

Munich Cancer Registry



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

Cancer statistics: Survival

C33, C34: Small cell LC

Year of diagnosis	1988-2012
Patients	5,140
Diseases	5,142
Cases evaluated	3,321
Creation date	03/25/2014
Export date	02/12/2014
Population	4.5 m



http://www.tumorregister-muenchen.de/en/facts/surv/surv_C34s_E.pdf

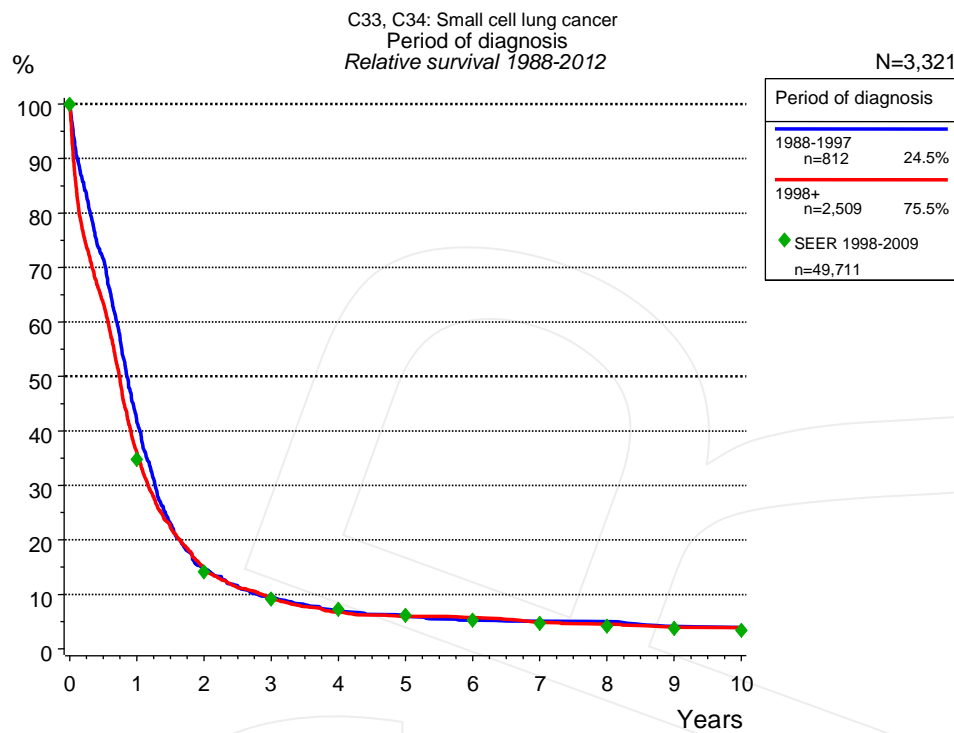


Figure 1a. Relative survival of patients with small cell LC by period of diagnosis. Included in the evaluation are 3,321 cases diagnosed between 1988 and 2012.

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 n=812		1998+ n=2,509	
	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0
1	41.1	41.7	35.2	35.9
2	14.3	14.8	14.3	14.8
3	9.1	9.6	8.8	9.2
4	6.6	7.0	6.3	6.7
5	5.6	6.1	5.5	5.9
6	4.7	5.3	5.2	5.7
7	4.5	5.1	4.4	4.9
8	4.3	5.0	4.0	4.5
9	3.4	4.1	3.5	4.0
10	3.3	3.9	3.4	3.9

Table 1b. Observed (obs.) and relative (rel.) survival of patients with small cell LC by period of diagnosis for period 1988-2012 (N=3,321).

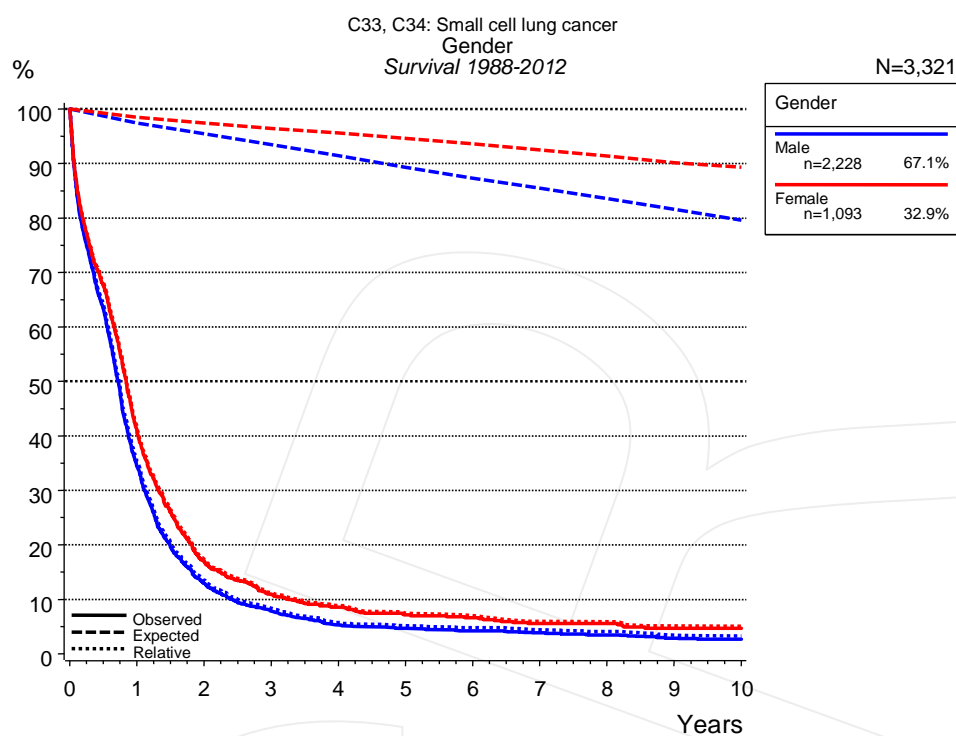


Figure 2a. Survival of patients with small cell LC by gender. Included in the evaluation are 3,321 cases diagnosed between 1988 and 2012.

Years	Gender			
	Male n=2,228		Female n=1,093	
	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0
1	34.5	35.4	41.0	41.5
2	12.9	13.5	16.9	17.3
3	7.8	8.3	11.0	11.2
4	5.3	5.7	8.6	8.9
5	4.7	5.2	7.1	7.5
6	4.2	4.8	6.6	7.0
7	3.8	4.4	5.5	6.0
8	3.5	4.1	5.5	5.9
9	2.9	3.4	4.7	5.1
10	2.7	3.3	4.7	5.0

Table 2b. Observed (obs.) and relative (rel.) survival of patients with small cell LC by gender for period 1988-2012 (N=3,321).

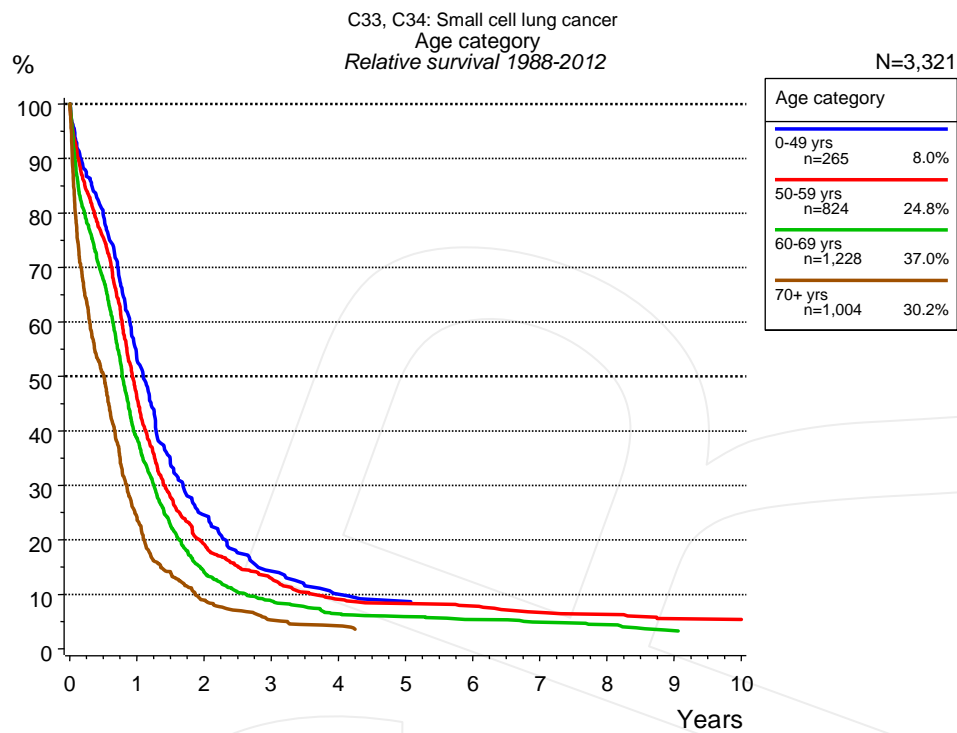


Figure 3a. Relative survival of patients with small cell LC by age category. Included in the evaluation are 3,321 cases diagnosed between 1988 and 2012.

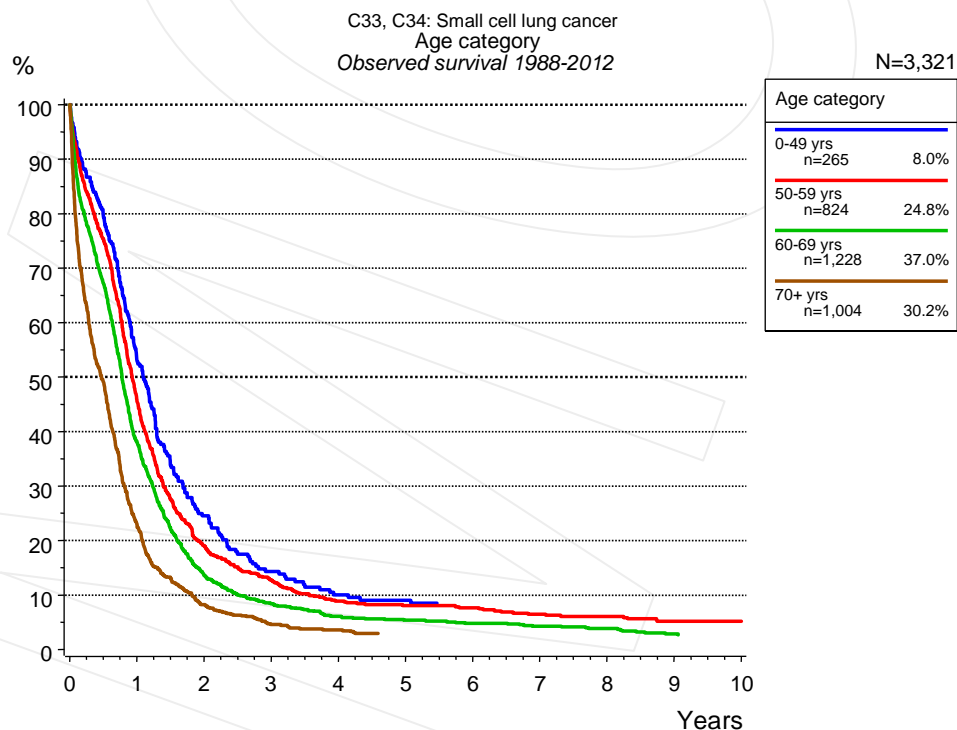


Figure 3b. Observed survival of patients with small cell LC by age category. Included in the evaluation are 3,321 cases diagnosed between 1988 and 2012.

Years	Age category							
	0-49 yrs n=265		50-59 yrs n=824		60-69 yrs n=1,228		70+ yrs n=1,004	
	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	52.8	52.9	45.8	46.1	38.2	38.7	22.9	24.0
2	24.5	24.5	19.0	19.2	13.6	14.0	8.2	8.9
3	14.3	14.2	12.7	12.9	8.5	8.8	4.5	5.2
4	10.0	10.0	8.9	9.1	6.1	6.4	3.6	4.2
5	9.0	8.7	8.0	8.3	5.4	5.9		
6	8.5	8.5	7.6	7.9	4.8	5.4		
7	8.5	8.4	6.5	6.7	4.3	4.9		
8	8.5	8.3	6.0	6.3	3.9	4.4		
9	8.5	8.2	5.2	5.5	2.9	3.3		
10	8.5	8.1	5.2	5.4				

Table 3c. Observed (obs.) and relative (rel.) survival of patients with small cell LC by age category for period 1988-2012 (N=3,321).

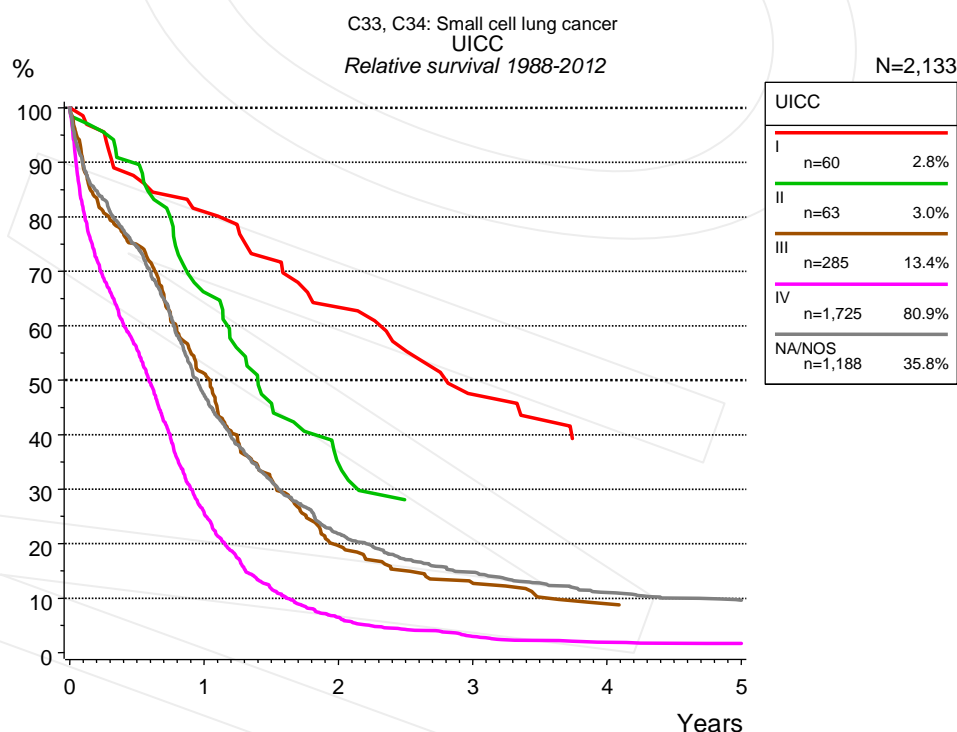


Figure 4a. Relative survival of patients with small cell LC by UICC. For 2,721 of 3,321 cases diagnosed between 1988 and 2012 valid data could be obtained for this item. For a total of 2,133 cases an evaluable classification was established. The grey line represents the subgroup of 1,188 patients with missing values regarding UICC (35.8% of 3,321 patients, the percent values of all other categories are related to n=2,133).

Years	UICC									
	I n=60		II n=63		III n=285		IV n=1,725		NA/NOS n=1,188	
	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	79.9	80.9	65.1	66.1	50.4	51.2	25.2	25.6	46.2	47.3
2	61.8	63.4	34.1	34.7	19.0	19.6	6.3	6.5	20.9	21.8
3	44.6	47.4			12.5	12.7	2.8	3.0	14.0	14.7
4	36.3	38.9			8.6	8.9	1.8	1.9	10.3	11.0
5							1.6	1.7	8.9	9.7

Table 4b. Observed (obs.) and relative (rel.) survival of patients with small cell LC by UICC for period 1988-2012 (N=2,133).

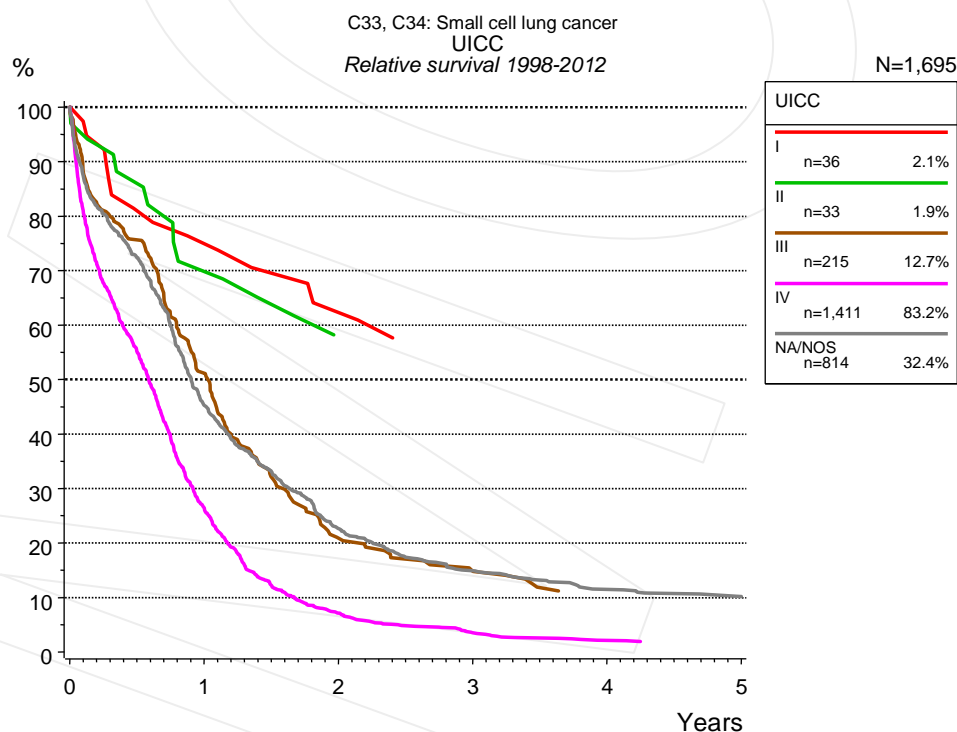


Figure 4c. Relative survival of patients with small cell LC by UICC. For 2,076 of 2,509 cases diagnosed between 1998 and 2012 valid data could be obtained for this item. For a total of 1,695 cases an evaluable classification was established. The grey line represents the subgroup of 814 patients with missing values regarding UICC (32.4% of 2,509 patients, the percent values of all other categories are related to n=1,695).

Years	UICC									
	I		II		III		IV		NA/NOS	
	n=36		n=33		n=215		n=1,411		n=814	
	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	74.9	74.9	70.7	69.8	50.5	51.1	25.9	26.3	44.2	45.3
2	61.6	62.3			20.3	20.9	6.9	7.1	21.7	22.6
3					14.7	14.8	3.3	3.5	14.2	14.9
4							2.0	2.1	10.7	11.5
5									9.3	10.2

Table 4d. Observed (obs.) and relative (rel.) survival of patients with small cell LC by UICC for period 1998-2012 (N=1,695).

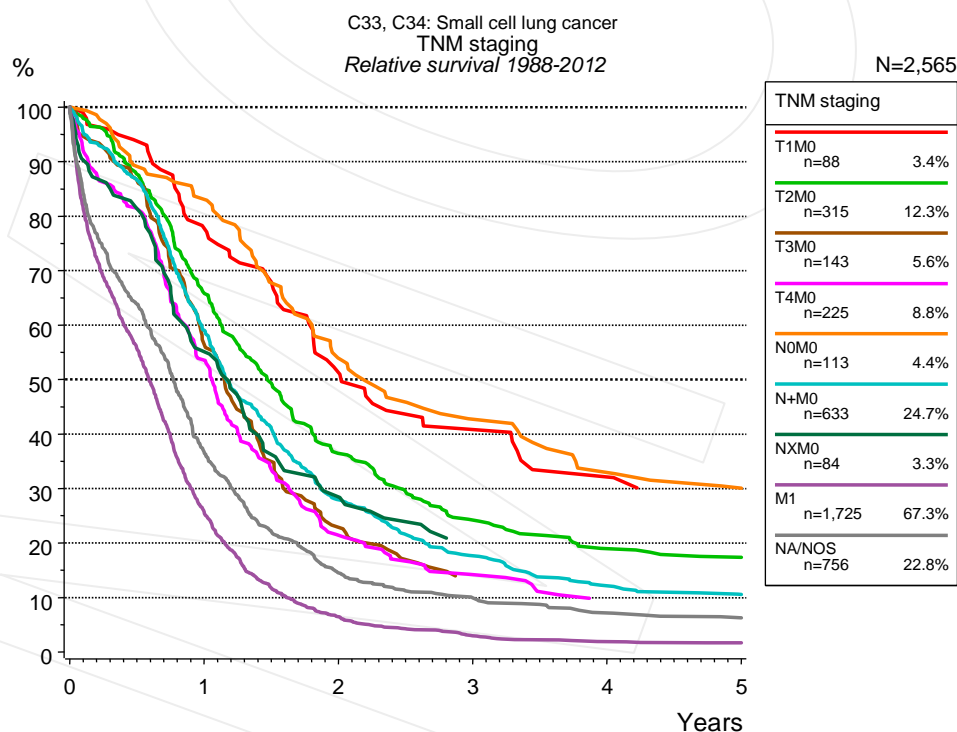


Figure 4e. Relative survival of patients with small cell LC by TNM staging. For 2,721 of 3,321 cases diagnosed between 1988 and 2012 valid data could be obtained for this item. For a total of 2,565 cases an evaluable classification was established. The accumulated percentage exceeds the 100% value because patients are potentially considered in more than one subgroup. The grey line represents the subgroup of 756 patients with missing values regarding TNM staging (22.8% of 3,321 patients, the percent values of all other categories are related to n=2,565).

TNM staging														
Years	T1M0 n=88		T2M0 n=315		T3M0 n=143		T4M0 n=225		N0M0 n=113		N+M0 n=633		NXM0 n=84	
	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	76.9	77.8	64.8	65.8	56.3	56.5	52.9	53.5	82.1	83.1	58.0	59.0	54.9	55.1
2	50.5	51.3	35.2	36.5	22.5	22.9	20.8	21.4	51.9	53.9	27.0	28.0	28.7	28.4
3	39.6	40.8	23.1	24.2			13.6	14.2	40.4	42.7	16.9	17.7		
4	31.5	32.1	17.8	19.0			9.2	9.5	31.3	32.9	11.5	12.1		
5			16.2	17.4					27.7	30.1	9.8	10.6		

TNM staging				
Years	M1 n=1,725		NA/NOS n=756	
	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0
1	25.2	25.6	35.7	36.6
2	6.3	6.5	13.9	14.5
3	2.8	3.0	9.4	9.9
4	1.8	1.9	6.7	7.2
5	1.6	1.7	5.8	6.2

Table 4f. Observed (obs.) and relative (rel.) survival of patients with small cell LC by TNM staging for period 1988-2012 (N=3,326).

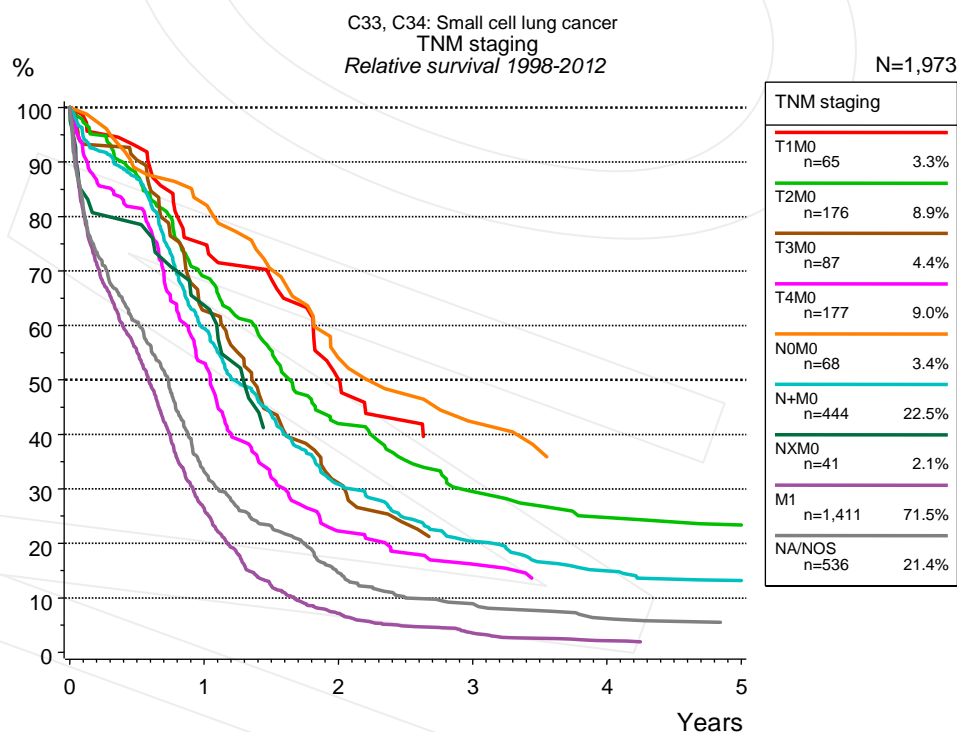


Figure 4g. Relative survival of patients with small cell LC by TNM staging. For 2,076 of 2,509 cases diagnosed between 1998 and 2012 valid data could be obtained for this item. For a total of 1,973 cases an evaluable classification was established. The accumulated percentage exceeds the 100% value because patients are potentially considered in more than one subgroup. The grey line represents the subgroup of 536 patients with missing values regarding TNM staging (21.4% of 2,509 patients, the percent values of all other categories are related to n=1,973).

TNM staging														
Years	T1M0 n=65		T2M0 n=176		T3M0 n=87		T4M0 n=177		N0M0 n=68		N+M0 n=444		NXM0 n=41	
	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	74.8	74.9	67.8	68.9	61.7	62.7	52.6	53.1	82.1	82.3	58.5	59.4	64.6	63.7
2	49.7	50.1	40.5	42.0	30.8	31.1	21.5	22.3	52.2	54.0	29.8	30.8		
3	37.7	38.3	28.2	29.5			15.4	16.2	40.3	42.3	19.4	20.4		
4			23.6	24.7							14.2	15.0		
5			21.9	23.3							12.3	13.2		

TNM staging				
Years	M1 n=1,411		NA/NOS n=536	
	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0
1	25.9	26.3	32.1	33.1
2	6.9	7.1	13.9	14.6
3	3.3	3.5	8.6	8.9
4	2.0	2.1	5.9	6.2
5			5.0	5.5

Table 4h. Observed (obs.) and relative (rel.) survival of patients with small cell LC by TNM staging for period 1998-2012 (N=2,469).

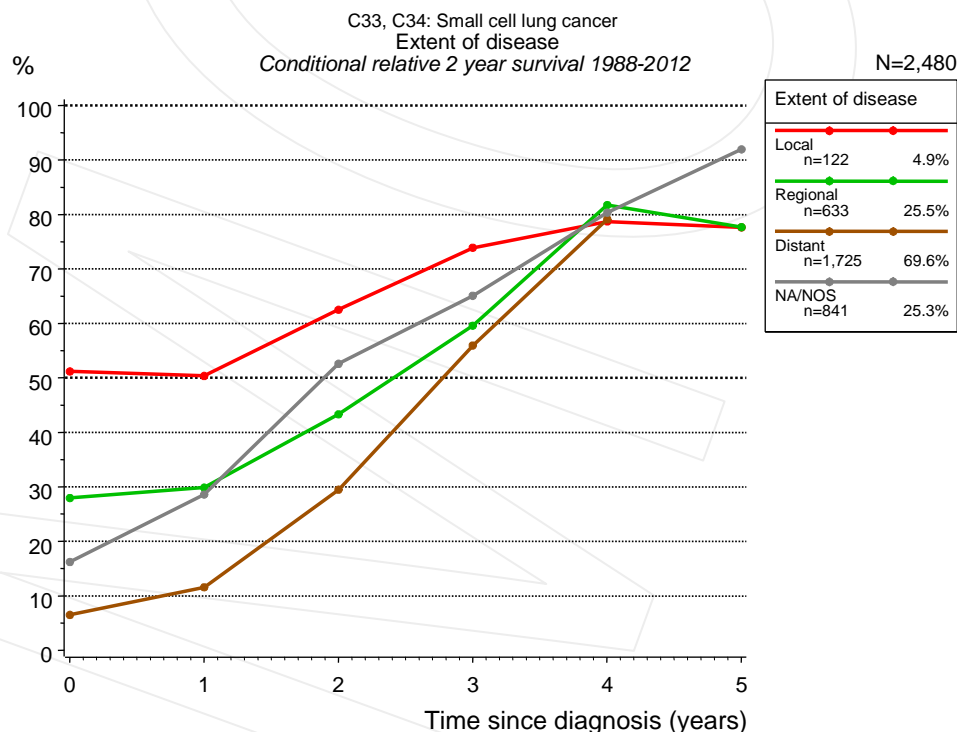


Figure 4i. Conditional relative 2-year survival of patients with small cell LC by extent of disease. For 2,721 of 3,321 cases diagnosed between 1988 and 2012 valid data could be obtained for this item. For a total of 2,480 cases an evaluable classification was established. The grey line represents the subgroup of 841 patients with missing values regarding extent of disease (25.3% of 3,321 patients, the percent values of all other categories are related to n=2,480).

Years	Extent of disease							
	Local		Regional		Distant		NA/NOS	
	n	Cond. surv. % 2 yrs	n	Cond. surv. % 2 yrs	n	Cond. surv. % 2 yrs	n	Cond. surv. % 2 yrs
0	122	51.2	633	28.0	1,725	6.5	841	16.2
1	91	50.4	347	29.9	406	11.6	298	28.6
2	51	62.5	150	43.3	91	29.5	113	52.6
3	39	73.9	84	59.6	35	56.0	72	65.1
4	28	78.7	51	81.7	21	79.1	53	80.3
5	24	77.6	37	77.7			40	91.9

Table 4j. Conditional relative 2-year survival of patients with small cell LC by extent of disease for period 1988-2012 (N=2,480).

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 4g). 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 2-year survival rate is 73.9% (n=39).

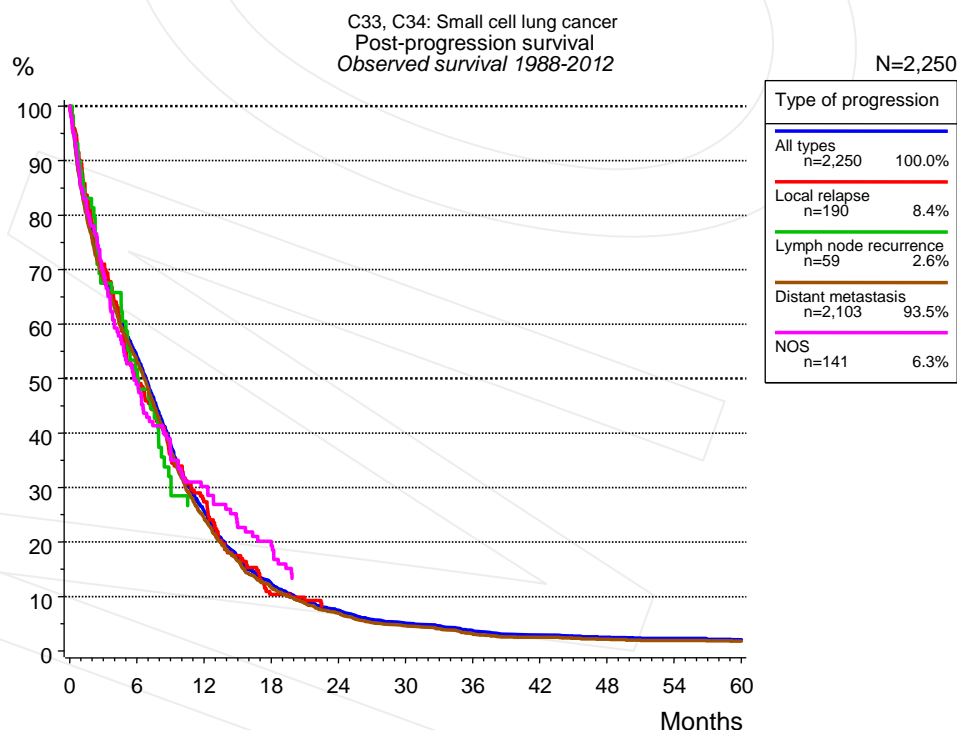


Figure 5a. Observed post-progression survival of 2,250 patients with small cell LC diagnosed between 1988 and 2012 (incl. M1). These 2,250 patients with documented progression events during their course of disease represent 67.8% of the totally 3,321 evaluated cases. Patients with cancer relapse documented via death certificates only were excluded (n=618, 18.6%). 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				NOS n=141 %
	All types n=2,250 %	Local relapse n=190 %	Lymph node recurrence n=59 %	Distant metastasis n=2,103 %	
0	100.0	100.0	100.0	100.0	100.0
12	25.7	27.3		24.4	30.2
24	7.5	8.2		6.9	
36	3.7			3.1	
48	2.5			2.2	
60	2.0			1.8	

Table 5b. Observed post-progression survival of patients with small cell LC for period 1988-2012 (N=2,250).

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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