

Munich Cancer Registry



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Munich Cancer Registry at Munich Cancer Center
Marchioninstr. 15
Munich, 81377
Germany

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

Cancer statistics: Survival

C33, C34: Non-small cell LC

Year of diagnosis	1978-1987	1988-1997	1998-2011
Patients	1,467	3,581	15,778
Diseases	1,469	3,599	15,910
Creation date	04/01/2013		
Export date	01/03/2013		
Population	4.5 m		



http://www.tumorregister-muenchen.de/en/facts/surv/surv_C34n_E.pdf

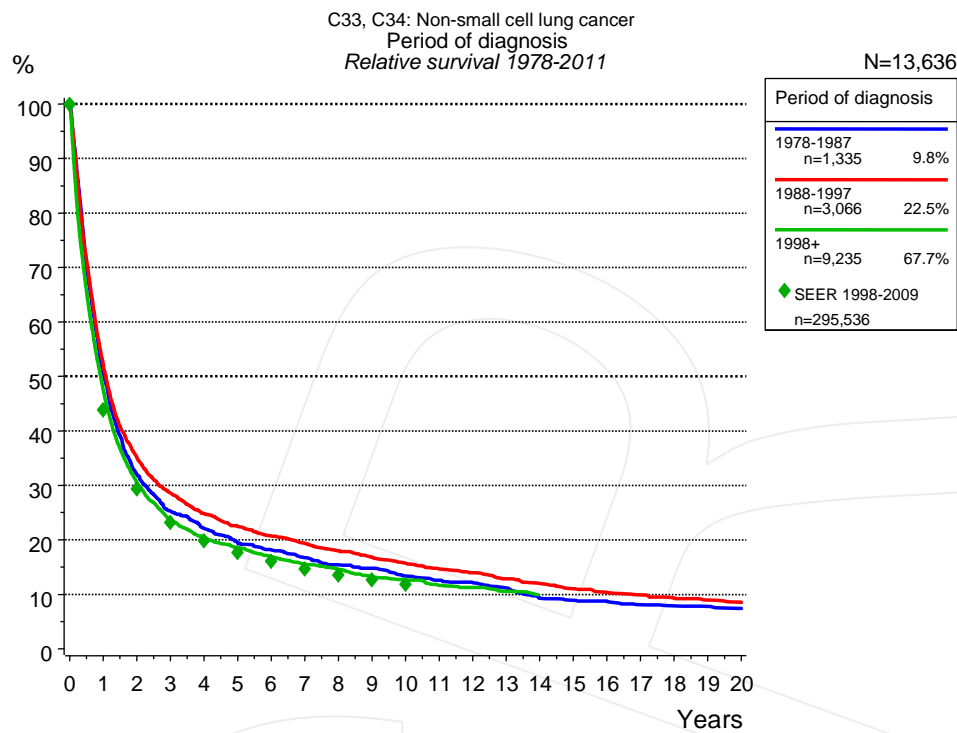


Figure 1a. Relative survival of patients with non-small cell LC by period of diagnosis. Included in the evaluation are 13,636 cases diagnosed between 1978 and 2011.

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		1988-1997		1998+	
	n=1,335		n=3,066		n=9,235	
	obs. %	rel. %	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0	100.0	100.0
1	49.1	50.4	50.7	52.0	46.1	47.3
2	30.4	32.0	33.5	35.1	29.0	30.4
3	23.5	25.2	26.6	28.6	22.1	23.7
4	20.0	22.1	22.6	24.8	18.7	20.4
5	17.3	19.5	20.0	22.5	16.6	18.6
6	15.7	18.1	18.0	20.7	14.7	16.8
7	14.1	16.7	16.4	19.3	13.4	15.6
8	12.7	15.4	15.0	18.0	12.2	14.6
9	12.0	14.8	13.6	16.8	10.7	13.2
10	10.5	13.3	12.3	15.7	10.0	12.6
11	9.6	12.5	11.3	14.6	9.0	11.6
12	9.1	12.1	10.5	13.9	8.6	11.2
13	8.1	11.1	9.3	12.8	7.8	10.6
14	6.5	9.2	8.5	12.0		
15	6.1	8.9	7.6	11.0		
16	5.8	8.7	6.9	10.3		
17	5.3	8.1	6.5	9.9		
18	5.0	7.9	6.0	9.4		
19	4.8	7.7	5.5	9.0		
20	4.4	7.4	5.0	8.5		

Table 1b. Observed (obs.) and relative (rel.) survival of patients with non-small cell LC by period of diagnosis for period 1978-2011 (N=13,636).

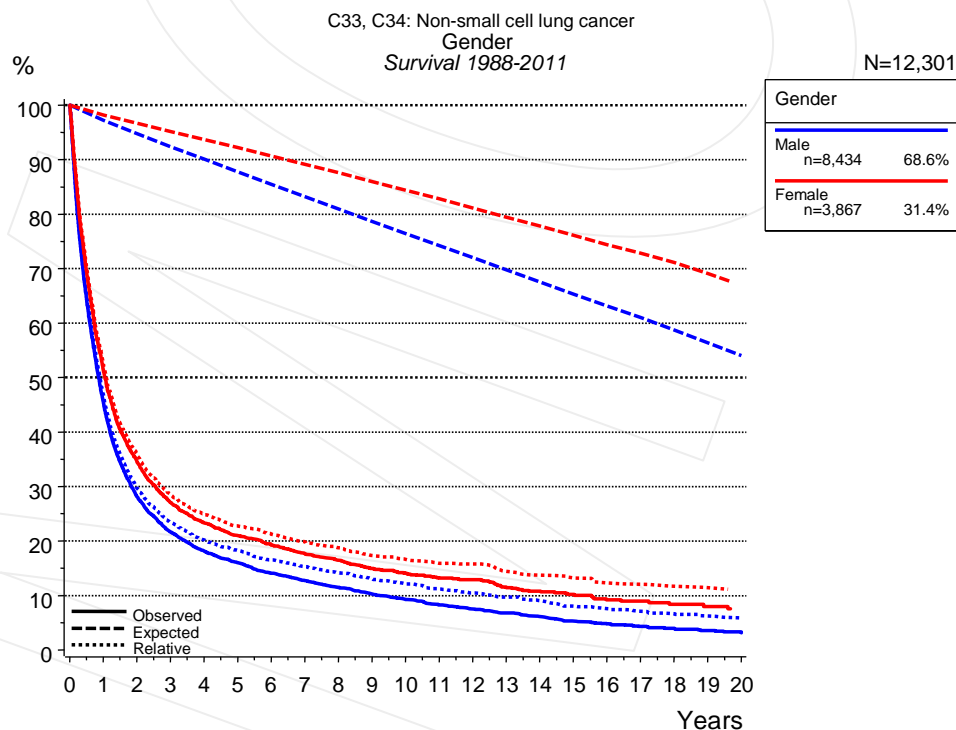


Figure 2a. Survival of patients with non-small cell LC by gender. Included in the evaluation are 12,301 cases diagnosed between 1988 and 2011.

Years	Gender			
	Male n=8,434		Female n=3,867	
	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0
1	45.5	46.8	51.3	52.2
2	28.2	29.7	34.6	35.7
3	21.7	23.4	27.1	28.4
4	18.2	20.2	23.3	24.9
5	16.0	18.2	21.0	22.8
6	14.1	16.5	19.3	21.2
7	12.7	15.3	17.7	19.8
8	11.5	14.2	16.4	18.8
9	10.3	13.0	14.9	17.3
10	9.3	12.1	14.1	16.6
11	8.3	11.1	13.2	15.9
12	7.5	10.4	12.9	15.8
13	6.8	9.7	11.5	14.4
14	6.1	9.0	10.8	13.7
15	5.3	8.0	10.2	13.2
16	4.8	7.6	9.2	12.3
17	4.3	7.1	9.0	12.0
18	4.0	6.7	8.4	11.7
19	3.6	6.2	8.0	11.4
20	3.2	5.9	7.6	10.8

Table 2b. Observed (obs.) and relative (rel.) survival of patients with non-small cell LC by gender for period 1988-2011 (N=12,301).

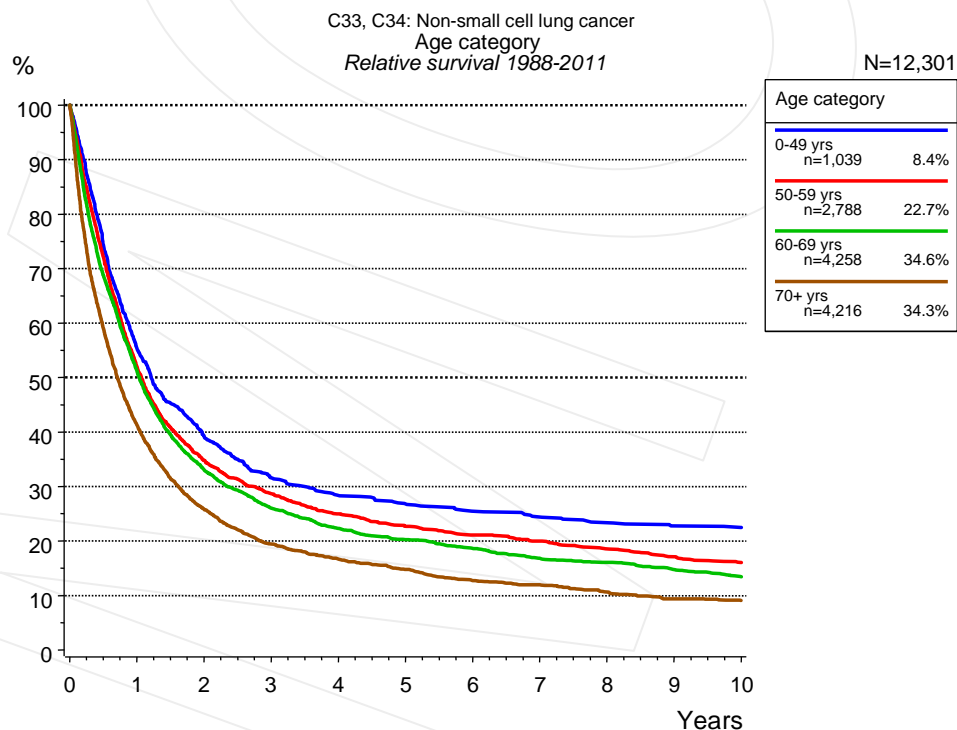


Figure 3a. Relative survival of patients with non-small cell LC by age category. Included in the evaluation are 12,301 cases diagnosed between 1988 and 2011.

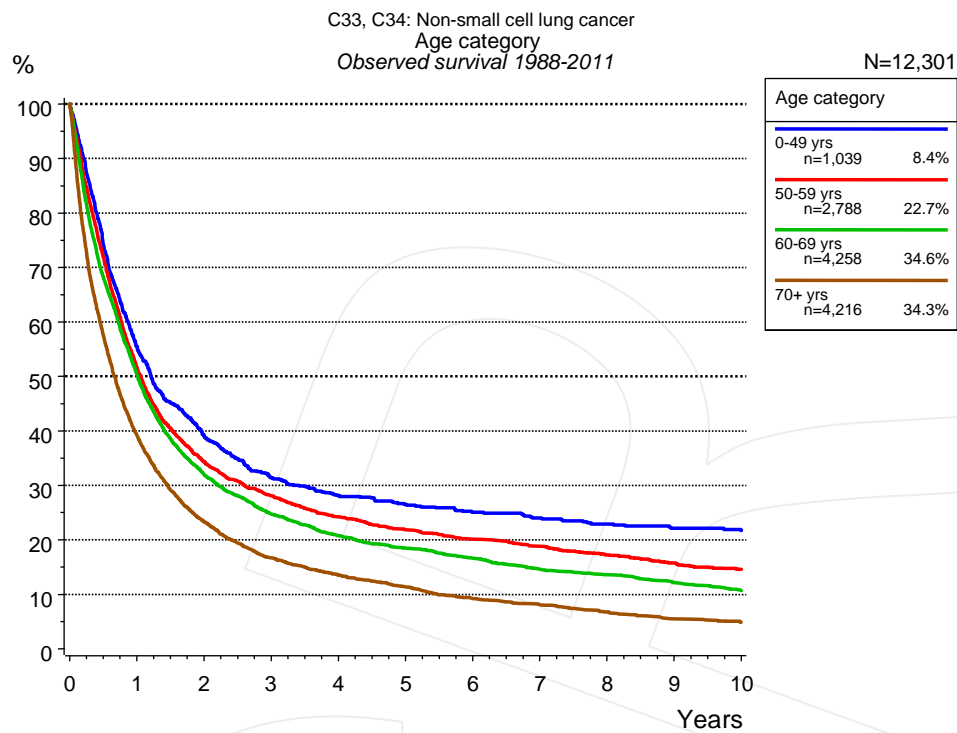


Figure 3b. Observed survival of patients with non-small cell LC by age category. Included in the evaluation are 12,301 cases diagnosed between 1988 and 2011.

Years	Age category							
	0-49 yrs n=1,039		50-59 yrs n=2,788		60-69 yrs n=4,258		70+ yrs n=4,216	
	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	55.5	55.3	51.7	52.0	50.4	51.2	39.2	41.3
2	39.1	39.3	34.3	34.8	32.0	33.1	23.3	25.8
3	31.4	31.6	28.1	28.7	24.7	26.0	16.7	19.5
4	28.1	28.3	24.2	24.9	20.8	22.3	13.6	16.7
5	26.5	26.8	21.8	22.7	18.4	20.3	11.3	14.8
6	25.1	25.5	20.0	21.1	16.6	18.6	9.2	12.8
7	24.0	24.4	18.8	19.9	14.6	16.8	8.1	11.9
8	22.9	23.4	17.2	18.5	13.6	16.1	6.7	10.6
9	22.1	22.8	15.7	17.1	12.1	14.8	5.5	9.4
10	21.7	22.5	14.5	16.0	10.7	13.5	4.9	9.1

Table 3c. Observed (obs.) and relative (rel.) survival of patients with non-small cell LC by age category for period 1988-2011 (N=12,301).

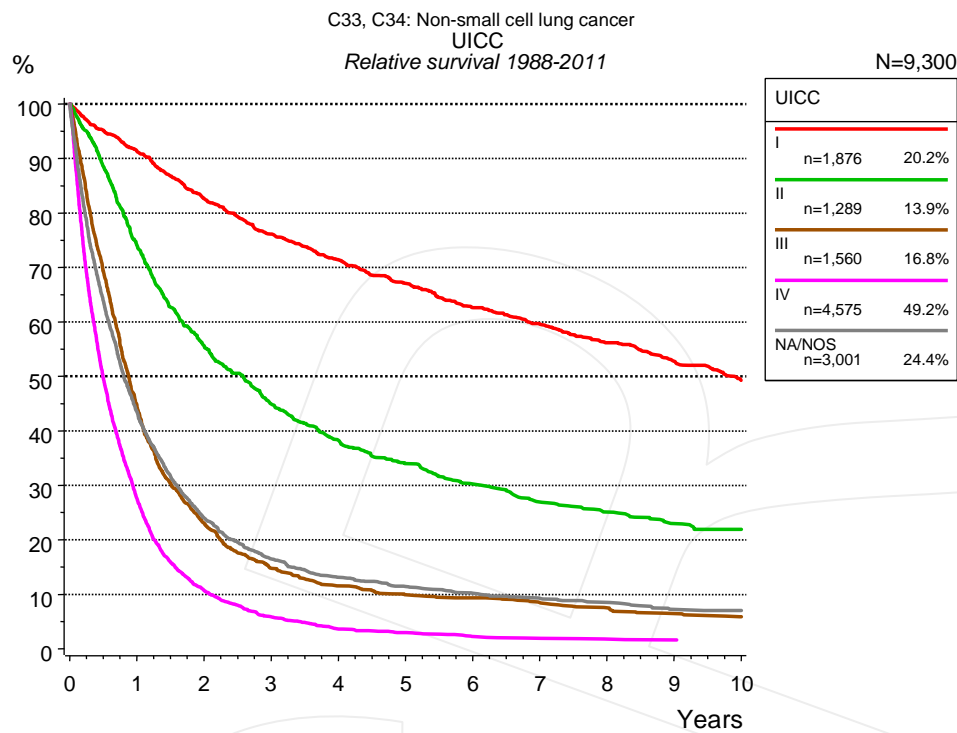


Figure 4a. Relative survival of patients with non-small cell LC by UICC. For 10,987 of 12,301 cases diagnosed between 1988 and 2011 valid data could be obtained for this item. For a total of 9,300 cases an evaluable classification was established. The grey line represents the subgroup of 3,001 patients with missing values regarding UICC (24.4% of 12,301 patients, the percent values of all other categories are related to n=9,300).

Years	UICC									
	I		II		III		IV		NA/NOS	
	n=1,876		n=1,289		n=1,560		n=4,575		n=3,001	
	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	89.5	91.3	72.7	74.1	43.7	44.7	26.9	27.6	42.1	43.5
2	79.3	82.6	53.5	55.6	22.1	23.1	10.3	10.7	22.5	24.0
3	71.4	76.1	42.4	44.9	13.9	14.8	5.6	5.9	15.1	16.5
4	65.6	71.4	35.4	38.2	10.6	11.6	3.4	3.7	11.6	13.1
5	60.2	67.1	30.7	34.0	8.9	9.9	2.7	3.0	9.9	11.4
6	54.9	62.6	26.8	30.2	8.3	9.3	2.1	2.3	8.6	10.2
7	51.0	59.6	23.5	26.9	7.3	8.4	1.8	1.9	7.7	9.3
8	46.9	56.2	21.4	25.1	6.4	7.5	1.5	1.8	6.9	8.5
9	43.0	52.8	19.1	23.0	5.4	6.5	1.5	1.6	5.7	7.2
10	39.1	49.2	17.9	21.9	4.7	5.9	1.4	1.5	5.4	7.0

Table 4b. Observed (obs.) and relative (rel.) survival of patients with non-small cell LC by UICC for period 1988-2011 (N=9,300).

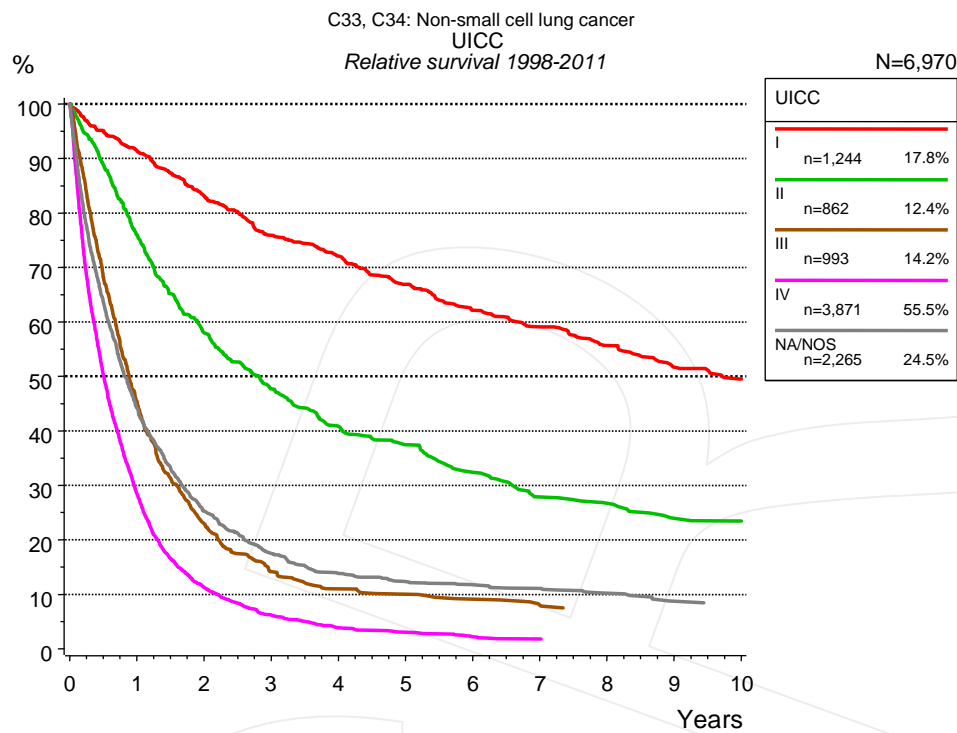


Figure 4c. Relative survival of patients with non-small cell LC by UICC. For 8,158 of 9,235 cases diagnosed between 1998 and 2011 valid data could be obtained for this item. For a total of 6,970 cases an evaluable classification was established. The grey line represents the subgroup of 2,265 patients with missing values regarding UICC (24.5% of 9,235 patients, the percent values of all other categories are related to n=6,970).

		UICC									
		I n=1,244		II n=862		III n=993		IV n=3,871		NA/NOS n=2,265	
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		89.6	91.4	74.5	76.0	44.2	45.2	27.8	28.5	42.7	44.1
2		79.9	83.1	55.8	58.0	22.1	23.0	10.8	11.2	23.8	25.2
3		71.4	75.9	45.0	47.7	13.3	14.2	5.9	6.2	16.0	17.5
4		66.3	72.1	37.9	40.8	10.2	11.0	3.6	3.9	12.3	13.8
5		60.1	66.9	34.0	37.4	9.2	10.0	2.8	3.0	10.8	12.3
6		54.5	62.1	28.8	32.4	8.1	9.1	2.0	2.2	10.0	11.7
7		50.8	59.1	24.3	27.9	7.1	7.9	1.7	1.8	9.4	11.1
8		46.6	55.7	22.9	26.7					8.3	10.2
9		42.3	51.7	19.9	23.9					6.9	8.7
10		39.4	49.5	19.4	23.4					6.6	8.1

Table 4d. Observed (obs.) and relative (rel.) survival of patients with non-small cell LC by UICC for period 1998-2011 (N=6,970).

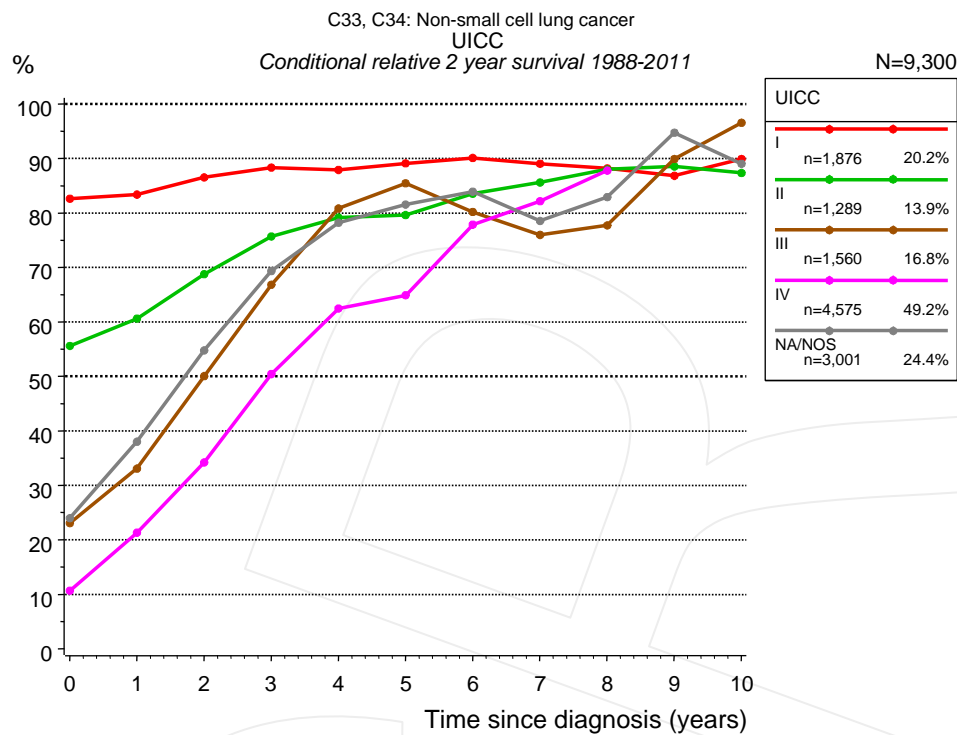


Figure 4e. Conditional relative 2-year survival of patients with non-small cell LC by UICC. For 10,987 of 12,301 cases diagnosed between 1988 and 2011 valid data could be obtained for this item. For a total of 9,300 cases an evaluable classification was established. The grey line represents the subgroup of 3,001 patients with missing values regarding UICC (24.4% of 12,301 patients, the percent values of all other categories are related to n=9,300).

UICC										
Years	I		II		III		IV		NA/NOS	
	n	Cond. surv. % 2 yrs	n	Cond. surv. % 2 yrs	n	Cond. surv. % 2 yrs	n	Cond. surv. % 2 yrs	n	Cond. surv. % 2 yrs
0	1,876	82.6	1,289	55.6	1,560	23.1	4,575	10.7	3,001	24.0
1	1,602	83.4	887	60.6	637	33.1	1,121	21.3	1,167	38.0
2	1,313	86.5	603	68.8	290	50.1	365	34.2	571	54.8
3	1,093	88.3	430	75.7	164	66.8	159	50.4	341	69.3
4	929	87.9	327	79.2	116	80.8	85	62.5	237	78.2
5	754	89.1	258	79.6	87	85.5	59	64.9	174	81.6
6	624	90.1	203	83.5	73	80.2	37	77.9	126	83.9
7	545	89.0	162	85.6	62	76.0	27	82.2	96	78.6
8	463	88.2	139	88.0	51	77.7	20	87.8	73	82.9
9	388	86.8	111	88.6	42	89.9			45	94.7
10	322	89.9	94	87.4	35	96.6			35	89.0

Table 4f. Conditional relative 2-year survival of patients with non-small cell LC by UICC for period 1988-2011 (N=9,300).

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 4c). 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 2-year survival rate is 88.3% (n=1,093).

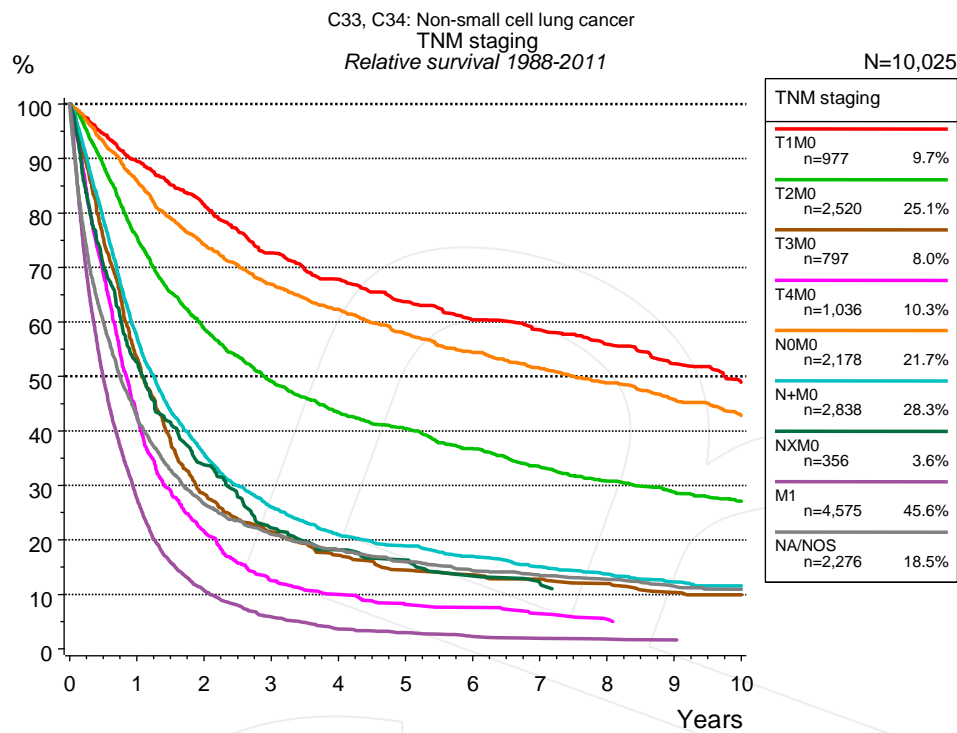


Figure 4g. Relative survival of patients with non-small cell LC by TNM staging. For 10,987 of 12,301 cases diagnosed between 1988 and 2011 valid data could be obtained for this item. For a total of 10,025 cases an evaluable classification was established. The accumulated percentage exceeds the 100% value because patients are potentially considered in more than one subgroup. The grey line represents the subgroup of 2,276 patients with missing values regarding TNM staging (18.5% of 12,301 patients, the percent values of all other categories are related to n=10,025).

		TNM staging													
		T1M0 n=977		T2M0 n=2,520		T3M0 n=797		T4M0 n=1,036		N0M0 n=2,178		N+M0 n=2,838		NXM0 n=356	
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		87.7	89.5	73.8	75.6	52.2	53.5	41.9	42.8	84.0	85.9	56.0	57.3	51.2	52.6
2		78.5	81.6	56.1	58.8	27.1	28.4	20.8	21.6	70.9	74.2	34.3	35.8	31.8	33.7
3		68.5	72.6	45.7	49.1	20.0	21.5	11.8	12.5	62.5	66.9	24.4	26.0	20.3	22.2
4		62.6	67.8	39.5	43.4	15.8	17.2	9.1	10.0	56.9	62.3	19.3	20.9	16.3	18.2
5		57.7	63.7	35.9	40.4	13.1	14.5	7.3	8.1	51.6	57.8	17.0	18.8	14.2	16.3
6		53.5	60.4	31.8	36.7	12.1	13.6	6.8	7.6	47.4	54.4	15.0	16.9	11.2	13.4
7		50.8	58.5	28.2	33.4	11.2	12.8	5.6	6.5	43.8	51.5	13.1	15.0	9.7	12.0
8		47.5	55.9	25.4	30.8	10.3	12.0	4.6	5.4	40.5	48.8	11.7	13.7		
9		43.4	52.3	23.1	28.8	8.8	10.4			37.1	45.7	10.2	12.3		
10		39.6	48.9	21.1	27.0	8.2	9.9			33.8	42.8	9.3	11.5		

cont'd Years	TNM staging			
	M1 n=4,575		NA/NOS n=2,276	
	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0
1	26.9	27.6	41.2	42.6
2	10.3	10.7	25.1	26.6
3	5.6	5.9	19.4	21.0
4	3.4	3.7	16.3	18.2
5	2.7	3.0	14.0	16.0
6	2.1	2.3	12.3	14.3
7	1.8	1.9	11.4	13.5
8	1.5	1.8	10.5	12.8
9	1.5	1.6	9.2	11.5
10	1.4	1.5	8.6	10.9

Table 4h. Observed (obs.) and relative (rel.) survival of patients with non-small cell LC by TNM staging for period 1988-2011 (N=15,277).

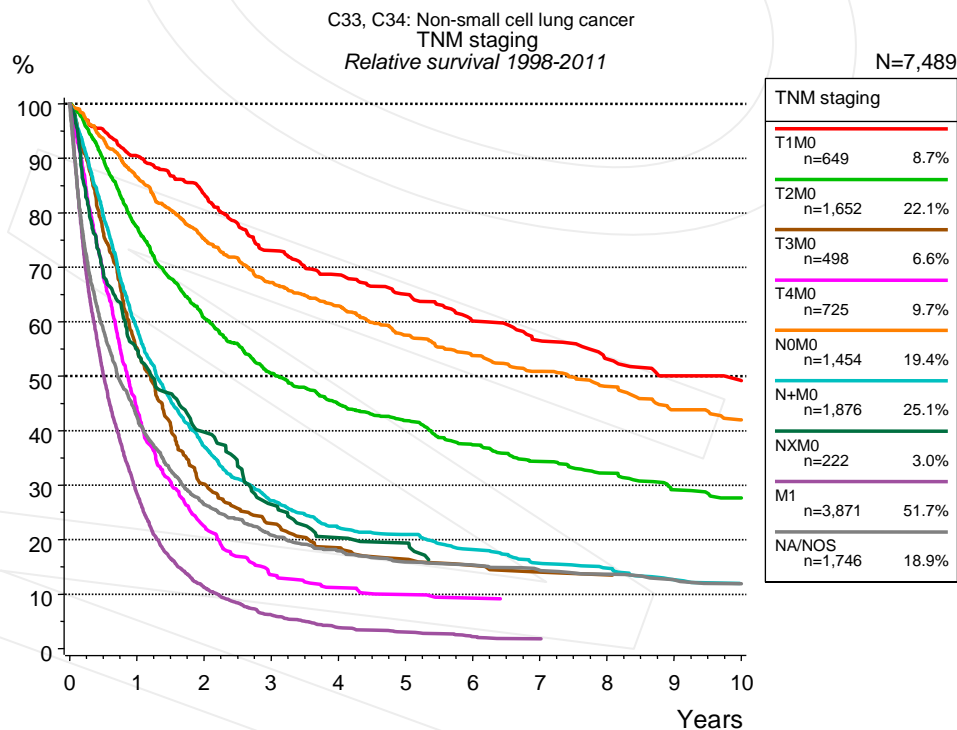


Figure 4i. Relative survival of patients with non-small cell LC by TNM staging. For 8,158 of 9,235 cases diagnosed between 1998 and 2011 valid data could be obtained for this item. For a total of 7,489 cases an evaluable classification was established. The accumulated percentage exceeds the 100% value because patients are potentially considered in more than one subgroup. The grey line represents the subgroup of 1,746 patients with missing values regarding TNM staging (18.9% of 9,235 patients, the percent values of all other categories are related to n=7,489).

TNM staging															
Years	T1M0 n=649		T2M0 n=1,652		T3M0 n=498		T4M0 n=725		N0M0 n=1,454		N+M0 n=1,876		NXM0 n=222		
	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	88.7	90.4	75.6	77.3	53.9	55.2	43.1	44.0	84.7	86.6	57.5	58.8	53.4	54.8	
2	80.2	83.4	58.0	60.7	29.0	30.2	21.6	22.5	72.1	75.3	35.6	37.1	37.4	39.7	
3	68.8	73.1	47.2	50.5	21.6	22.9	12.8	13.6	62.8	67.2	25.6	27.2	24.4	26.5	
4	63.4	68.6	41.0	44.9	17.3	18.5	10.4	11.2	57.6	62.9	20.5	22.2	18.5	20.4	
5	58.9	65.0	37.3	41.8	15.1	16.4	9.1	9.9	51.4	57.5	19.0	21.0	17.3	19.4	
6	53.2	60.1	32.5	37.4	13.8	15.3	8.4	9.3	47.0	53.8	16.1	18.2	13.8	16.1	
7	49.4	56.5	29.3	34.4	12.7	14.0			43.6	50.9	13.7	15.7	13.8	15.8	
8	45.2	53.2	26.7	32.2	12.1	13.5			40.1	48.1	12.6	14.8			
9	41.8	50.1	23.5	29.1					35.6	43.8	10.5	12.6			
10	39.9	49.2	21.8	27.7					33.3	42.0	9.6	11.9			

TNM staging				
Years	M1 n=3,871		NA/NOS n=1,746	
	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0
1	27.8	28.5	41.2	42.6
2	10.8	11.2	25.0	26.5
3	5.9	6.2	19.2	20.8
4	3.6	3.9	16.1	17.9
5	2.8	3.0	14.0	15.9
6	2.0	2.2	13.3	15.4
7	1.7	1.8	12.2	14.3
8			11.4	13.7
9			10.2	12.6
10			9.5	11.9

Table 4j. Observed (obs.) and relative (rel.) survival of patients with non-small cell LC by TNM staging for period 1998-2011 (N=10,947).

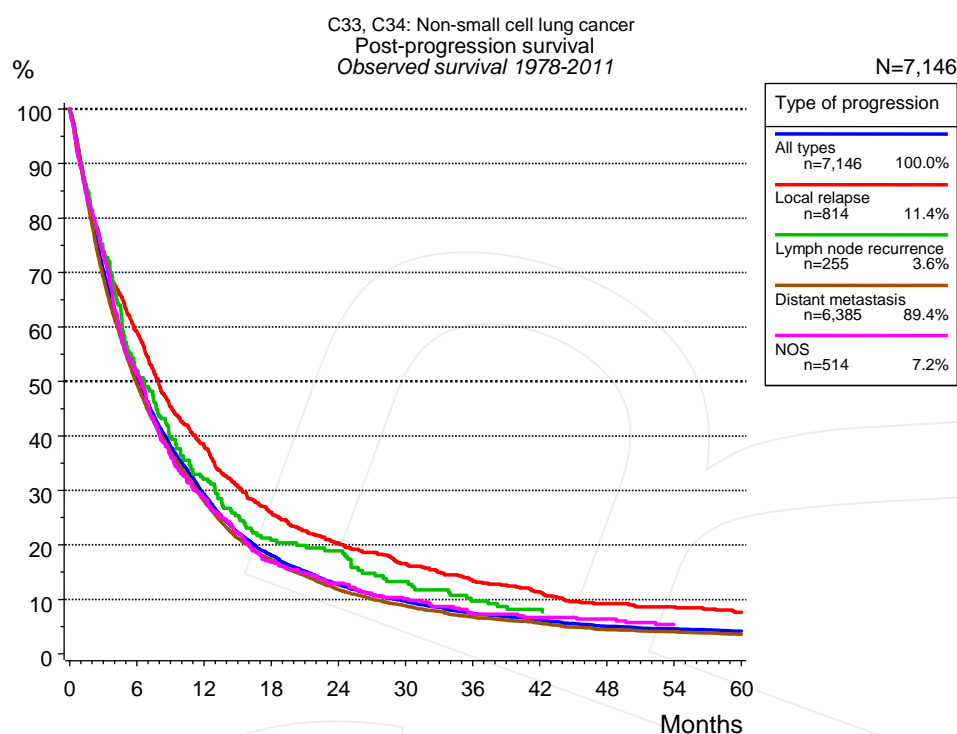


Figure 5a. Observed post-progression survival of 7,146 patients with non-small cell LC diagnosed between 1978 and 2011 (incl. M1). These 7,146 patients with documented progression events during their course of disease represent 52.4% of the totally 13,636 evaluated cases. Patients with cancer relapse documented via death certificates only were excluded (n=2,489, 18.3%). 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=7,146 %	Local relapse n=814 %	Lymph node recurrence n=255 %	Distant metastasis n=6,385 %	NOS n=514 %
0	100.0	100.0	100.0	100.0	100.0
12	29.2	37.9	32.0	28.0	28.3
24	12.7	20.4	18.9	11.8	13.0
36	7.4	13.3	9.7	6.7	7.3
48	5.0	9.2		4.4	6.4
60	4.1	7.6		3.6	5.4

Table 5b. Observed post-progression survival of patients with non-small cell LC for period 1978-2011 (N=7,146).

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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