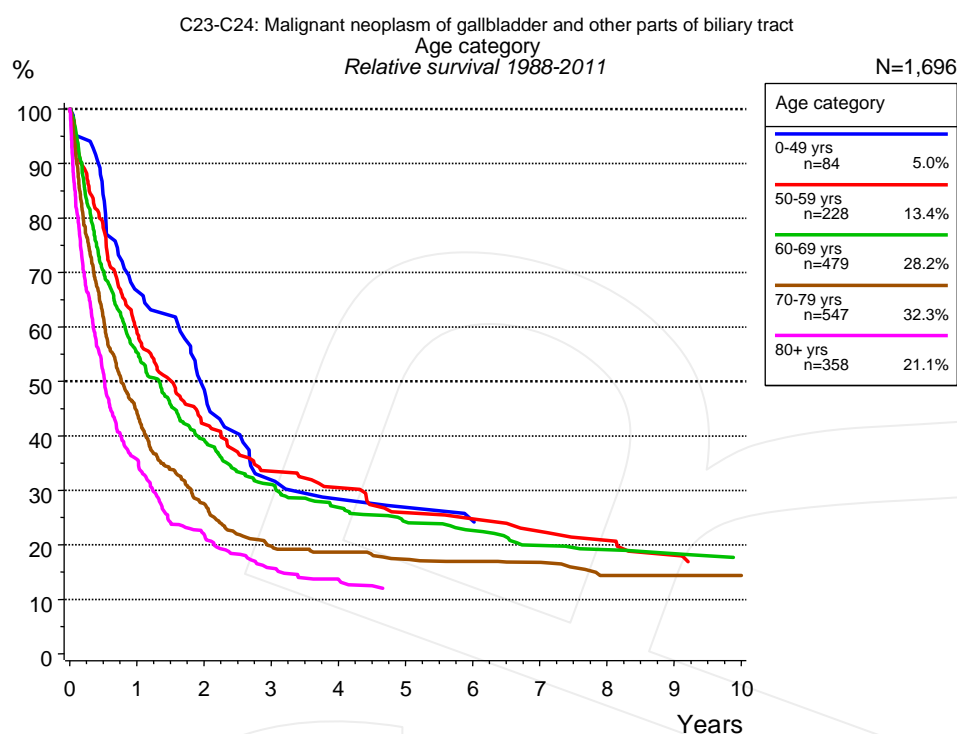


**Figure 2c.** Conditional relative 2-year survival of patients with gallbladder cancer by gender. For 1,696 of 1,696 cases diagnosed between 1988 and 2011 valid data could be obtained for this item.

Years	Gender			
	Male		Female	
	n	Cond. surv. % 2 yrs	n	Cond. surv. % 2 yrs
0	703	34.5	993	31.9
1	334	47.0	410	54.1
2	190	67.5	258	67.8
3	119	81.5	176	79.4
4	102	85.2	130	86.9
5	69	85.8	106	85.6

**Table 2d.** Conditional relative 2-year survival of patients with gallbladder cancer by gender for period 1988-2011 (N=1,696).

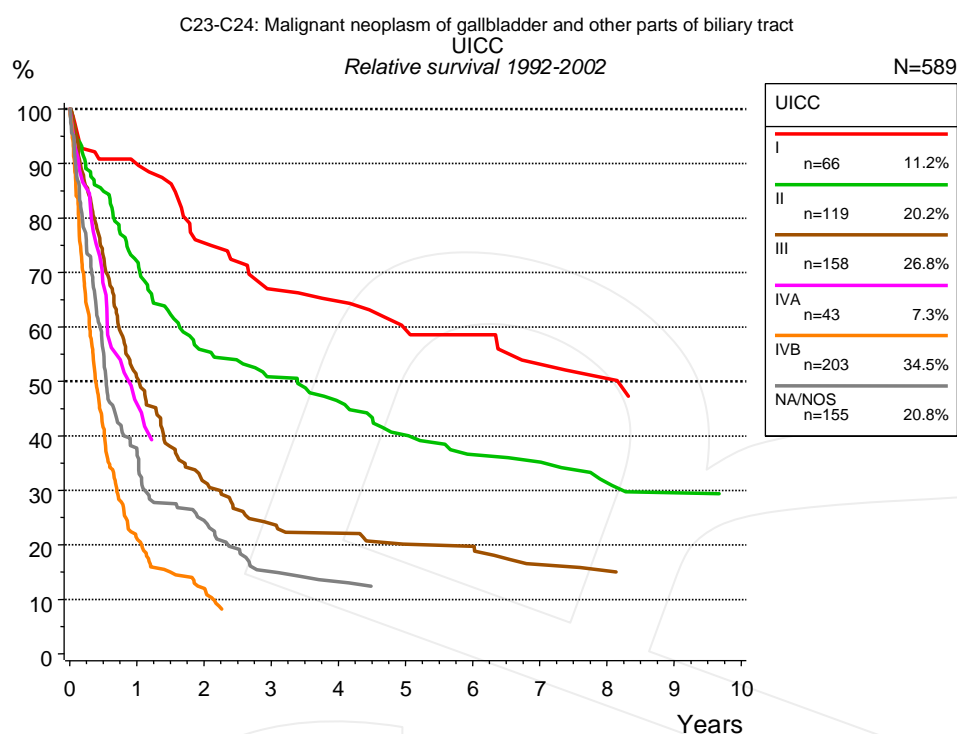
Conditional relative survival rates refer to the relative survival probability, in this case for 2 years after cancer diagnosis, compared to the age- and sex-matched population (=100%) under the condition of being alive for a certain time period (x-axis in Figure 2a). The results illustrate to what extent 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 81.5% (n=119).



**Figure 3a.** Relative survival of patients with gallbladder cancer by age category. Included in the evaluation are 1,696 cases diagnosed between 1988 and 2011.

Years	Age category									
	0-49 yrs n=84		50-59 yrs n=228		60-69 yrs n=479		70-79 yrs n=547		80+ yrs n=358	
	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	66.8	66.6	58.5	58.8	54.7	55.3	42.9	44.4	32.0	35.7
2	48.2	48.4	41.8	42.2	38.2	39.3	25.7	27.5	17.6	21.9
3	32.8	31.9	33.0	33.5	30.0	31.1	17.9	19.7	11.5	15.7
4	28.5	28.4	29.9	30.5	25.3	26.9	16.3	18.7	8.8	13.6
5	26.9	26.9	25.1	25.9	22.5	24.2	14.5	17.4	7.2	11.8
6	25.3	24.4	24.3	24.8	20.6	22.6	13.5	17.0		
7			21.8	22.5	17.8	19.8	12.7	16.8		
8			20.1	20.8	16.8	19.1	10.0	14.4		
9			17.5	18.1	15.7	18.3	9.5	14.4		
10					14.6	17.7	8.9	14.4		

**Table 3b.** Observed (obs.) and relative (rel.) survival of patients with gallbladder cancer by age category for period 1988-2011 (N=1,696).

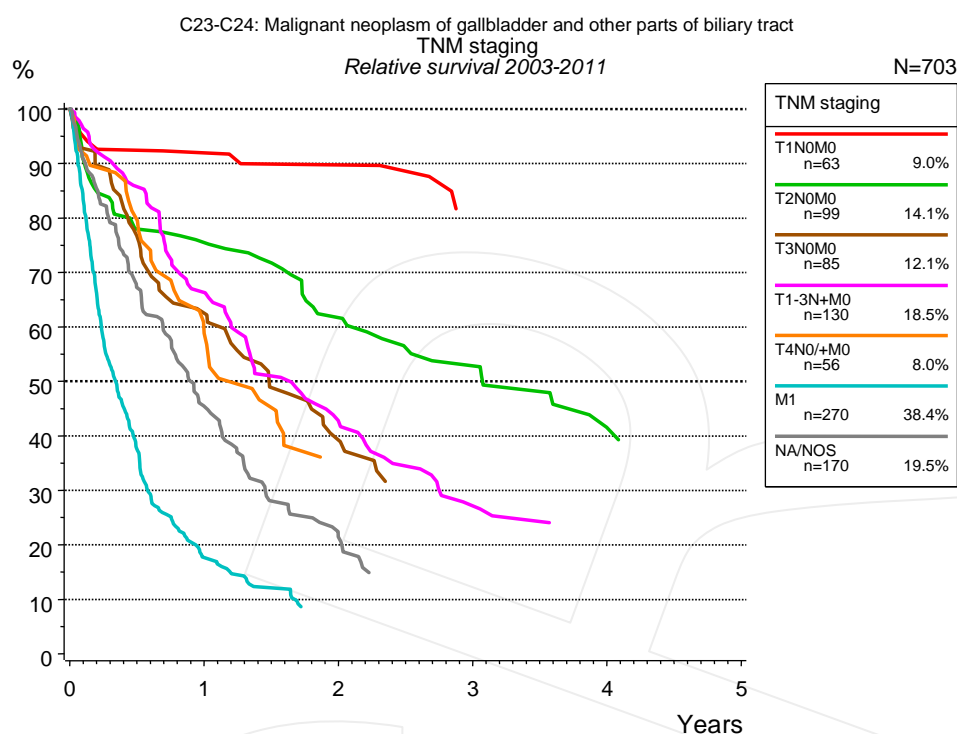


**Figure 4a.** Relative survival of patients with gallbladder cancer by UICC. For 598 of 744 cases diagnosed between 1992 and 2002 valid data could be obtained for this item. For a total of 589 cases an evaluable classification was established. The grey line represents the subgroup of 155 patients with missing values regarding UICC (20.8% of 744 patients, the percent values of all other categories are related to n=589).

Due to substantial changes in stage classification schemes long-term survival statistics over decades could not be created.

Years	UICC											
	I n=66		II n=119		III n=158		IVA n=43		IVB n=203		NA/NOS n=155	
	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	87.9	89.9	69.7	72.0	49.4	50.6	45.3	45.9	20.7	21.1	34.8	36.9
2	71.2	75.4	52.1	55.7	30.4	31.6			11.7	12.0	21.9	24.5
3	60.6	66.9	46.1	50.8	22.8	23.9					13.4	15.1
4	57.6	64.7	41.0	46.3	20.9	22.1					11.4	13.2
5	51.3	59.5	35.0	40.1	18.3	20.1					10.0	12.2
6	49.6	58.6	30.6	36.6	18.3	19.7						
7	43.2	53.2	29.5	35.2	14.5	16.4						
8	40.9	50.5	25.3	31.4	13.6	15.2						
9	36.1	45.9	23.2	29.5	12.8	14.4						
10			22.0	29.2								

**Table 4b.** Observed (obs.) and relative (rel.) survival of patients with gallbladder cancer by UICC for period 1992-2002 (N=589).

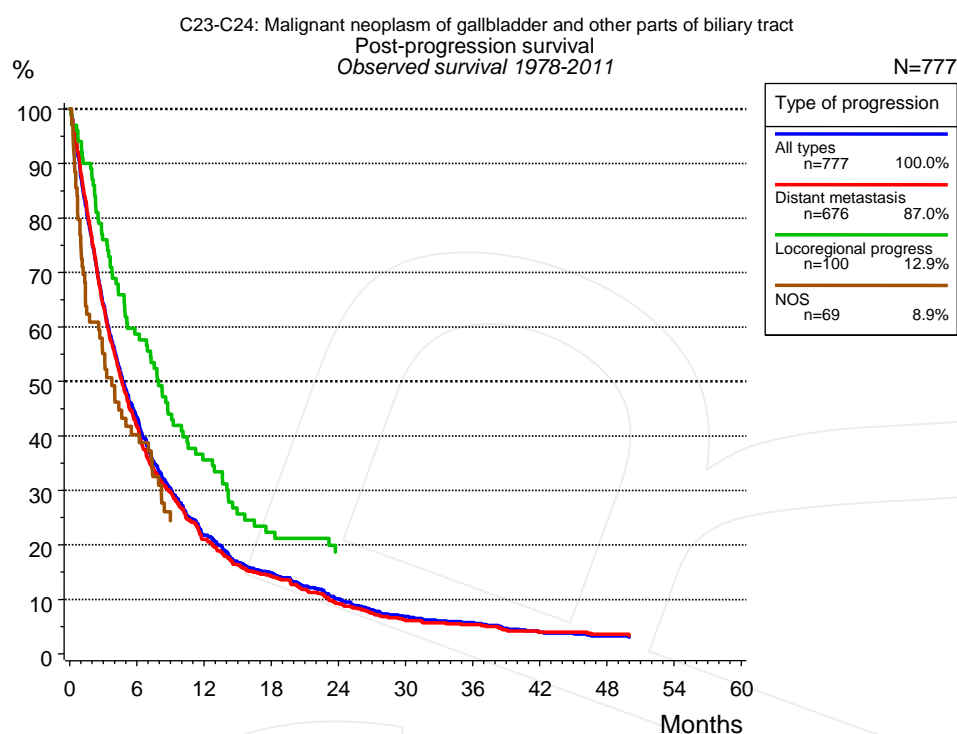


**Figure 4c.** Relative survival of patients with gallbladder cancer by TNM staging. For 711 of 873 cases diagnosed between 2003 and 2011 valid data could be obtained for this item. For a total of 703 cases an evaluable classification was established. The grey line represents the subgroup of 170 patients with missing values regarding TNM staging (19.5% of 873 patients, the percent values of all other categories are related to n=703).

Due to substantial changes in stage classification schemes long-term survival statistics over decades could not be created.

		TNM staging													
		T1N0M0 n=63		T2N0M0 n=99		T3N0M0 n=85		T1-3N+M0 n=130		T4N0/+M0 n=56		M1 n=270		NA/NOS n=170	
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		90.4	91.9	73.2	75.5	61.3	62.5	65.2	66.3	57.2	58.8	17.2	17.6	42.9	45.4
2		86.7	89.7	58.1	61.7	38.2	39.2	40.4	42.7					19.3	21.4
3		75.7	81.4	48.7	52.8	29.6	30.0	25.6	27.1						
4		75.7	78.9	36.2	41.5										

**Table 4d.** Observed (obs.) and relative (rel.) survival of patients with gallbladder cancer by TNM staging for period 2003-2011 (N=703).



**Figure 5a.** Observed post-progression survival of 777 patients with gallbladder cancer diagnosed between 1978 and 2011 (incl. M1). These 777 patients with documented progression events during their course of disease represent 42.9% of the totally 1,810 evaluated cases. Patients with cancer relapse documented via death certificates only were excluded (n=462, 25.5%). 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=777	Distant metastasis n=676	Locoregional progress n=100	NOS n=69
	%	%	%	%
0	100.0	100.0	100.0	100.0
12	21.8	21.0	35.6	
24	10.1	9.3	18.7	
36	5.7	5.3		
48	3.3	3.6		

**Table 5b.** Observed post-progression survival of patients with gallbladder cancer for period 1978-2011 (N=777).



**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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