Munich Cancer Registry

- Incidence and Mortality
- Selection Matrix
- Homepage
- *Deutsch*

ICD-10 C32: Larynx cancer

Survival

Year of diagnosis	1988-1997	1998-2019
Patients	824	2,911
Diseases	824	2,921
Cases evaluated	755	2,171

Creation date	01/27/2021
Database export	01/07/2021
Population	4.92 m

Munich Cancer Registry
Cancer Registry Bavaria - Upper Bavaria Regional Center
at Klinikum Grosshadern/IBE
Marchioninistr. 15
Munich, 81377
Germany

https://www.tumorregister-muenchen.de/en

https://www.tumorregister-muenchen.de/en/facts/surv/sC32__E-ICD-10-C32-Larynx-cancer-survival.pdf

Index of figures and tables

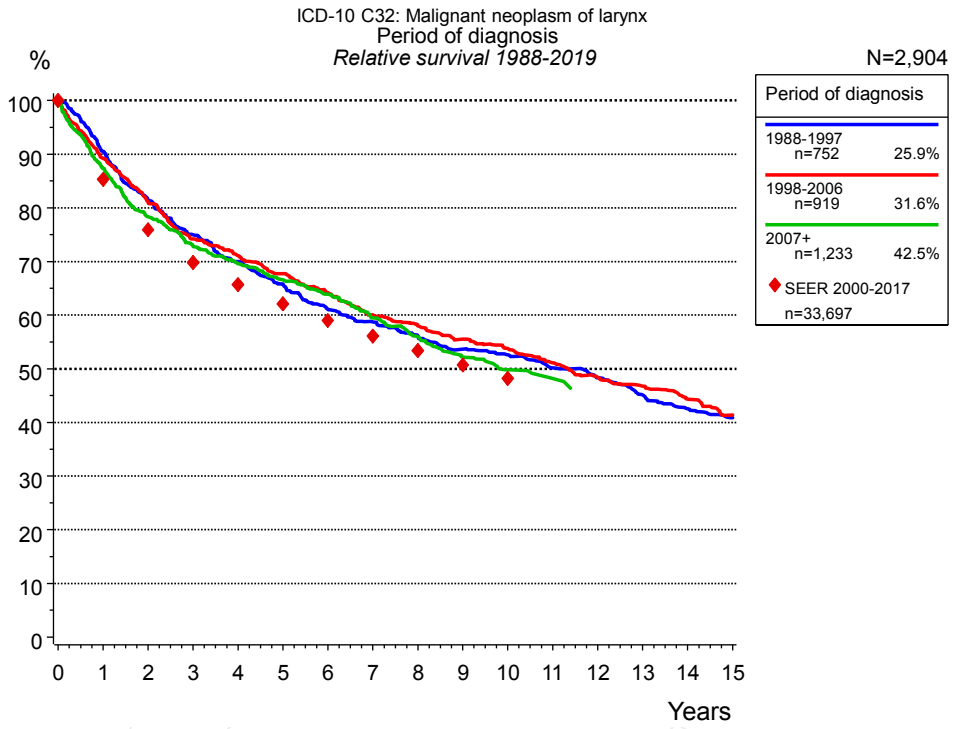

Figure 1a. Relative survival of patients with larynx cancer by period of diagnosis. Included in the evaluation are 2,904 cases diagnosed between 1988 and 2019.

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 2000 to 2017, and are represented by colored 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.

	Period of diagnosis					
	1988-1997 n=752		1998-2006 n=919		2007+ n=1,233	
Years	obs. %	rel. %	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0	100.0	100.0
1	88.4	90.5	87.5	89.2	85.4	87.3
2	77.7	81.5	77.8	81.0	75.1	78.3
3	69.9	75.0	69.9	74.2	68.1	72.8
4	63.6	70.0	65.4	71.1	63.6	69.6
5	58.4	65.8	60.9	67.7	59.5	66.6
6	52.8	61.1	56.4	64.2	55.6	63.9
7	49.4	58.7	51.7	60.1	50.6	59.5
8	46.3	56.1	48.6	58.0	46.4	55.9
9	43.2	53.7	45.4	55.5	42.0	52.2
10	41.3	52.6	42.9	53.8	38.9	49.8
11	38.4	50.2	39.8	51.1	36.6	48.2
12	36.0	48.3	36.8	48.4		
13	32.8	45.1	34.6	46.8		
14	30.1	42.5	31.9	44.4		
15	28.2	40.8	28.9	41.4		
Median	6.6		7.5		7.2	

Table 1b. Observed (obs.) and relative (rel.) survival of patients with larynx cancer by period of diagnosis for period 1988-2019 (N=2,904).

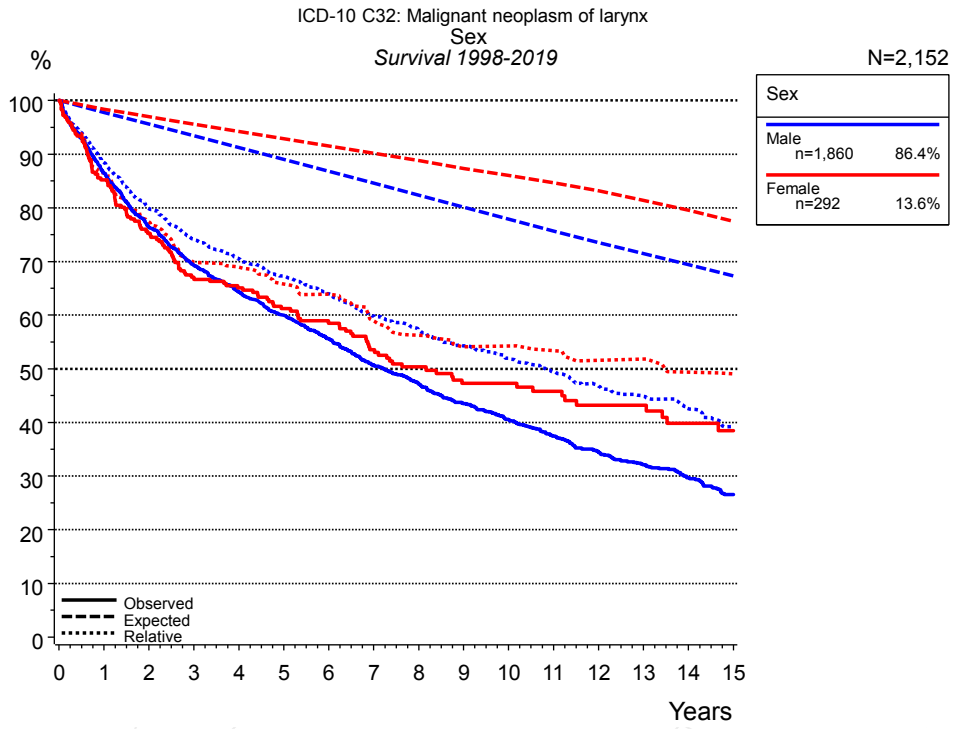

Figure 2a. Survival of patients with larynx cancer by sex. Included in the evaluation are 2,152 cases diagnosed between 1998 and 2019.

	Sex			
	Male n=1,860		Female n=292	
Years	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0
1	86.5	88.4	85.2	86.5
2	76.4	79.8	75.2	77.4
3	69.2	74.0	66.7	69.8
4	64.3	70.4	65.1	69.0
5	60.0	67.3	61.2	65.8
6	55.5	64.0	58.4	63.9
7	50.7	59.8	53.5	58.9
8	47.2	57.2	50.3	56.2
9	43.5	54.3	47.3	54.1
10	40.5	51.9	47.3	54.3
11	37.4	49.4	45.8	53.4
12	34.5	46.8	43.2	51.6
13	32.1	44.8	43.2	51.8
14	29.6	42.6	39.8	49.4
15	26.5	39.2	38.5	49.1
Median	7.2		8.2	

Table 2b. Observed (obs.) and relative (rel.) survival of patients with larynx cancer by sex for period 1998-2019 (N=2,152).

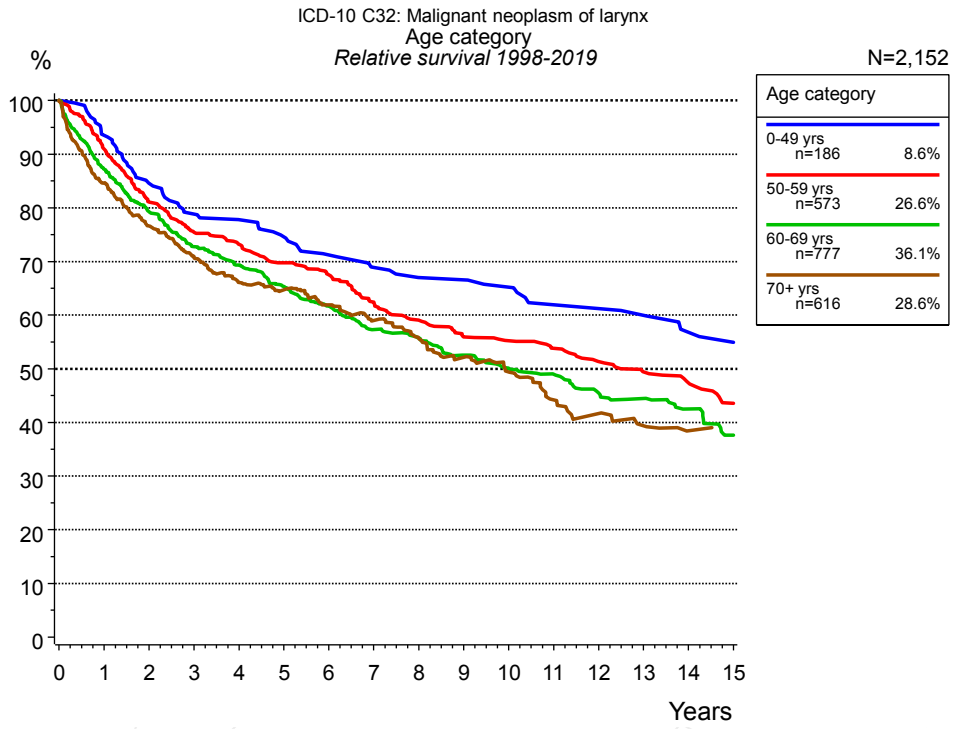

Figure 3a. Relative survival of patients with larynx cancer by age category. Included in the evaluation are 2,152 cases diagnosed between 1998 and 2019.

	Age category							
	0-49 yrs n=186		50-59 yrs n=573		60-69 yrs n=777		70+ yrs n=616	
Years	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	93.5	93.5	90.5	91.0	85.9	87.2	80.6	84.6
2	84.2	84.6	80.1	81.1	76.9	79.3	69.3	76.6
3	78.6	78.8	73.8	75.4	69.3	72.7	60.6	70.7
4	76.9	77.8	71.0	73.2	64.9	69.3	53.4	66.1
5	73.9	74.6	67.1	69.8	60.0	65.3	49.2	64.7
6	70.1	71.2	64.3	67.5	55.4	61.7	43.9	61.9
7	67.4	68.9	59.0	62.4	50.2	57.3	39.1	59.0
8	65.2	67.0	55.0	59.1	47.7	55.7	34.4	55.6
9	65.2	66.6	51.4	55.9	43.6	52.5	29.9	52.1
10	63.5	65.2	50.2	55.2	40.4	50.1	26.1	49.4
11	59.9	62.0	48.2	53.8	38.3	49.0	21.5	44.2
12	58.8	61.2	45.3	51.4	34.6	45.5	18.8	41.6
13	57.7	59.9	42.8	49.4	32.6	44.5	16.1	39.4
14	53.8	56.8	40.5	47.3	29.8	42.5	14.0	38.4
15	52.4	54.9	36.6	43.6	25.3	37.6	13.3	40.6
Median	15.2		10.2		7.2		4.8	

Table 3b. Observed (obs.) and relative (rel.) survival of patients with larynx cancer by age category for period 1998-2019 (N=2,152).

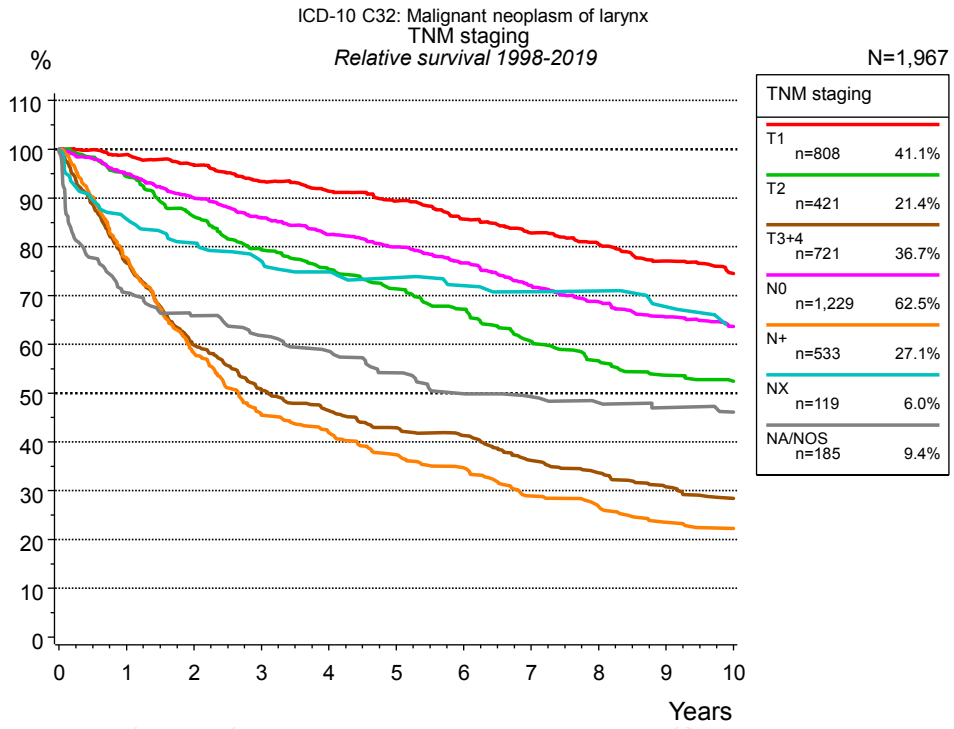

Figure 4a. Relative survival of patients with larynx cancer by TNM staging. For 1,977 of 2,152 cases diagnosed between 1998 and 2019 valid data could be obtained for this item. For a total of 1,967 cases an evaluable classification was established. The accumulated percentage exceeds the 100 % value because patients are potientially considered in more than one subgroup. The grey line represents the subgroup of 185 patients with missing values regarding TNM staging (8.6 % of 2,152 patients, the percent values of all other categories are related to n=1,967).

	TNM staging													
	T1 n=808		T2 n=421		T3+4 n=721		N0 n=1,229		N+ n=533		NX n=119		NA/NOS n=185	
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	96.8	98.9	92.7	94.4	75.2	76.7	92.9	95.0	76.5	77.7	83.7	85.7	68.9	70.6
2	92.4	96.7	83.4	86.2	57.6	59.8	86.1	90.0	56.4	58.2	77.5	80.8	62.5	65.9
3	87.2	93.4	74.9	79.3	47.8	50.6	80.4	85.9	43.2	45.5	72.1	77.0	57.2	61.8
4	83.1	91.4	69.7	75.4	43.1	46.4	75.5	82.5	39.2	41.9	68.4	74.9	53.0	58.6
5	79.2	89.4	65.0	71.4	39.2	42.9	71.6	80.0	34.4	37.4	65.5	73.7	47.5	54.2
6	73.9	85.7	60.0	67.2	36.9	41.3	67.0	76.7	31.2	34.7	62.2	72.0	42.7	49.8
7	69.7	82.9	53.1	60.6	31.8	36.2	61.5	72.1	25.6	28.9	59.9	70.8	40.7	49.3
8	65.8	80.5	48.7	56.7	28.9	33.6	57.1	68.7	23.4	26.8	58.5	71.0	38.6	48.0
9	61.3	77.1	44.8	53.7	25.9	30.8	53.1	65.6	20.0	23.6	54.1	67.7	36.3	47.0
10	57.5	74.6	43.1	52.5	23.7	28.4	50.2	63.7	18.8	22.3	49.1	63.8	34.6	46.1
Median	12.5		7.8		2.8		10.0		2.4		9.9		4.5	

Table 4b. Observed (obs.) and relative (rel.) survival of patients with larynx cancer by TNM staging for period 1998-2019 (N=1,967).

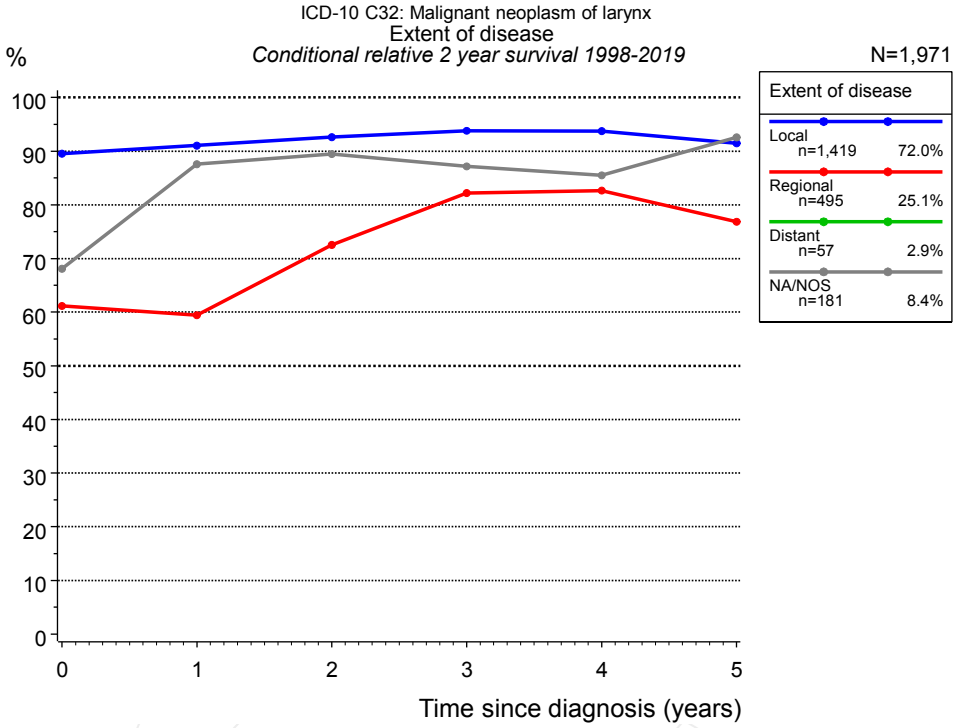

Figure 4c. Conditional relative 2-year survival of patients with larynx cancer by extent of disease. For 1,977 of 2,152 cases diagnosed between 1998 and 2019 valid data could be obtained for this item. For a total of 1,971 cases an evaluable classification was established. The grey line represents the subgroup of 181 patients with missing values regarding extent of disease (8.4 % of 2,152 patients, the percent values of all other categories are related to n=1,971).

	Extent of disease							
	Local		Regional		Distant		NA/NOS	
Years	n	Cond. surv. % 2 yrs	n	Cond. surv. % 2 yrs	n	Cond. surv. % 2 yrs	n	Cond. surv. % 2 yrs
0	1,419	89.5	495	61.2	57		181	68.1
1	1,262	91.0	383	59.4			121	87.6
2	1,126	92.6	274	72.5			108	89.5
3	1,023	93.8	206	82.2			98	87.2
4	920	93.7	179	82.6			90	85.5
5	826	91.5	144	76.9			79	92.6

Table 4d. Conditional relative 2-year survival of patients with larynx cancer by extent of disease for period 1998-2019 (N=1,971).

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 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 extent of disease="Local", who are alive at least 3 years after cancer diagnosis, the conditional relative 2-year survival rate is 93.8% (n=1,023).

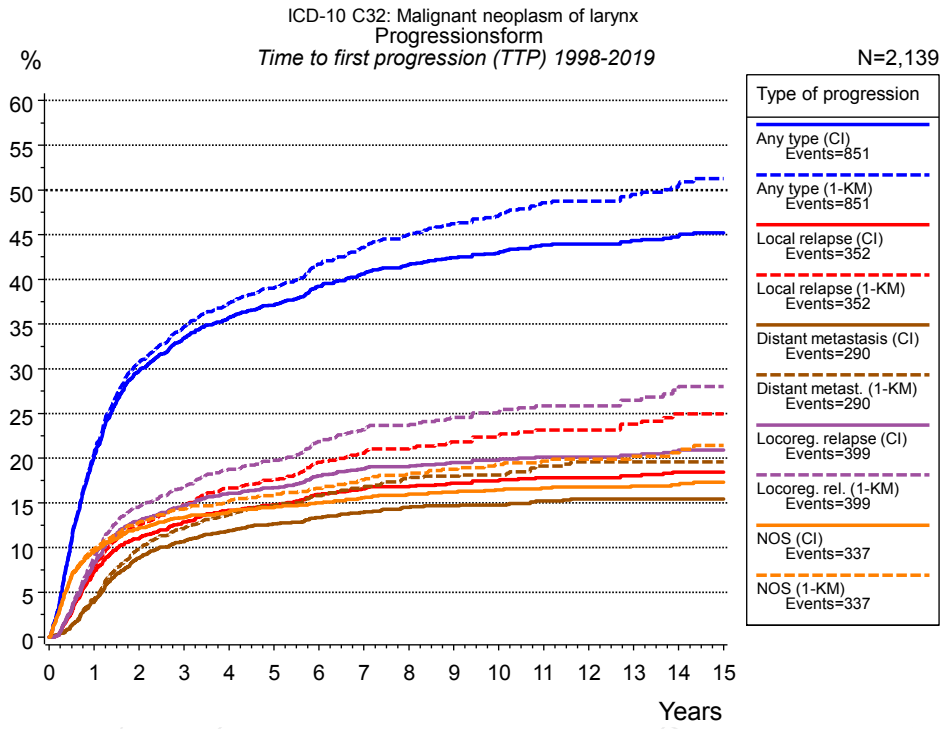

Figure 5a. Time to first progression of 2,139 patients with larynx cancer diagnosed between 1998 and 2019 (in solid cancers M0 only) estimated by cumulative incidence function (CI, solid line) accounting for death as competing risk and by inverse Kaplan-Meier estimate (1-KM, dashed line). The frequency of events may be underestimated due to underreporting.

	Type of progression						
	Any type (CI)	Any type (1-KM)	Local relapse (CI)	Local relapse (1-KM)	Distant metastasis (CI)	Distant metast. (1-KM)	Locoreg. relapse (CI)
N	2,084	2,084	2,139	2,139	2,084	2,084	2,139
Events	847	847	351	351	288	288	398
compet.	494		971		891		939
Years	%	%	%	%	%	%	%
0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1	20.1	20.5	7.3	7.9	3.9	4.2	8.2
2	29.8	30.7	11.0	12.4	8.8	9.8	13.0
3	33.4	34.7	12.9	14.8	10.7	12.1	14.7
4	35.7	37.4	14.2	16.7	11.9	13.7	16.1
5	37.1	39.0	14.8	17.6	12.6	14.7	16.7
6	39.2	41.7	16.0	19.5	13.4	15.8	18.0
7	40.6	43.5	16.5	20.6	13.9	16.7	18.8
8	41.6	45.0	16.8	21.1	14.5	17.7	19.1
9	42.4	46.2	17.2	21.8	14.7	18.0	19.5
10	43.0	47.2	17.5	22.5	14.7	18.1	19.8
11	43.8	48.6	17.8	23.2	15.2	19.1	20.1
12	43.9	48.7	17.8	23.2	15.4	19.6	20.1
13	44.3	49.5	18.0	23.8	15.4	19.6	20.3
14	44.9	50.6	18.4	24.9	15.4	19.6	20.9
15	45.2	51.3	18.4	24.9	15.4	19.6	20.9

Type of progression			
cont'd	Locoreg. rel. (1-KM)	NOS (CI)	NOS (1-KM)
N	2,139	2,139	2,139
Events	398	335	335
compet.		902	
Years	%	%	%
0	0.0	0.0	0.0
1	8.9	9.6	9.9
2	14.6	12.2	12.8
3	16.9	13.4	14.3
4	18.7	14.0	15.2
5	19.7	14.5	15.8
6	21.9	15.0	16.6
7	23.2	15.6	17.6
8	23.7	16.0	18.3
9	24.6	16.2	18.8
10	25.2	16.5	19.3
11	25.9	16.7	19.7
12	25.9	16.8	19.9
13	26.5	16.9	20.2
14	28.0	17.0	20.6
15	28.0	17.3	21.4

Table 5b. Time to first progression of patients with larynx cancer for period 1998-2019 (N=2,139), also showing the total of progression events (Events) and of deaths as competing risk (compet.).

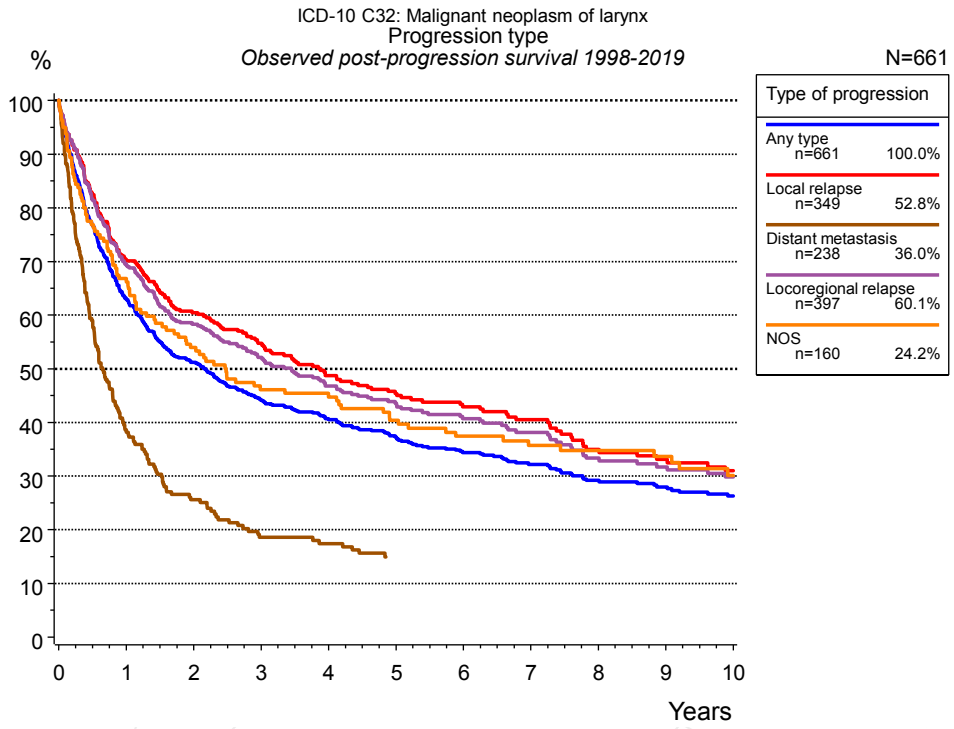

Figure 5c. Observed post-progression survival of 661 patients with larynx cancer diagnosed between 1998 and 2019. These 661 patients with documented progression events during their course of disease represent 30.9 % of the totally 2,139 evaluated cases (incl. M1, n=55, 2.6 %). Patients with cancer relapse documented via death certificates only were excluded (n=245, 11.5 %). Multiple progression types on different sites are included in the evaluation even when not occuring 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 “Any type” 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				
	Any type	Local relapse	Distant metastasis	Locoregional relapse	NOS
	n=661	n=349	n=238	n=397	n=160
Years	%	%	%	%	%
0	100.0	100.0	100.0	100.0	100.0
1	63.2	70.4	38.6	69.5	66.8
2	51.2	60.4	25.6	58.3	53.9
3	44.2	54.7	18.6	52.1	46.1
4	40.5	48.7	17.4	46.8	44.7
5	37.3	45.4	14.9	43.6	40.4
6	34.4	42.9		40.7	37.4
7	32.2	40.5		38.2	35.7
8	29.2	34.9		33.3	34.8
9	28.0	33.1		31.7	33.7
10	26.3	31.0		29.8	30.1

Table 5d. Observed post-progression survival of patients with larynx cancer for period 1998-2019 (N=661).

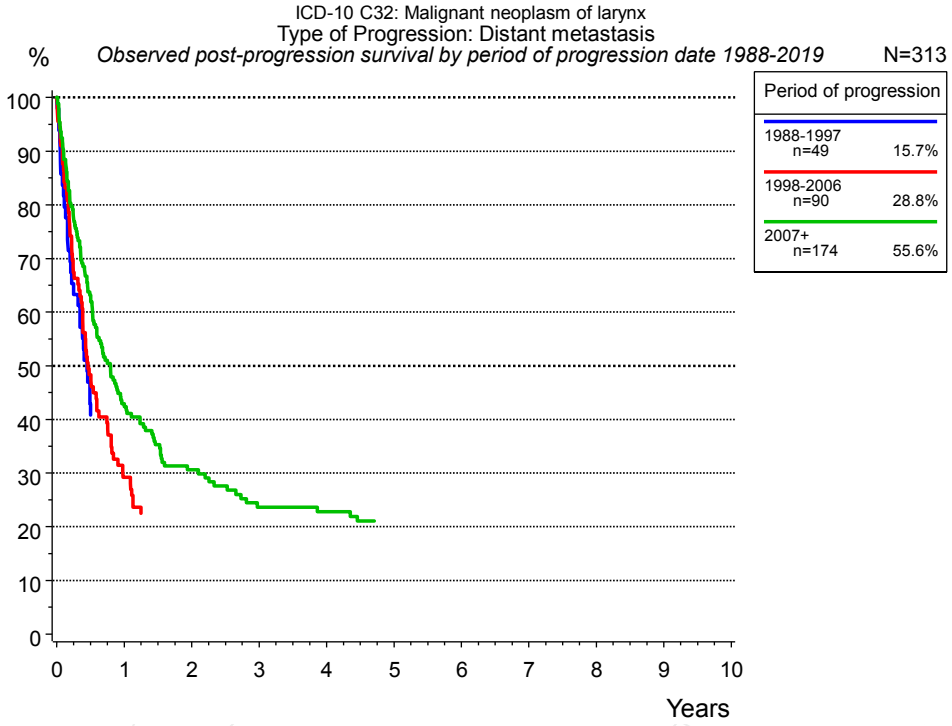

Figure 5e. Observed post-progression (distant metastasis) survival of 313 patients with larynx cancer diagnosed between 1988 and 2019 by period of progression.

	Period of progression		
	1988-1997 n=49	1998-2006 n=90	2007+ n=174
Years	%	%	%
0	100.0	100.0	100.0
1		29.2	43.0
2			30.6
3			23.7
4			22.8

Table 5f. Observed post-progression (distant metastasis) survival of patients with larynx cancer for period 1988-2019 by period of progression (N=313).

Shortcuts

MCR	Munich Cancer Registry, Germany	
NCI	National Cancer Institute, USA	
SEER	Surveillance, Epidemiology, and End Results, USA	
UICC	Union for International Cancer Control, Geneva	
DCO	Death certificate only	Death certificate provides the only notification to the registry.
NA	Not available	
NOS	Not otherwise specified	
OS	Overall/Observed survival	Overall/Observed survival (Kaplan-Meier estimate) Date of entry: diagnosis Event: death from any cause
RS	Relative survival	Survival compared to “general population”, ratio of observed to expected survival (Ederer II method), reflecting cancer specific survival
AS	Assembled survival	Assembled chart of observed, expected, relative survival
CS	Conditional survival	Survival probability under the condition of surviving a given period of time
TTP	Time to progression	Time to first progression / relapse Date of entry: diagnosis Event: (progression / relapse): first local-, lymph node recurrence, distant metastasis or unspecified progression
	1-KM	1 minus Kaplan-Meier estimator (“inverse” Kaplan-Meier estimator)
	CI	Cumulative incidence Death as competing risk (according to Kalbfleisch und Prentice)
PPS	Post-progression survival	Survival since first progression / relapse (Kaplan-Meier estimate) Date of entry (progression / relapse): first local-, lymph node recurrence, distant metastasis or unspecified progression Event: death from any cause

Recommended Citation

Munich Cancer Registry. Survival ICD-10 C32: Larynx cancer [Internet]. 2021 [updated 2021 Jan 27; cited 2021 Mar 1]. Available from: https://www.tumorregister-muenchen.de/en/facts/surv/sC32__E-ICD-10-C32-Larynx-cancer-survival.pdf

Copyright

The content of the public web site provided by the Munich Cancer Registry is available worldwide and free of charge. All documents are free to download, utilize, copy, print-out and distribute, providing that the MCR is referenced.

Disclaimer

The Munich Cancer Registry reserves the right to not be responsible for the topicality, correctness, completeness or quality of the information provided. Liability claims regarding damage caused by the use of any information provided, including any kind of information which is incomplete or incorrect, will therefore be rejected.