Munich Cancer Registry

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

ICD-10 C53: Cervical cancer

Survival

Year of diagnosis	1988-1997	1998-2020
Patients	1,269	5,233
Diseases	1,269	5,237
Cases evaluated	1,208	4,512

Creation date	04/15/2022
Database export	12/20/2021
Population (females)	2.48 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/sC53__E-ICD-10-C53-Cervical-cancer-survival.pdf

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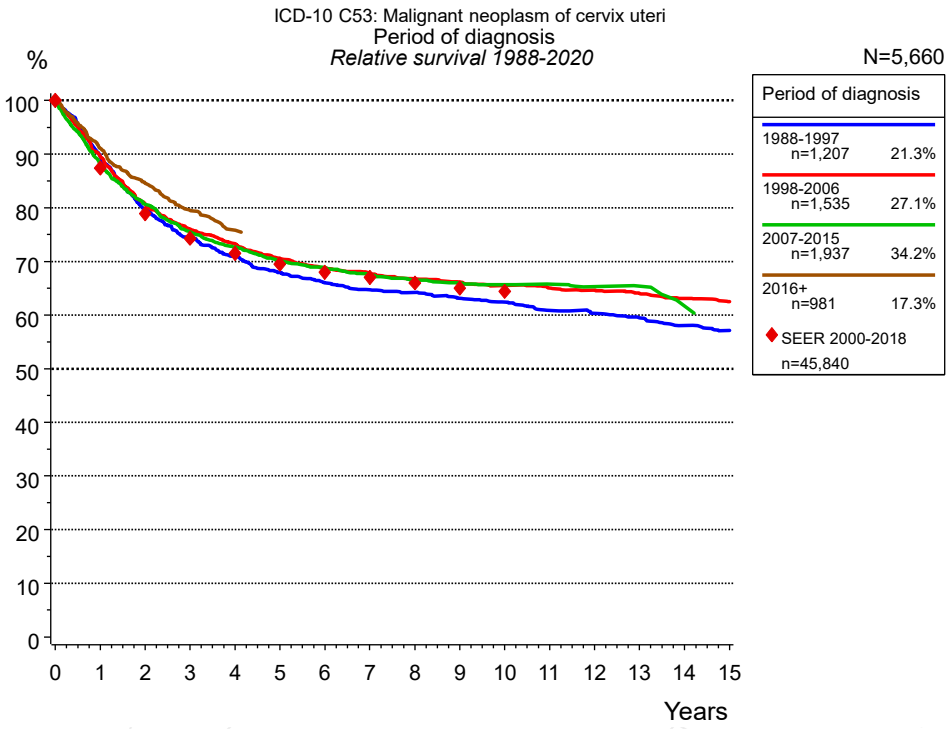

Figure 1a. Relative survival of patients with cervical cancer by period of diagnosis. Included in the evaluation are 5,660 cases diagnosed between 1988 and 2020.

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.

	Period of diagnosis							
	1988-1997 n=1,207		1998-2006 n=1,535		2007-2015 n=1,937		2016+ n=981	
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	88.3	89.6	88.5	89.5	87.4	88.2	90.4	91.0
2	77.5	79.7	79.1	80.7	79.4	80.6	83.5	84.6
3	71.5	74.4	74.0	76.0	74.0	75.5	78.1	79.5
4	67.5	71.0	70.9	73.3	70.7	72.6	74.3	75.8
5	63.9	67.9	67.7	70.5	67.9	70.1		
6	61.4	66.0	65.5	68.7	66.4	68.9		
7	59.6	64.7	64.2	67.7	64.7	67.5		
8	58.5	64.2	62.9	66.7	63.3	66.5		
9	57.0	63.1	61.9	66.1	62.5	65.9		
10	55.8	62.4	60.9	65.5	61.8	65.6		
11	53.9	60.9	59.9	65.0	61.5	65.8		
12	52.9	60.3	59.1	64.6	60.7	65.3		
13	51.8	59.5	58.1	64.0	60.4	65.4		
14	50.1	58.0	56.8	63.1	57.5	61.7		
15	48.9	57.1	55.8	62.5				
Median	14.2		20.5					

Table 1b. Observed (obs.) and relative (rel.) survival of patients with cervical cancer by period of diagnosis for period 1988-2020 (N=5,660).

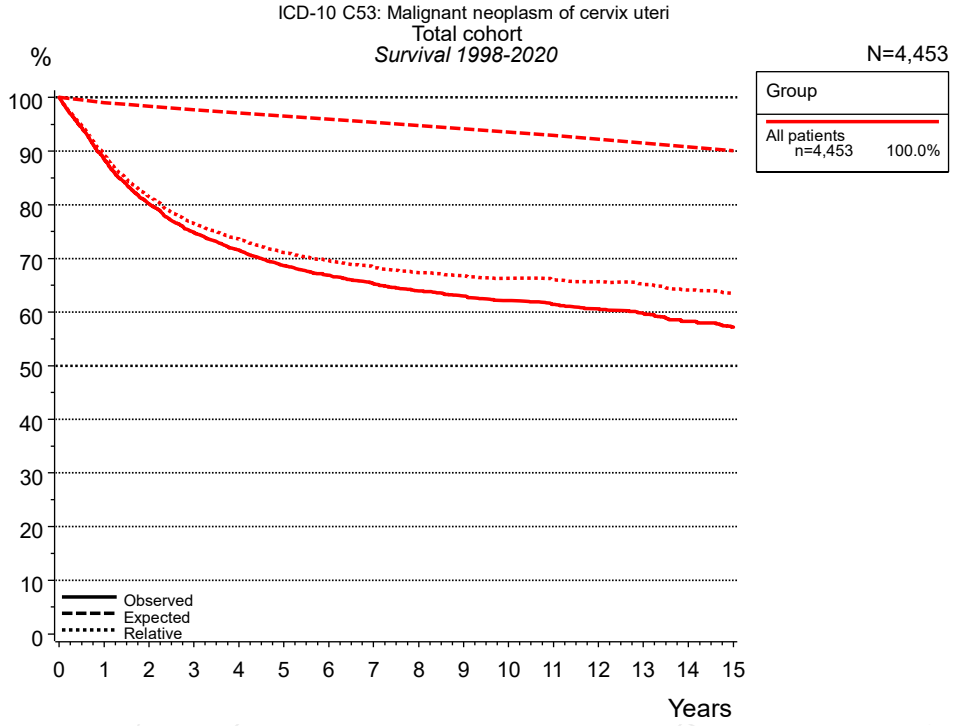

Figure 2a. Observed, expected and relative survival of the total cohort with cervical cancer. Included in the evaluation are 4,453 cases diagnosed between 1998 and 2020.

	Group	
	All patients n=4,453	
Years	obs. %	rel. %
0	100.0	100.0
1	88.4	89.3
2	80.2	81.5
3	74.8	76.5
4	71.6	73.7
5	68.7	71.1
6	66.8	69.6
7	65.3	68.4
8	63.9	67.4
9	63.0	66.8
10	62.1	66.3
11	61.4	66.0
12	60.6	65.6
13	59.7	65.2
14	58.2	64.1
15	57.1	63.4
Median		

Table 2b. Observed (obs.) and relative (rel.) survival of the total cohort with cervical cancer for period 1998-2020 (N=4,453).

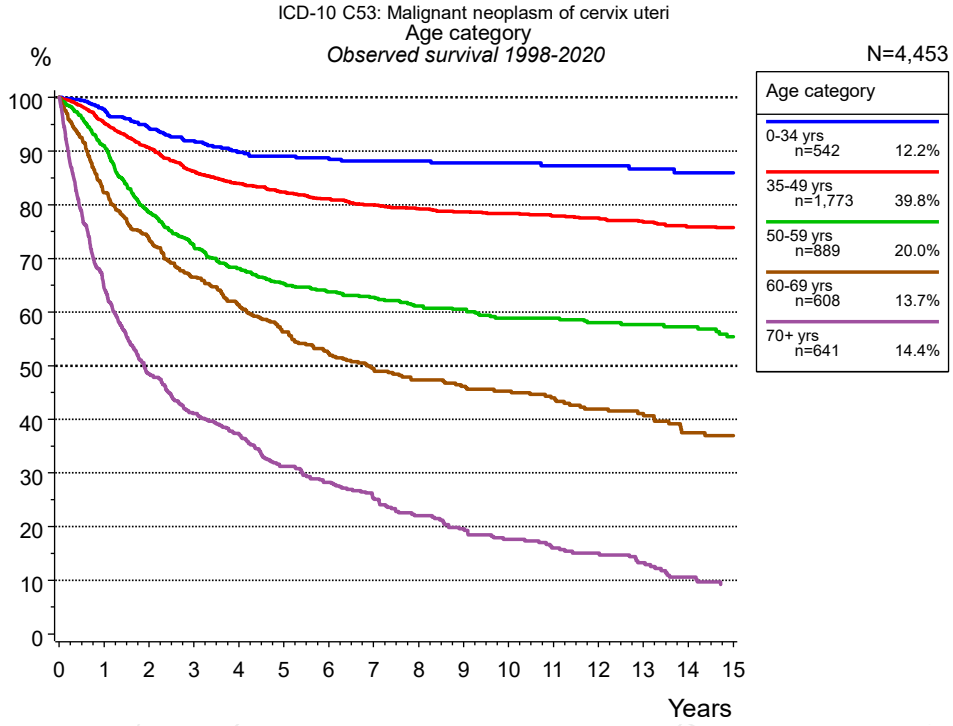

Figure 3a. Observed survival of patients with cervical cancer by age category. Included in the evaluation are 4,453 cases diagnosed between 1998 and 2020.

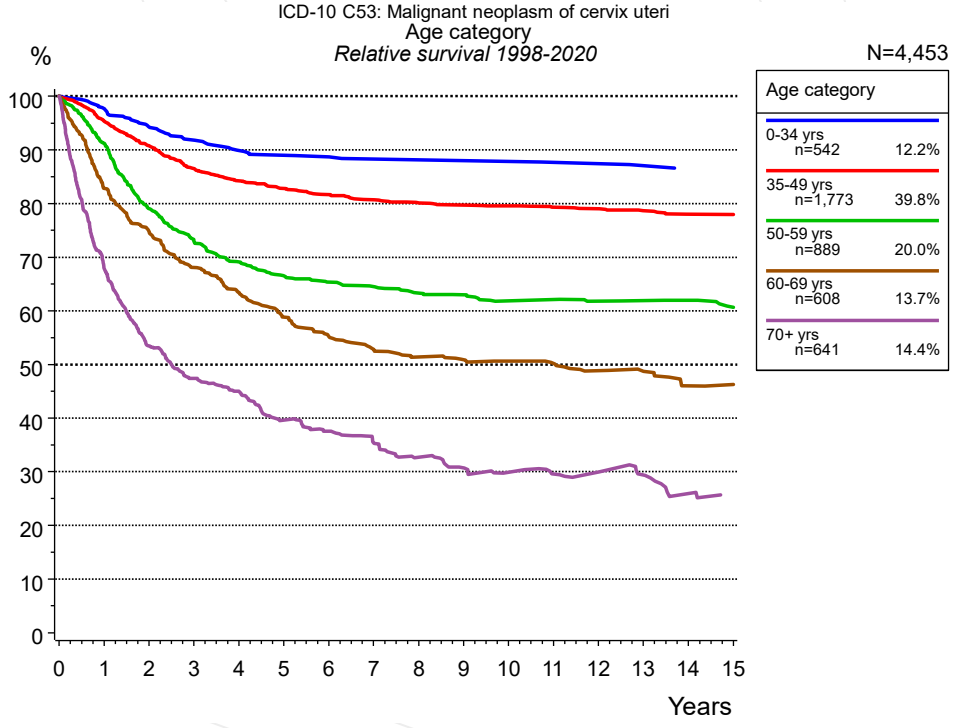

Figure 3b. Relative survival of patients with cervical cancer by age category. Included in the evaluation are 4,453 cases diagnosed between 1998 and 2020.

	Age category									
	0-34 yrs n=542		35-49 yrs n=1,773		50-59 yrs n=889		60-69 yrs n=608		70+ yrs n=641	
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	97.8	97.7	95.2	95.3	91.0	91.2	82.2	82.8	64.4	67.9
2	94.3	94.3	90.6	90.8	78.6	79.1	73.6	74.8	48.5	53.5
3	91.9	91.8	86.3	86.5	72.5	73.1	66.5	68.1	41.0	47.4
4	89.8	89.9	83.9	84.3	68.1	69.1	61.4	63.4	37.4	45.0
5	89.0	89.0	82.3	82.8	65.3	66.5	56.3	58.9	31.2	39.6
6	88.8	88.7	81.1	81.7	63.8	65.3	52.2	55.2	28.3	37.6
7	88.2	88.3	80.0	80.7	62.7	64.5	49.4	52.8	25.3	35.3
8	88.2	88.2	79.3	80.1	61.2	63.3	47.3	51.4	22.0	32.7
9	87.8	88.0	78.7	79.7	60.5	63.0	46.2	50.8	19.6	30.7
10	87.8	87.9	78.4	79.6	58.9	61.8	45.3	50.6	17.6	29.9
11	87.3	87.7	77.9	79.4	58.9	62.1	44.0	50.2	16.0	29.6
12	87.3	87.4	77.5	79.1	58.0	61.8	41.9	48.8	15.0	30.0
13	86.7	87.1	76.8	78.7	57.6	61.9	41.1	48.7	13.3	29.4
14			75.9	78.0	57.2	62.0	37.5	46.0	10.6	26.0
15			75.7	78.0	55.4	60.6	37.0	46.2		
Median					17.0		6.9		1.9	

Table 3c. Observed (obs.) and relative (rel.) survival of patients with cervical cancer by age category for period 1998-2020 (N=4,453).

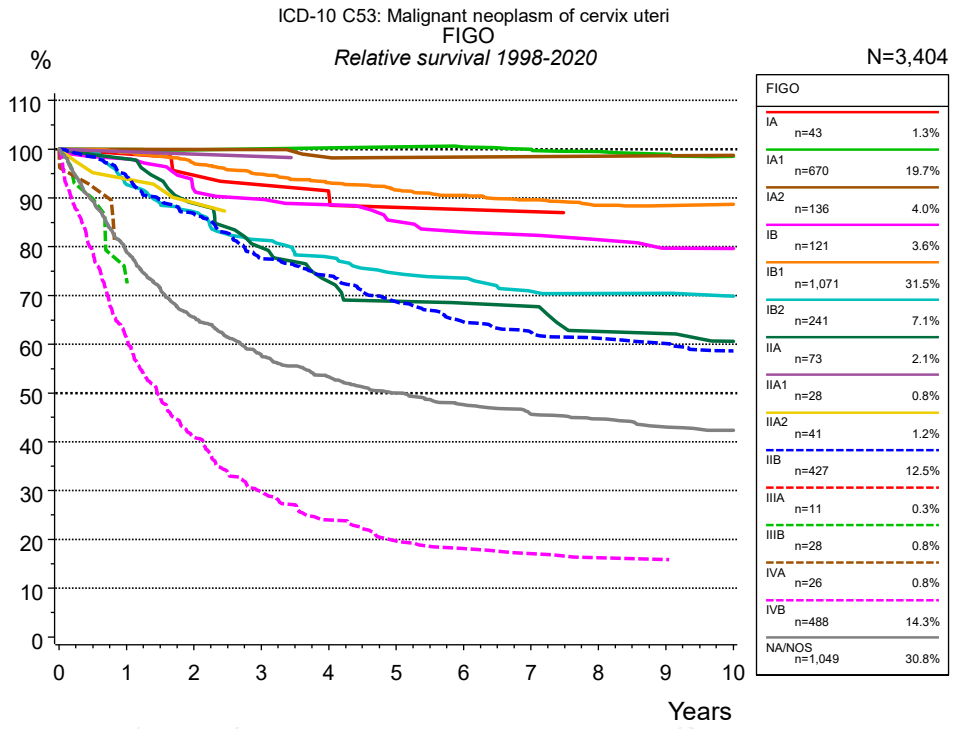

Figure 4a. Relative survival of patients with cervical cancer by FIGO. For 4,164 of 4,453 cases diagnosed between 1998 and 2020 valid data could be obtained for this item. For a total of 3,404 cases an evaluable classification was established. The grey line represents the subgroup of 1,049 patients with missing values regarding FIGO (23.6 % of 4,453 patients, the percent values of all other categories are related to n=3,404). Subgroups with sample size <20 are omitted from the chart.

	FIGO													
	IA n=43		IA1 n=670		IA2 n=136		IB n=121		IB1 n=1,071		IB2 n=241		IIA n=73	
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	100.0	99.0	99.8	99.9	100.0	100.0	98.3	98.0	99.0	99.3	92.1	92.8	98.6	98.0
2	94.6	94.7	99.5	99.9	100.0	99.9	91.2	91.7	96.4	97.1	86.2	87.2	88.1	88.9
3	91.9	92.6	99.5	100.1	100.0	99.9	89.4	89.8	94.0	94.9	80.0	81.4	79.1	79.8
4	91.9	91.4	99.5	100.3	98.1	98.3	87.5	88.6	91.9	93.2	76.0	77.9	71.7	72.9
5	86.1	88.1	99.5	100.5	97.2	98.3	83.4	85.3	89.9	91.6	72.3	74.6	67.1	68.8
6	86.1	87.6	99.1	100.4	97.2	98.4	81.3	83.0	88.5	90.5	71.3	73.6	65.6	68.4
7	86.1	87.2	98.6	100.0	97.2	98.5	80.2	82.4	87.2	89.6	67.8	70.9	65.6	67.8
8	82.7	86.9	97.8	99.5	97.2	98.6	78.0	81.4	85.6	88.5	67.2	70.4	59.1	62.7
9	82.7	86.8	96.9	99.0	97.2	98.6	75.6	79.7	85.1	88.4	67.2	70.4	59.1	62.2
10	82.7	86.7	95.9	98.5	97.2	98.7	75.6	79.6	84.9	88.7	65.7	69.8	55.8	60.6
Median													14.9	

	FIGO													
cont'd	IIA1 n=28		IIA2 n=41		IIB n=427		IIIB n=28		IVA n=26		IVB n=488		NA/NOS n=1,049	
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	100.0	99.5	95.0	93.9	93.7	94.4	75.0	73.2	80.1	79.1	60.7	61.3	77.0	78.8
2	100.0	99.0	89.4	89.0	85.5	86.9					40.3	40.9	63.1	65.6
3	100.0	98.5	86.3	86.4	75.7	77.5					29.5	29.8	55.0	57.9
4	95.8	94.2	86.3	84.8	71.6	74.1					23.4	24.0	50.1	53.4
5					65.8	68.7					19.2	19.7	46.3	50.0
6					61.5	64.6					17.4	18.1	43.7	47.6
7					58.9	62.5					16.5	17.1	41.5	45.7
8					57.3	61.2					15.5	16.2	40.1	44.7
9					55.9	60.1					15.5	15.9	38.2	43.0
10					53.9	58.6					14.9	15.7	37.2	42.4
Median					12.9						1.4		4.0	

Table 4b. Observed (obs.) and relative (rel.) survival of patients with cervical cancer by FIGO for period 1998-2020 (N=3,404).

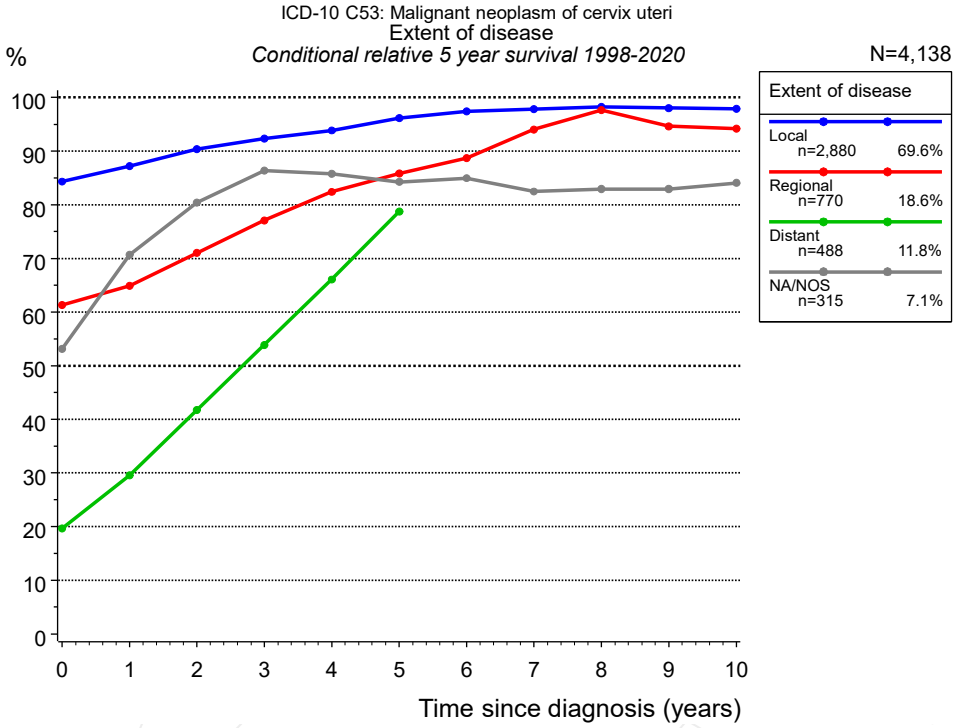

Figure 4c. Conditional relative 5-year survival of patients with cervical cancer by extent of disease. For 4,164 of 4,453 cases diagnosed between 1998 and 2020 valid data could be obtained for this item. For a total of 4,138 cases an evaluable classification was established. The grey line represents the subgroup of 315 patients with missing values regarding extent of disease (7.1 % of 4,453 patients, the percent values of all other categories are related to n=4,138).

	Extent of disease							
	Local		Regional		Distant		NA/NOS	
Years	n	Cond. surv. % 5 yrs	n	Cond. surv. % 5 yrs	n	Cond. surv. % 5 yrs	n	Cond. surv. % 5 yrs
0	2,880	84.3	770	61.3	488	19.7	315	53.1
1	2,564	87.2	657	64.9	291	29.5	206	70.7
2	2,317	90.3	533	71.0	180	41.7	167	80.4
3	2,101	92.3	444	77.1	119	53.9	142	86.4
4	1,909	93.8	386	82.4	81	66.1	125	85.8
5	1,711	96.2	340	85.8	57	78.7	116	84.2
6	1,575	97.4	305	88.7			108	84.9
7	1,429	97.8	260	94.1			101	82.5
8	1,301	98.2	220	97.6			94	83.0
9	1,180	98.0	194	94.6			84	83.0
10	1,059	97.9	177	94.2			76	84.1

Table 4d. Conditional relative 5-year survival of patients with cervical cancer by extent of disease for period 1998-2020 (N=4,138).

Conditional relative survival rates refer to the relative survival probability, in this case for 5 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 5-year survival rate is 92.3% (n=2,101).

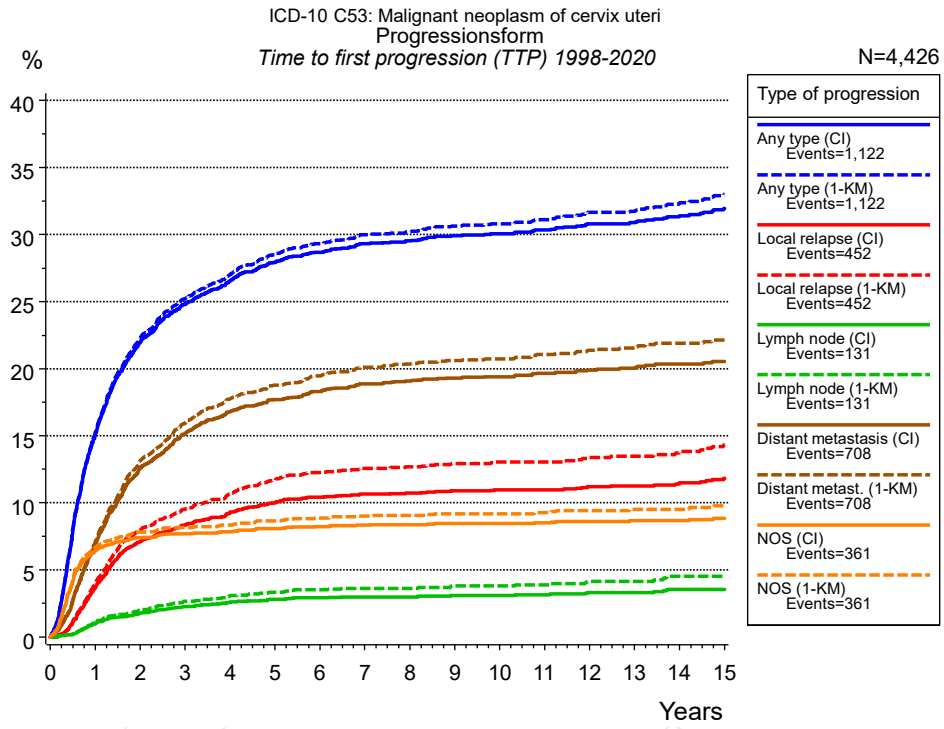

Figure 5a. Time to first progression of 4,426 patients with cervical cancer diagnosed between 1998 and 2020 (in solid cancers M0 only) estimated by cumulative incidence function (CI, solid line) accounting for death as competing risk and by inverse Kaplan-Meier estimate (1-KM, dashed line). The frequency of events may be underestimated due to underreporting.

	Type of progression						
	Any type (CI)	Any type (1-KM)	Local relapse (CI)	Local relapse (1-KM)	Lymph node (CI)	Lymph node (1-KM)	Distant metastasis (CI)
N	3,949	3,949	4,426	4,426	4,426	4,426	3,949
Events	1,112	1,112	446	446	128	128	702
compet.	312		1,221		1,432		551
Years	%	%	%	%	%	%	%
0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1	15.1	15.3	3.7	4.0	1.0	1.1	7.0
2	22.0	22.3	7.1	8.0	1.8	2.0	12.6
3	24.8	25.2	8.3	9.5	2.3	2.6	15.1
4	26.5	27.0	9.2	10.7	2.6	3.0	16.8
5	27.9	28.5	10.0	11.7	2.8	3.3	17.7
6	28.7	29.3	10.4	12.2	2.9	3.5	18.3
7	29.3	30.0	10.6	12.6	3.0	3.6	18.9
8	29.5	30.2	10.7	12.7	3.0	3.6	19.1
9	29.9	30.7	10.9	12.9	3.1	3.8	19.3
10	30.1	30.8	11.0	13.0	3.1	3.8	19.4
11	30.3	31.1	11.0	13.0	3.2	3.9	19.7
12	30.8	31.7	11.2	13.4	3.3	4.2	19.9
13	30.9	31.7	11.3	13.5	3.3	4.2	20.0
14	31.4	32.4	11.5	13.8	3.5	4.5	20.4
15	31.9	33.0	11.8	14.3	3.5	4.5	20.5

	Type of progression		
cont'd	Distant metast. (1-KM)	NOS (CI)	NOS (1-KM)
N	3,949	4,426	4,426
Events	702	359	359
compet.		1,247	
Years	%	%	%
0	0.0	0.0	0.0
1	7.2	6.4	6.7
2	13.1	7.4	7.8
3	15.9	7.7	8.2
4	17.7	7.8	8.3
5	18.8	8.1	8.6
6	19.5	8.2	8.9
7	20.1	8.3	9.0
8	20.4	8.4	9.1
9	20.6	8.4	9.2
10	20.7	8.4	9.2
11	21.1	8.5	9.3
12	21.4	8.6	9.4
13	21.5	8.7	9.5
14	21.9	8.7	9.5
15	22.1	8.8	9.8

Table 5b. Time to first progression of patients with cervical cancer for period 1998-2020 (N=4,426), also showing the total of progression events (Events) and of deaths as competing risk (compet.).

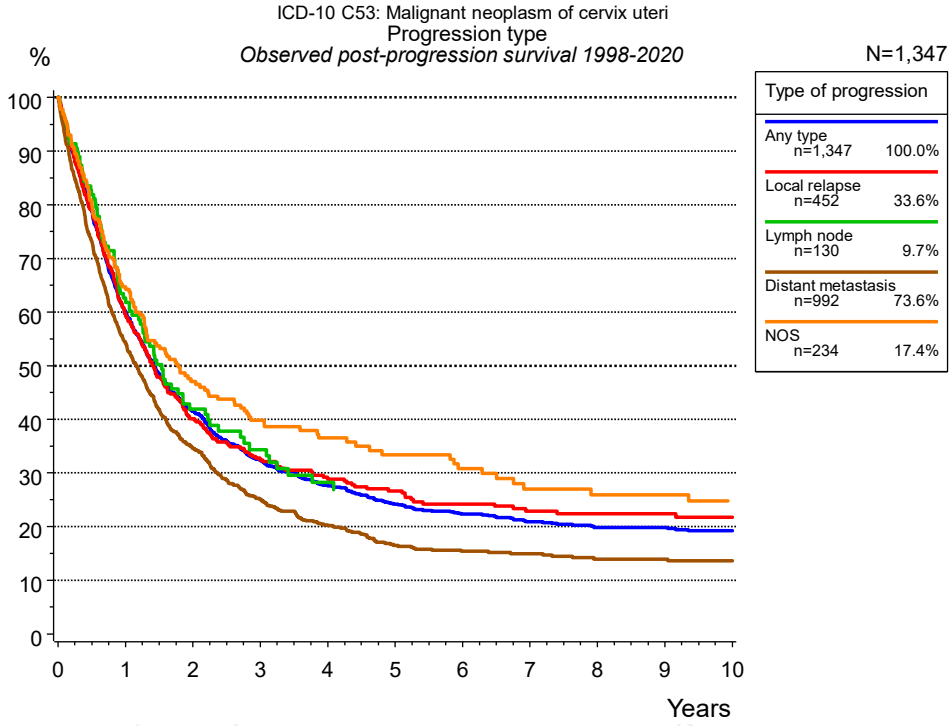

Figure 5c. Observed post-progression survival of 1,347 patients with cervical cancer diagnosed between 1998 and 2020. These 1,347 patients with documented progression events during their course of disease represent 30.4 % of the totally 4,426 evaluated cases (incl. M1, n=477, 10.8 %). Patients with cancer relapse documented via death certificates only were excluded (n=252, 5.7 %). 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.

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	Lymph node	Distant metastasis	NOS
	n=1,347	n=452	n=130	n=992	n=234
Years	%	%	%	%	%
0	100.0	100.0	100.0	100.0	100.0
1	60.1	59.7	62.6	54.3	64.7
2	41.4	40.1	41.9	34.6	47.1
3	32.3	32.4	34.4	25.0	39.8
4	27.7	29.2	28.3	20.3	36.5
5	24.1	26.7		16.4	33.4
6	22.3	24.2		15.4	30.8
7	20.9	22.9		14.9	27.0
8	19.9	22.4		13.9	25.9
9	19.9	22.4		13.9	25.9
10	19.2	21.8		13.6	24.8

Table 5d. Observed post-progression survival of patients with cervical cancer for period 1998-2020 (N=1,347).

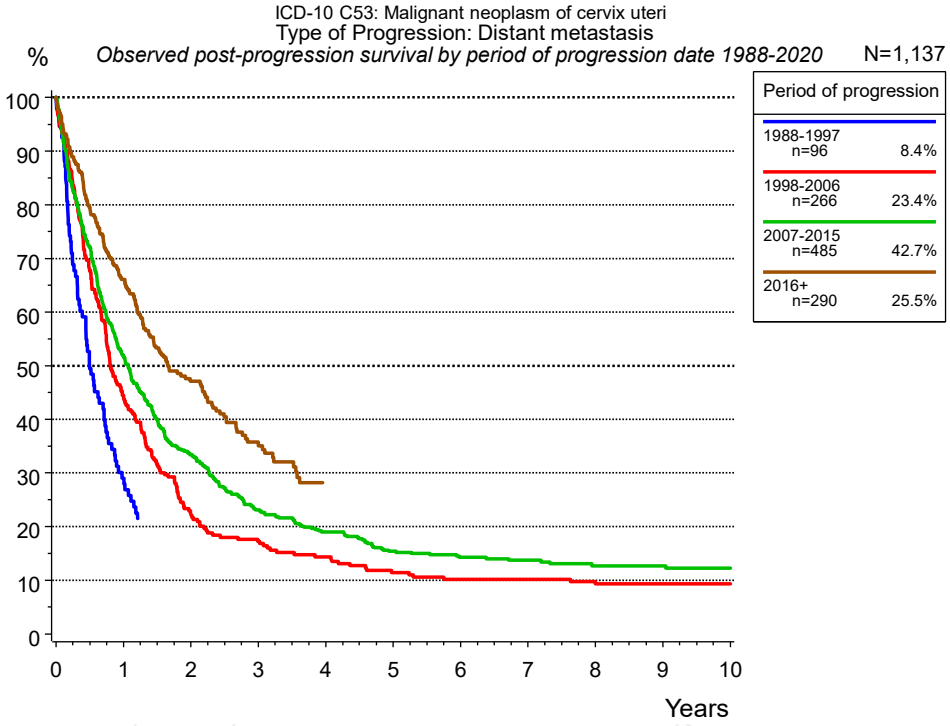

Figure 5e. Observed post-progression (distant metastasis) survival of 1,137 patients with cervical cancer diagnosed between 1988 and 2020 by period of progression.

	Period of progression			
	1988-1997 n=96	1998-2006 n=266	2007-2015 n=485	2016+ n=290
Years	%	%	%	%
0	100.0	100.0	100.0	100.0
1	29.0	44.5	51.7	66.0
2		22.5	33.4	47.1
3		17.2	23.1	35.1
4		14.3	19.0	28.2
5		11.4	15.4	
6		10.2	14.3	
7		10.2	13.7	
8		9.7	12.7	
9		9.3	12.7	
10		9.3	12.2	

Table 5f. Observed post-progression (distant metastasis) survival of patients with cervical cancer for period 1988-2020 by period of progression (N=1,137).

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 C53: Cervical cancer [Internet]. 2022 [updated 2022 Apr 15; cited 2022 Jun 1]. Available from: https://www.tumorregister-muenchen.de/en/facts/surv/sC53__E-ICD-10-C53-Cervical-cancer-survival.pdf

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