

Munich Cancer Registry



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ICD-10 C30, C31: Nasal cavity, middle ear, sinuses cancer

Survival

Year of diagnosis	1988-1997	1998-2020
Patients	141	811
Diseases	141	818
Cases evaluated	124	646
Creation date	04/15/2022	
Database export	12/20/2021	
Population	4.92 m	



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

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

<https://www.tumorregister-muenchen.de/en/facts/surv/sC3031E-ICD-10-C30-C31-Nasal-cavity-middle-ear-sinuses-cancer-survival.pdf>

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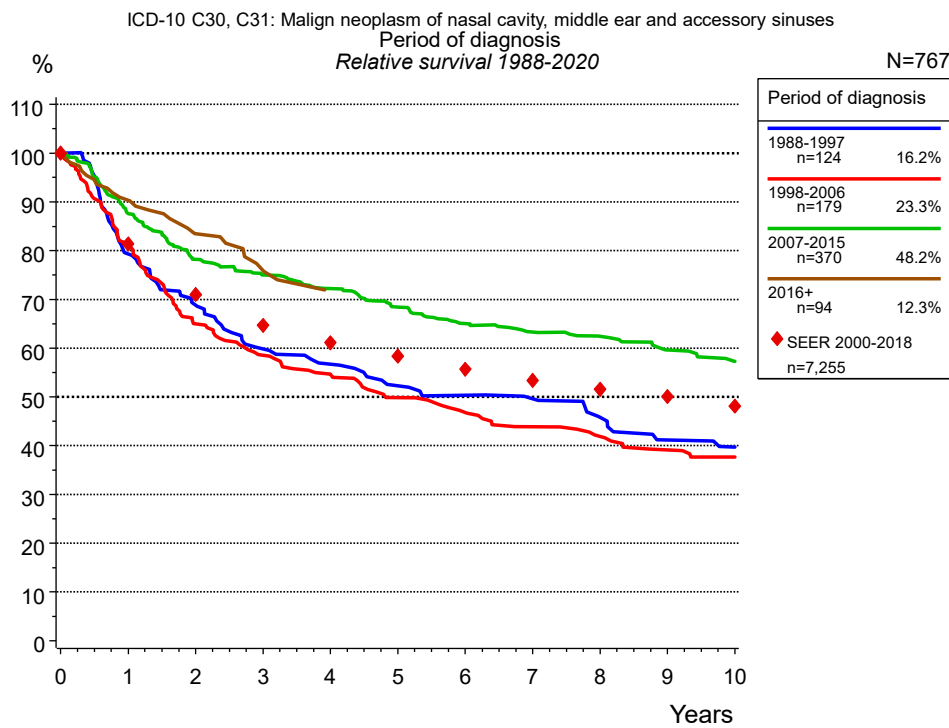


Figure 1a. Relative survival of patients with nasal cavity, middle ear, sinuses cancer by period of diagnosis. Included in the evaluation are 767 cases diagnosed between 1988 and 2020.

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 2018, 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.

Years	Period of diagnosis							
	1988-1997 n=124		1998-2006 n=179		2007-2015 n=370		2016+ n=94	
	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	77.4	79.4	79.3	81.3	85.5	87.6	89.2	90.3
2	65.5	68.8	61.3	65.0	74.7	78.2	79.9	83.5
3	55.2	59.9	54.0	58.6	70.0	75.0	72.4	75.9
4	50.9	56.7	49.5	54.6	66.1	72.2		
5	45.7	52.3	43.8	49.9	61.3	68.4		
6	43.0	50.4	40.3	46.8	57.1	65.1		
7	41.3	49.7	36.9	43.9	54.4	63.3		
8	36.8	45.8	34.5	41.9	52.5	62.4		
9	32.3	41.2	31.6	39.2	49.2	59.7		
10	30.5	39.8	29.8	37.7	46.4	57.3		
Median	4.4		3.8		8.9			

Table 1b. Observed (obs.) and relative (rel.) survival of patients with nasal cavity, middle ear, sinuses cancer by period of diagnosis for period 1988-2020 (N=767).

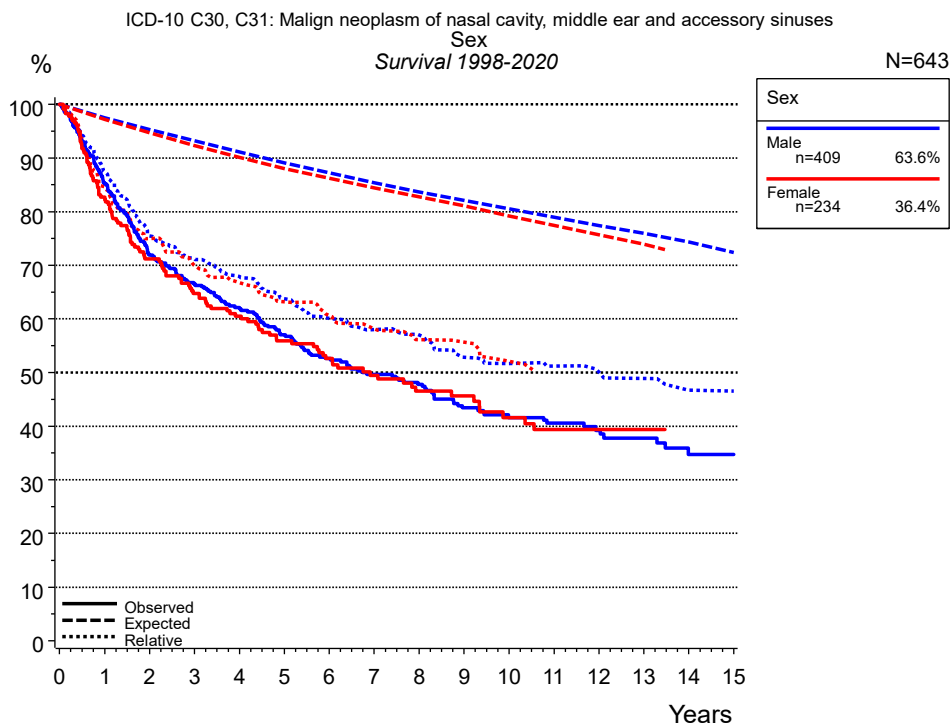


Figure 2a. Survival of patients with nasal cavity, middle ear, sinuses cancer by sex. Included in the evaluation are 643 cases diagnosed between 1998 and 2020.

Years	Sex			
	Male n=409		Female n=234	
	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0
1	85.2	87.4	82.7	84.6
2	71.9	75.5	71.2	75.0
3	66.5	71.2	64.8	69.9
4	62.2	67.9	60.5	66.8
5	57.1	63.8	55.9	63.2
6	52.6	60.1	52.6	60.6
7	49.6	58.0	49.5	58.2
8	47.8	57.0	46.5	56.1
9	43.4	52.8	45.7	55.7
10	41.6	51.7	41.6	52.1
11	40.6	51.2	39.4	50.5
12	39.2	50.1	39.4	50.9
13	37.8	48.9	39.4	51.3
14	34.8	46.8		
15	34.8	46.6		
Median	6.7		6.9	

Table 2b. Observed (obs.) and relative (rel.) survival of patients with nasal cavity, middle ear, sinuses cancer by sex for period 1998-2020 (N=643).

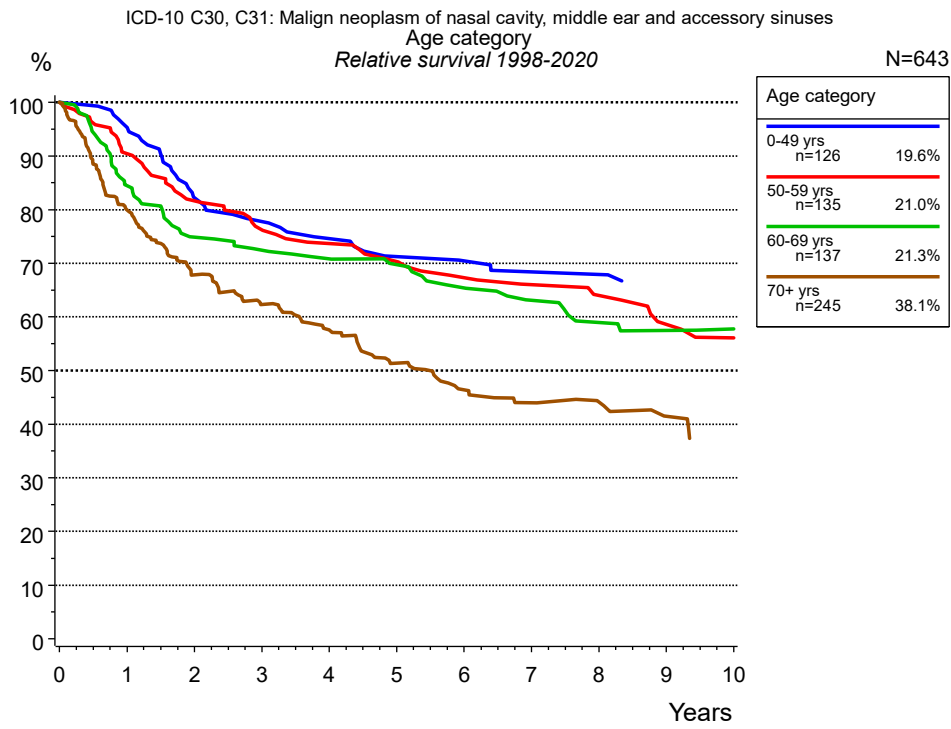


Figure 3a. Relative survival of patients with nasal cavity, middle ear, sinuses cancer by age category. Included in the evaluation are 643 cases diagnosed between 1998 and 2020.

Years	Age category							
	0-49 yrs n=126		50-59 yrs n=135		60-69 yrs n=137		70+ yrs n=245	
	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	95.1	95.3	90.3	90.5	83.6	84.5	75.8	80.0
2	82.1	82.2	81.1	81.6	73.0	74.9	60.4	67.8
3	78.0	77.8	75.5	76.2	69.9	72.4	52.2	62.3
4	74.4	74.6	72.2	73.7	67.5	70.8	45.7	57.6
5	70.8	71.3	68.8	70.3	65.0	69.7	37.9	51.3
6	69.8	70.5	65.1	67.3	60.4	65.4	32.2	46.4
7	67.8	68.4	62.9	66.0	56.4	63.1	28.6	44.0
8	67.8	67.9	60.5	64.0	52.0	58.9	26.4	44.1
9			55.2	58.6	49.6	57.5	22.8	41.5
10			52.1	56.1	48.3	57.7		
Median			12.1		8.3		3.3	

Table 3b. Observed (obs.) and relative (rel.) survival of patients with nasal cavity, middle ear, sinuses cancer by age category for period 1998-2020 (N=643).

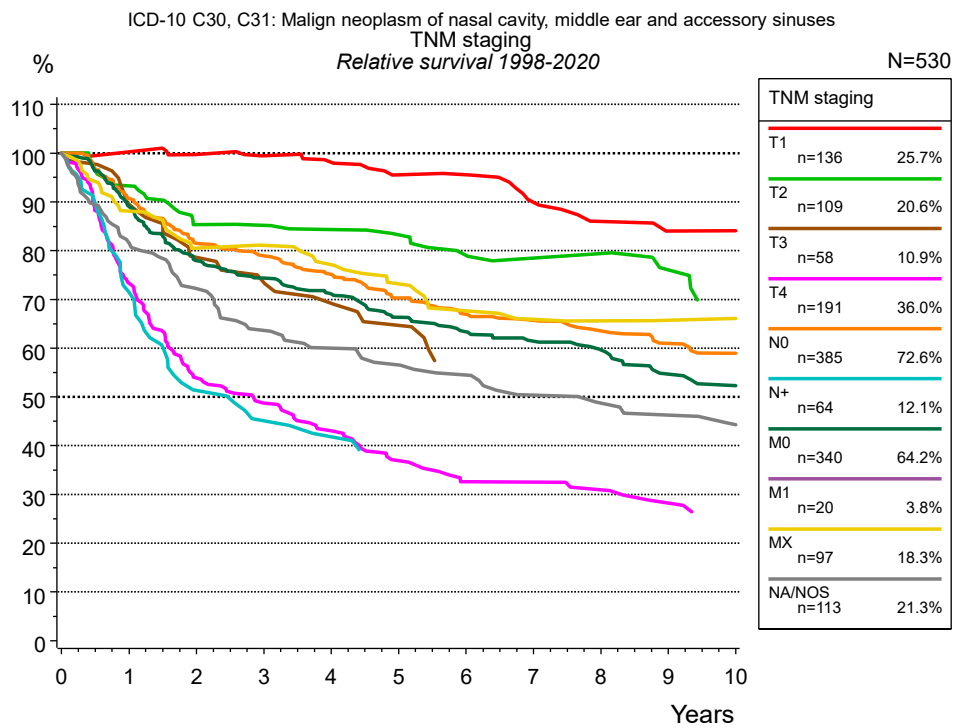


Figure 4a. Relative survival of patients with nasal cavity, middle ear, sinuses cancer by TNM staging. For 531 of 643 cases diagnosed between 1998 and 2020 valid data could be obtained for this item. For a total of 530 cases an evaluable classification was established. The accumulated percentage exceeds the 100 % value because patients are potentially considered in more than one subgroup. The grey line represents the subgroup of 113 patients with missing values regarding TNM staging (17.6 % of 643 patients, the percent values of all other categories are related to n=530).

Years	TNM staging													
	T1 n=136		T2 n=109		T3 n=58		T4 n=191		N0 n=385		N+ n=64		M0 n=340	
	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	98.5	100.3	91.7	93.3	87.9	89.5	71.9	73.3	88.6	90.7	70.3	71.4	86.9	89.1
2	95.4	99.8	81.4	85.3	75.6	78.7	51.9	53.9	77.8	81.5	50.0	51.4	74.4	78.0
3	92.9	99.4	80.4	85.2	70.1	73.5	45.9	48.8	73.9	78.9	43.6	45.1	69.6	74.3
4	90.3	98.0	77.2	84.3	64.4	69.2	40.3	43.1	68.8	75.2	40.1	41.8	65.1	71.2
5	85.5	95.5	75.0	83.3	58.4	64.7	33.7	36.9	62.9	70.3	36.5	38.0	59.3	66.4
6	84.5	95.6	70.3	79.1	49.8	56.4	29.0	32.6	58.8	66.9			55.6	63.3
7	77.7	89.9	67.6	78.5			29.0	32.6	56.5	65.7			52.8	61.5
8	72.5	86.0	67.6	79.4			27.3	31.0	53.4	63.5			50.1	59.7
9	69.3	84.0	62.3	76.1			24.4	28.2	50.4	61.0			45.1	54.7
10	69.3	84.0	56.1	70.2					47.5	58.9			42.0	52.4
Median	17.6				5.5		2.4		9.2		2.2		8.1	

<i>cont'd</i>	TNM staging					
	M1 n=20		MX n=97		NA/NOS n=113	
	obs. %	rel. %	obs. %	rel. %	obs. %	rel. %
Years						
0	100.0	100.0	100.0	100.0	100.0	100.0
1			86.5	88.1	79.6	81.7
2			77.1	80.6	67.9	72.2
3			76.0	81.1	58.8	63.6
4			71.6	77.2	54.2	60.0
5			66.1	73.2	50.4	56.5
6			59.5	67.7	47.6	54.5
7			57.1	65.9	42.8	50.4
8			55.8	65.6	40.7	48.7
9			54.4	65.7	38.6	46.3
10			54.4	66.1	36.1	44.3
Median			11.9		5.0	

Table 4b. Observed (obs.) and relative (rel.) survival of patients with nasal cavity, middle ear, sinuses cancer by TNM staging for period 1998-2020 (N=530).

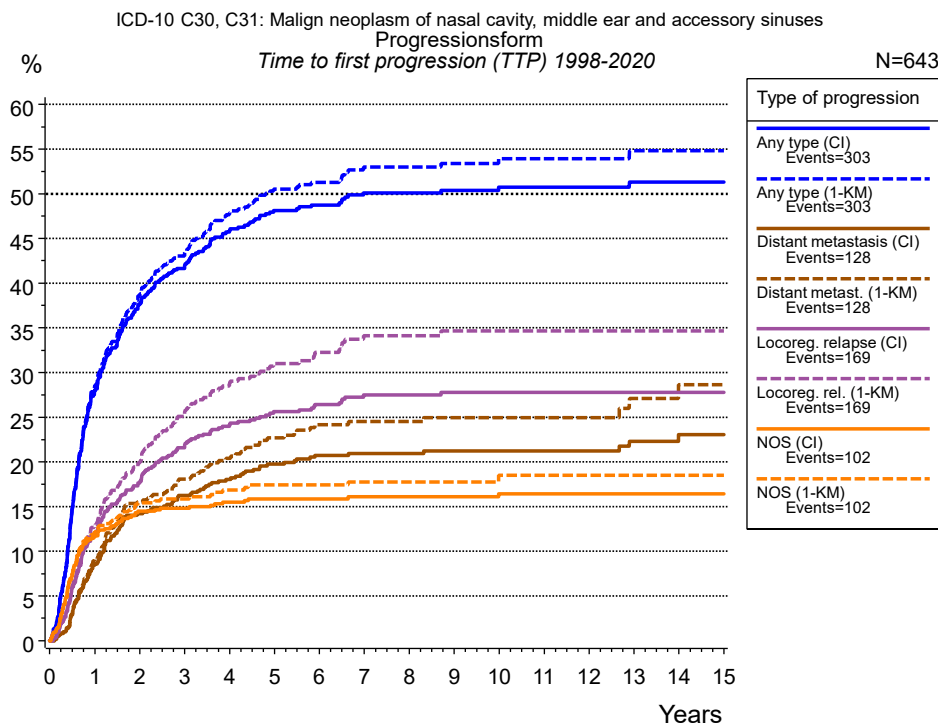


Figure 5a. Time to first progression of 643 patients with nasal cavity, middle ear, sinuses cancer diagnosed between 1998 and 2020 (in solid cancers M0 only) estimated by cumulative incidence function (CI, solid line) accounting for death as competing risk and by inverse Kaplan-Meier estimate (1-KM, dashed line). The frequency of events may be underestimated due to underreporting.

	Type of progression						
	Any type (CI)	Any type (1-KM)	Distant metastasis (CI)	Distant metast. (1-KM)	Locoreg. relapse (CI)	Locoreg. rel. (1-KM)	NOS (CI)
N	623	623	623	623	643	643	643
Events	303	303	128	128	169	169	102
compet.	103		214		234		264
Years	%	%	%	%	%	%	%
0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1	28.0	28.5	8.6	9.1	11.9	12.9	11.8
2	37.8	38.8	14.2	15.5	17.8	20.1	14.5
3	41.8	43.2	16.3	18.1	21.8	25.3	14.8
4	45.9	47.9	18.1	20.4	24.2	28.8	15.5
5	48.1	50.5	19.7	22.7	25.6	31.0	15.9
6	48.8	51.3	20.8	24.2	26.4	32.3	15.9
7	50.1	53.0	21.0	24.5	27.5	34.1	16.1
8	50.1	53.0	21.0	24.5	27.5	34.1	16.1
9	50.4	53.4	21.2	25.0	27.8	34.6	16.1
10	50.7	53.9	21.2	25.0	27.8	34.6	16.4
11	50.7	53.9	21.2	25.0	27.8	34.6	16.4
12	50.7	53.9	21.2	25.0	27.8	34.6	16.4
13	51.3	54.8	22.3	27.1	27.8	34.6	16.4
14	51.3	54.8	23.1	28.7	27.8	34.6	16.4
15	51.3	54.8	23.1	28.7	27.8	34.6	16.4

Type of progression	
<i>cont'd</i>	NOS (1-KM)
N	643
Events	102
compet.	
Years	%
0	0.0
1	12.2
2	15.4
3	15.9
4	16.9
5	17.4
6	17.4
7	17.8
8	17.8
9	17.8
10	18.5
11	18.5
12	18.5
13	18.5
14	18.5
15	18.5

Table 5b. Time to first progression of patients with nasal cavity, middle ear, sinuses cancer for period 1998-2020 (N=643), also showing the total of progression events (Events) and of deaths as competing risk (compet.).

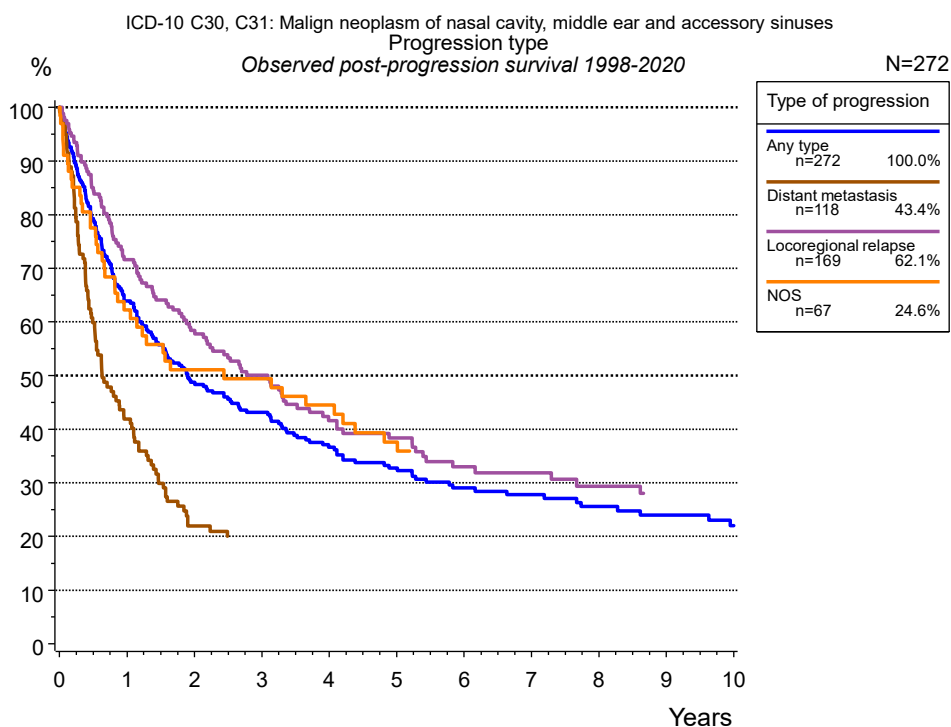


Figure 5c. Observed post-progression survival of 272 patients with nasal cavity, middle ear, sinuses cancer diagnosed between 1998 and 2020. These 272 patients with documented progression events during their course of disease represent 42.3 % of the totally 643 evaluated cases (incl. M1, n=20, 3.1 %). Patients with cancer relapse documented via death certificates only were excluded (n=51, 7.9 %). 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 “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 potentially considered in more than one subgroup.

Years	Type of progression			
	Any type n=272 %	Distant metastasis n=118 %	Locoregional relapse n=169 %	NOS n=67 %
0	100.0	100.0	100.0	100.0
1	63.9	41.9	71.6	62.2
2	48.8	22.0	58.4	51.0
3	43.1		50.0	49.4
4	36.6		41.6	44.5
5	32.8		38.4	37.6
6	29.0		33.0	
7	27.8		31.8	
8	25.6		29.4	
9	24.0		28.0	
10	22.0			

Table 5d. Observed post-progression survival of patients with nasal cavity, middle ear, sinuses cancer for period 1998-2020 (N=272).

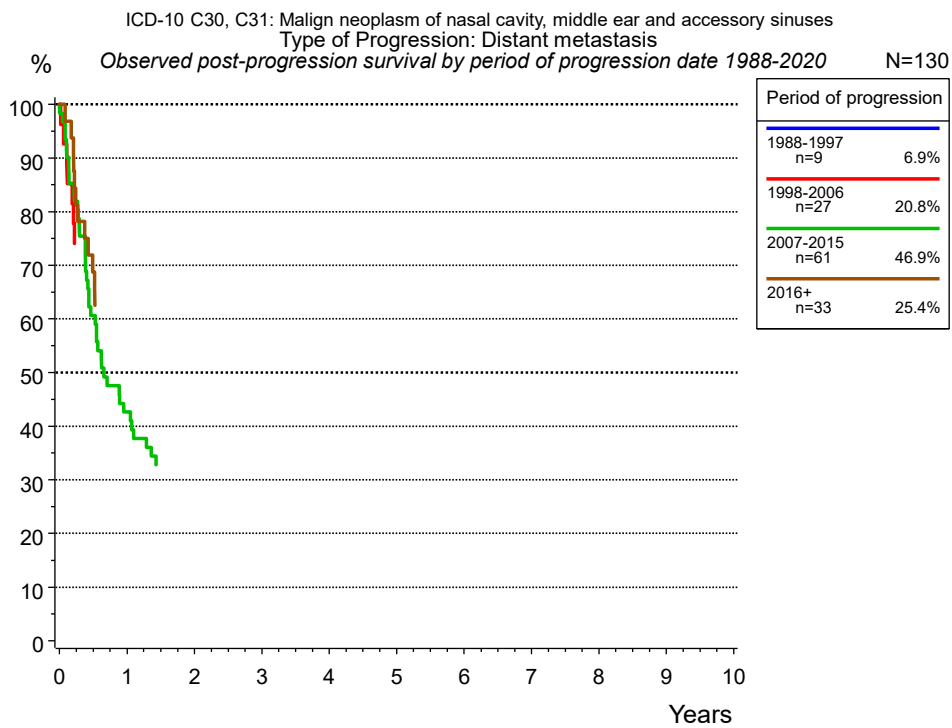


Figure 5e. Observed post-progression (distant metastasis) survival of 130 patients with nasal cavity, middle ear, sinuses cancer diagnosed between 1988 and 2020 by period of progression.

Years	Period of progression		
	1998-2006 n=27 %	2007-2015 n=61 %	2016+ n=33 %
0	100.0	100.0	100.0
1		42.6	

Table 5f. Observed post-progression (distant metastasis) survival of patients with nasal cavity, middle ear, sinuses cancer for period 1988-2020 by period of progression (N=130).

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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