Munich Cancer Registry

ICD-10 C03: Gum cancer

Survival

Year of diagnosis	1988-1997	1998-2014
Patients	96	385
Diseases	96	386
Cases evaluated	85	307
Creation date	04/11/2016	
Export date	12/23/2015	
Population	4.64 m	

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

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

ICD-10 C03: Malignant neoplasm of gum
Period of diagnosis
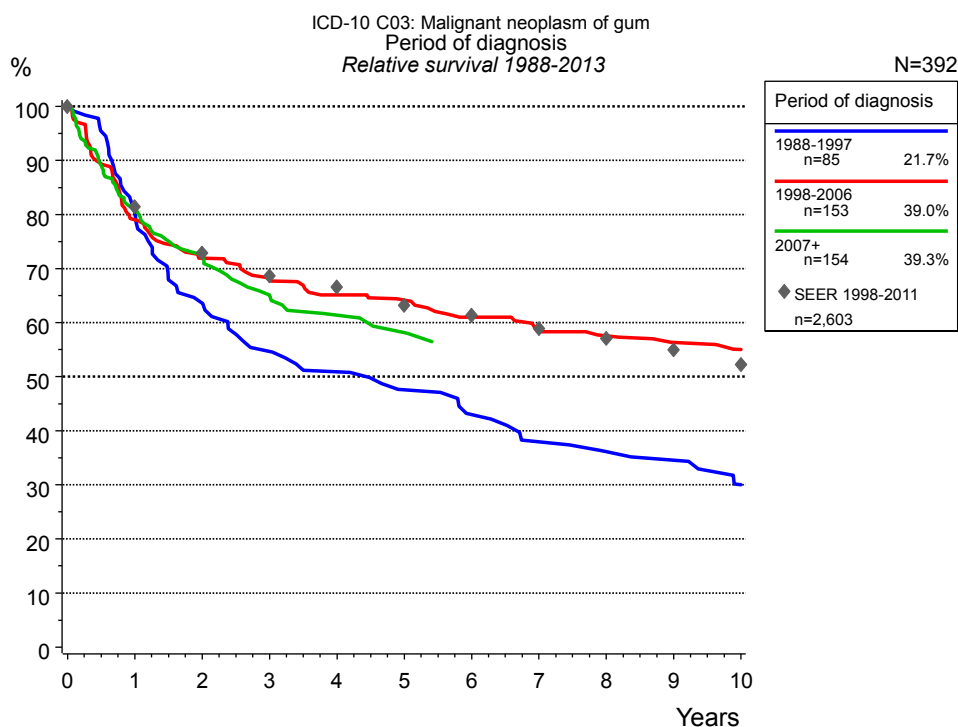*Relative survival 1988-2013*

N=392

Figure 1a. Relative survival of patients with gum cancer by period of diagnosis. Included in the evaluation are 392 cases diagnosed between 1988 and 2013.

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=85		1998-2006 n=153		2007+ n=154	
Years	obs. %	rel. %	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0	100.0	100.0
1	78.6	80.1	77.4	79.0	79.1	81.0
2	61.6	63.6	68.6	71.9	68.7	72.5
3	51.7	54.6	63.8	67.8	61.1	65.1
4	46.8	50.9	59.6	65.1	55.9	61.4
5	41.9	47.6	57.5	64.2	52.9	58.2
6	36.9	43.0	53.4	61.0	49.2	55.1
7	32.0	38.0	49.8	58.3		
8	29.6	36.1	48.4	57.6		
9	28.3	34.6	46.0	56.3		
10	23.4	30.0	44.1	55.0		

Table 1b. Observed (obs.) and relative (rel.) survival of patients with gum cancer by period of diagnosis for period 1988-2013 (N=392).

ICD-10 C03: Malignant neoplasm of gum
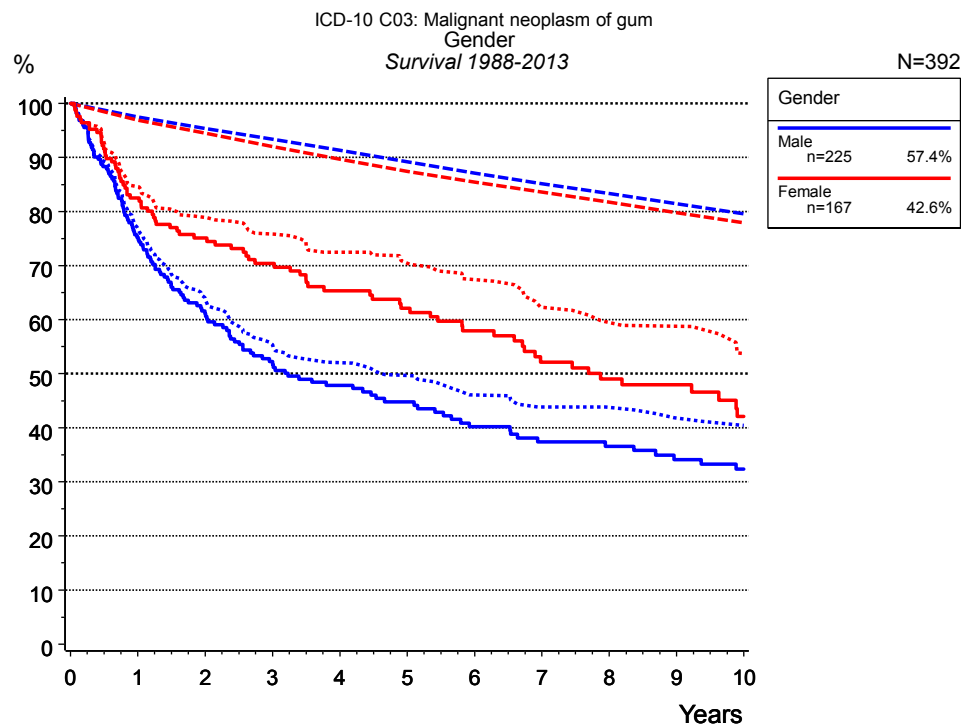Gender
Survival 1988-2013

Figure 2a. Survival of patients with gum cancer by gender. Included in the evaluation are 392 cases diagnosed between 1988 and 2013.

| Years | Gender | | | |
| | Male n=225 | | Female n=167 | |
	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0
1	75.2	76.8	82.5	84.6
2	61.1	63.8	75.1	78.9
3	52.2	55.4	70.4	75.8
4	47.9	52.1	65.4	72.5
5	44.8	49.7	62.1	70.4
6	40.2	46.1	58.0	67.4
7	37.4	43.9	52.1	62.3
8	36.6	43.8	49.0	59.5
9	34.1	41.8	48.0	58.8
10	32.4	40.5	42.1	53.7

Table 2b. Observed (obs.) and relative (rel.) survival of patients with gum cancer by gender for period 1988-2013 (N=392).

ICD-10 C03: Malignant neoplasm of gum
Age category
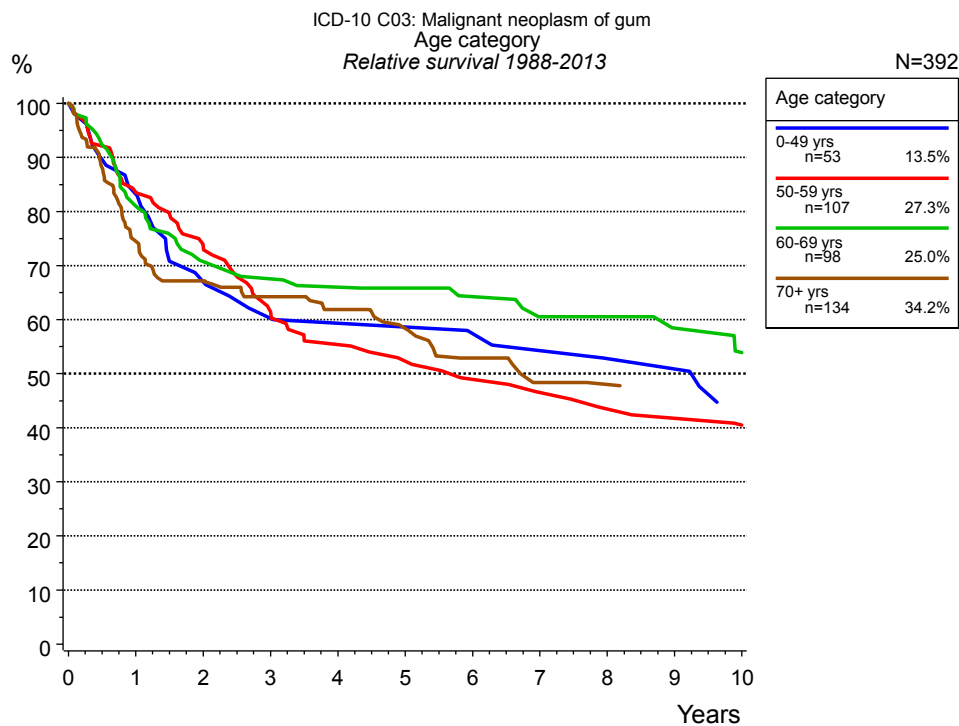*Relative survival 1988-2013*

Figure 3a. Relative survival of patients with gum cancer by age category. Included in the evaluation are 392 cases diagnosed between 1988 and 2013.

| | Age category | | | | | | | |
| | 0-49 yrs n=53 | | 50-59 yrs n=107 | | 60-69 yrs n=98 | | 70+ yrs n=134 | |
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	84.6	83.2	83.8	83.5	80.6	81.0	69.9	74.5
2	68.3	67.0	73.0	73.5	69.1	70.8	60.6	67.2
3	61.7	60.2	61.3	61.5	65.6	67.6	54.6	64.3
4	59.5	59.3	54.7	55.4	63.2	66.0	48.7	61.9
5	59.5	58.7	51.1	52.3	61.8	65.8	43.0	58.4
6	57.0	57.4	47.2	49.0	59.0	64.3	36.1	52.9
7	54.3	54.3	44.2	46.5	54.2	60.6	30.5	48.4
8	51.6	52.8	41.2	43.5	54.2	60.5	29.0	48.0
9	51.6	50.9	39.6	41.8	50.1	58.4	27.4	47.8
10	43.3	44.0	37.5	40.5	45.4	53.9	27.4	47.8

Table 3b. Observed (obs.) and relative (rel.) survival of patients with gum cancer by age category for period 1988-2013 (N=392).

ICD-10 C03: Malignant neoplasm of gum
TNM staging
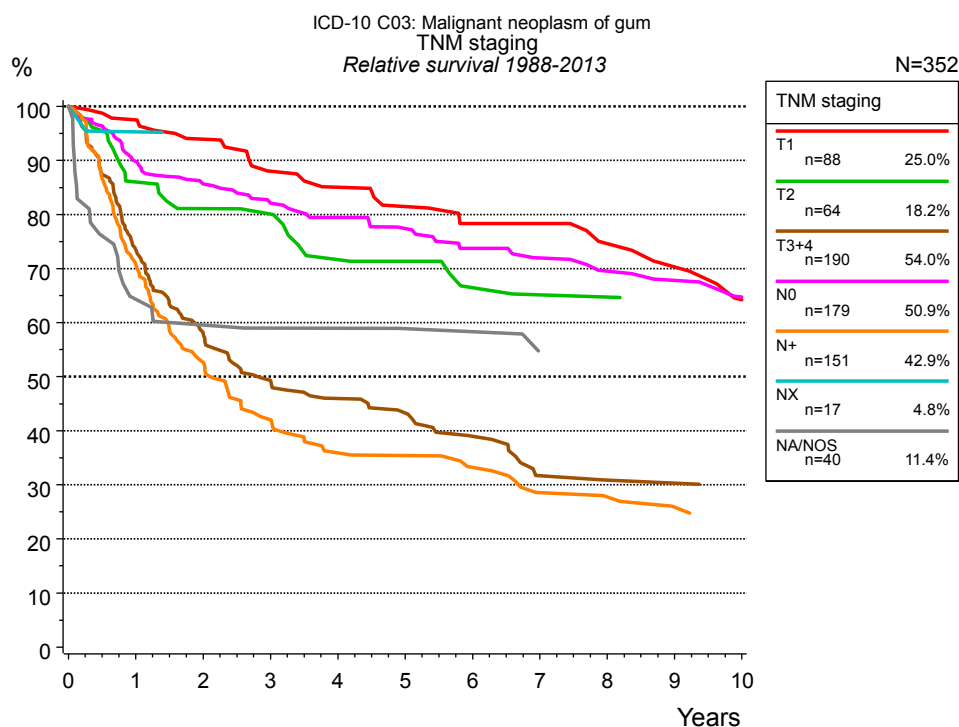*Relative survival 1988-2013*

Figure 4a. Relative survival of patients with gum cancer by TNM staging. For 354 of 392 cases diagnosed between 1988 and 2013 valid data could be obtained for this item. For a total of 352 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 40 patients with missing values regarding TNM staging (10.2 % of 392 patients, the percent values of all other categories are related to n=352).

	TNM staging												
	T1 n=88		T2 n=64		T3+4 n=190		N0 n=179		N+ n=151		NX n=17		NA/NOS n=40	
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	96.5	97.5	84.1	86.0	71.9	73.5	87.6	89.8	69.9	70.8	94.1	95.3	62.5	64.3
2	90.5	93.9	77.6	81.1	55.4	58.0	81.1	85.7	51.4	52.6			57.5	59.6
3	82.5	88.0	75.7	80.1	46.4	49.4	76.4	82.1	40.5	42.0			54.8	59.0
4	78.3	85.0	66.0	71.6	41.8	46.0	72.2	79.5	33.9	35.9			54.8	59.0
5	73.6	81.5	64.0	71.3	38.7	43.3	68.2	77.4	33.0	35.4			51.9	58.9
6	68.7	78.4	57.6	66.5	33.7	39.0	63.3	73.7	30.1	33.2			51.9	58.3
7	68.7	78.4	55.1	65.1	26.7	31.7	60.3	72.0	25.2	28.5			46.1	54.8
8	63.1	74.6	55.1	64.7	25.6	30.9	57.0	69.5	24.2	27.7			46.1	54.7
9	59.0	70.3	52.0	64.6	25.6	30.3	54.7	67.8	22.0	25.9			46.1	54.7
10	52.1	64.2	52.0	64.5			50.6	64.8						

Table 4b. Observed (obs.) and relative (rel.) survival of patients with gum cancer by TNM staging for period 1988-2013 (N=352).

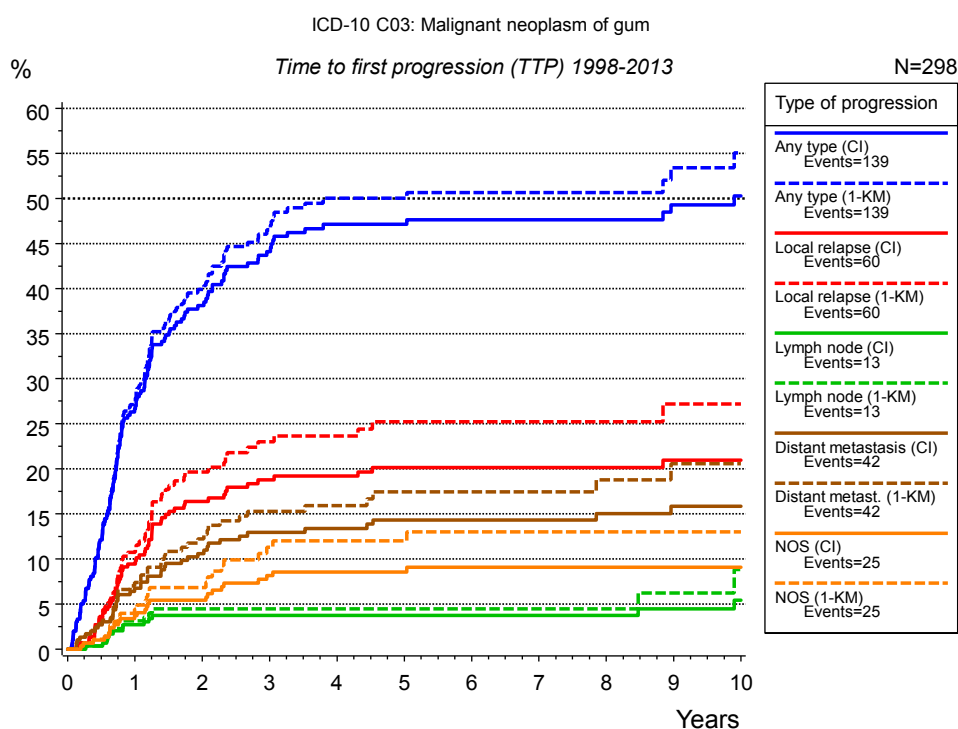ICD-10 C03: Malignant neoplasm of gum

Figure 5a. Time to first progression of 298 patients with gum cancer diagnosed between 1998 and 2013 (M0 only in solid cancers) 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)	Lymph node (CI)	Lymph node (1-KM)	Distant metastasis (CI)
	n=298	n=298	n=298	n=298	n=298	n=298	n=298
Years	%	%	%	%	%	%	%
0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1	26.7	27.5	9.5	10.7	2.7	3.1	6.7
2	38.1	39.9	16.4	19.6	3.7	4.5	10.6
3	44.1	46.5	18.8	23.0	3.7	4.5	12.9
4	47.1	50.0	19.2	23.6	3.7	4.5	13.4
5	47.1	50.0	20.2	25.2	3.7	4.5	14.4
6	47.6	50.7	20.2	25.2	3.7	4.5	14.4
7	47.6	50.7	20.2	25.2	3.7	4.5	14.4
8	47.6	50.7	20.2	25.2	3.7	4.5	15.0
9	49.3	53.4	21.0	27.2	4.5	6.2	15.9
10	50.3	55.1	21.0	27.2	5.4	8.8	15.9

cont'd	Type of progression		
	Distant metast. (1-KM)	NOS (CI)	NOS (1-KM)
	n=298	n=298	n=298
Years	%	%	%
0	0.0	0.0	0.0
1	7.4	3.7	4.4
2	12.2	5.4	6.8
3	15.3	8.2	11.3
4	15.9	8.6	12.0
5	17.4	8.6	12.0
6	17.4	9.1	13.0
7	17.4	9.1	13.0
8	18.8	9.1	13.0
9	20.6	9.1	13.0
10	20.6	9.1	13.0

Table 5b. Time to first progression of patients with gum cancer for period 1998-2013 (N=298).

ICD-10 C03: Malignant neoplasm of gum
Progression type
Observed post-progression survival 1998-2013
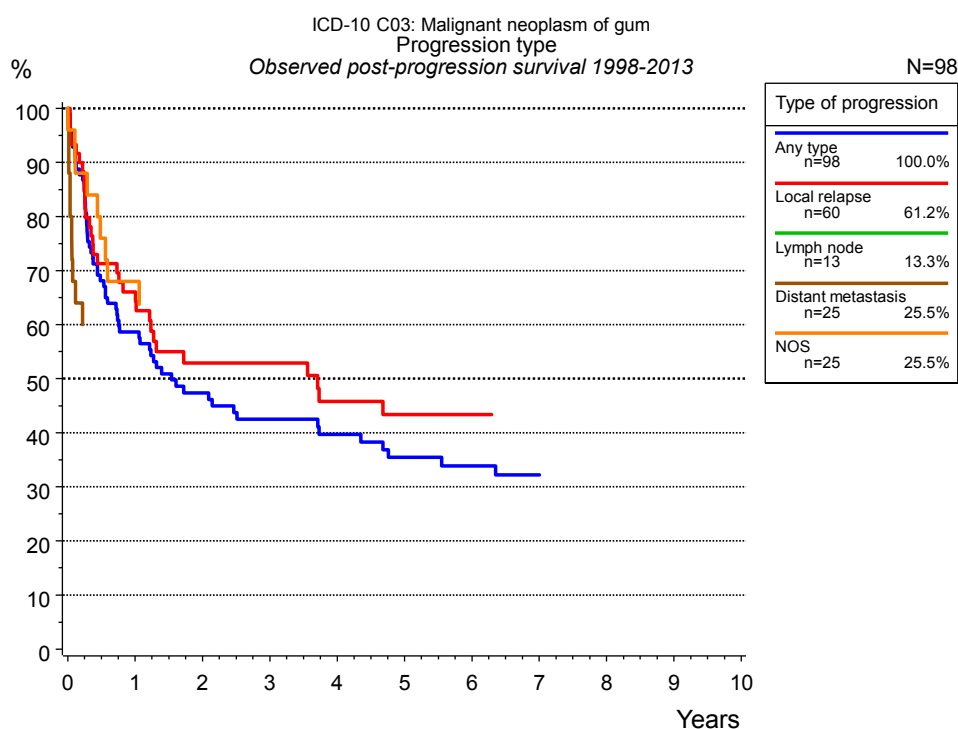
Figure 5c. Observed post-progression survival of 98 patients with gum cancer diagnosed between 1998 and 2013. These 98 patients with documented progression events during their course of disease represent 32.1 % of the totally 305 evaluated cases (incl. M1, n=7, 2.3 %). Patients with cancer relapse documented via death certificates only were excluded (n=48, 15.7 %). 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. Subgroups with sample size <15 are dropped from the chart.

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				
Years	Any type n=98 %	Local relapse n=60 %	Lymph node n=13 %	Distant metastasis n=25 %	NOS n=25 %
0	100.0	100.0	100.0	100.0	100.0
1	58.7	66.1			68.0
2	47.4	52.9			
3	42.5	52.9			
4	39.7	45.8			
5	35.4	43.4			
6	33.9	43.4			
7	32.2	43.4			

Table 5d. Observed post-progression survival of patients with gum cancer for period 1998-2013 (N=98).

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

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