Munich Cancer Registry

ICD-10 C53-C55: Uterine cancer

Survival

Year of diagnosis	1988-1997	1998-2020
Patients	3,447	17,599
Diseases	3,456	17,683
Cases evaluated	3,164	14,498
Creation date	04/15/2022	
Database export	12/20/2021	
Population (females)	2.48 m	

BERLIN

GERMANY

BAVARIA

MUNICH

Munich Cancer Registry
Cancer Registry Bavaria - Upper Bavaria Regional Center
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https://www.tumorregister-muenchen.de/en

https://www.tumorregister-muenchen.de/en/facts/surv/sC5355E-ICD-10-C53-C55-Uterine-cancer-survival.pdf

Index of figures and tables

ICD-10 C53-C55: Malignant neoplasm of uterus
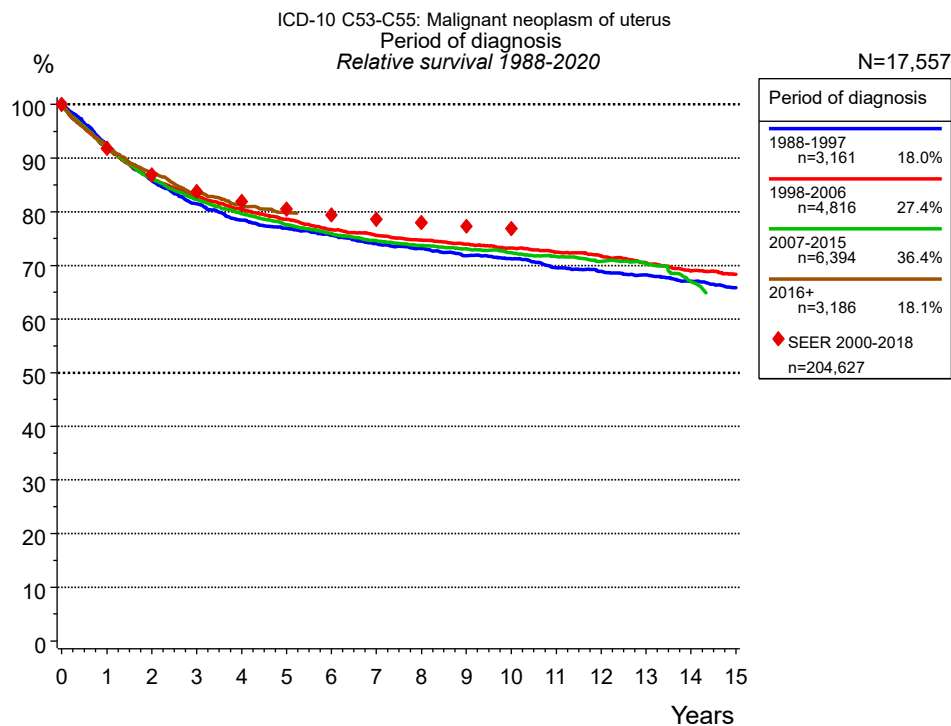Period of diagnosis
Relative survival 1988-2020 N=17,557

Figure 1a. Relative survival of patients with uterine cancer by period of diagnosis. Included in the evaluation are 17,557 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=3,161		1998-2006 n=4,816		2007-2015 n=6,394		2016+ n=3,186	
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	90.5	92.5	90.1	91.9	90.5	92.1	90.9	92.3
2	82.2	85.8	83.1	86.3	83.3	86.1	84.7	87.3
3	76.4	81.4	78.3	82.8	78.3	82.3	79.8	83.4
4	72.1	78.4	74.8	80.5	74.5	79.6	76.6	81.2
5	69.1	76.8	71.8	78.6	71.5	77.6	74.3	79.9
6	66.6	75.6	68.8	76.7	68.7	75.9		
7	63.9	74.0	66.6	75.6	66.4	74.6		
8	61.8	73.1	64.6	74.7	64.5	73.7		
9	59.4	71.8	62.8	74.0	62.8	73.1		
10	57.8	71.3	61.0	73.2	61.0	72.3		
11	55.2	69.6	59.1	72.5	59.2	71.6		
12	53.4	68.8	57.3	71.8	57.3	70.7		
13	51.8	68.2	55.1	70.5	55.8	70.3		
14	49.8	67.0	52.7	69.0	51.9	66.9		
15	47.8	65.8	51.0	68.3				
Median	13.8		15.5		14.3			

Table 1b. Observed (obs.) and relative (rel.) survival of patients with uterine cancer by period of diagnosis for period 1988-2020 (N=17,557).

ICD-10 C53-C55: Malignant neoplasm of uterus
Total cohort
Survival 1998-2020
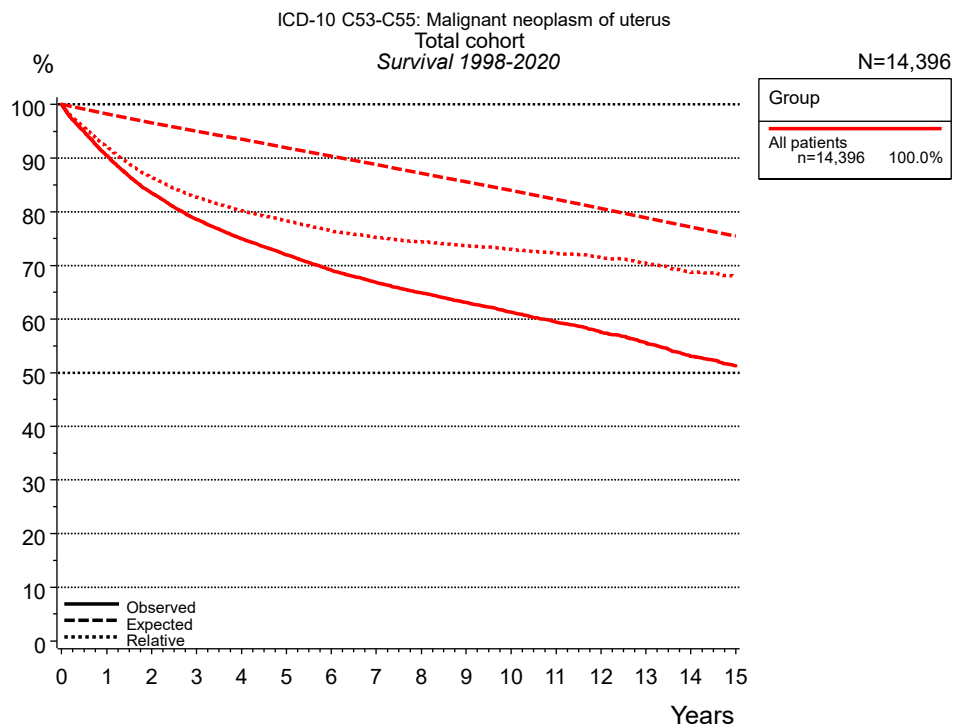
Figure 2a. Observed, expected and relative survival of the total cohort with uterine cancer. Included in the evaluation are 14,396 cases diagnosed between 1998 and 2020.

	Group	
	All patients n=14,396	
Years	obs. %	rel. %
0	100.0	100.0
1	90.5	92.1
2	83.5	86.4
3	78.6	82.7
4	75.0	80.2
5	72.0	78.3
6	69.1	76.5
7	66.8	75.3
8	64.9	74.4
9	63.1	73.7
10	61.3	73.0
11	59.5	72.2
12	57.6	71.4
13	55.6	70.4
14	53.0	68.7
15	51.3	68.0
Median	15.7	

Table 2b. Observed (obs.) and relative (rel.) survival of the total cohort with uterine cancer for period 1998-2020 (N=14,396).

ICD-10 C53-C55: Malignant neoplasm of uterus
Age category
Observed survival 1998-2020

N=14,396

Age category		
0-49 yrs		
n=2,987		20.7%
50-59 yrs		
n=2,833		19.7%
60-69 yrs		
n=3,675		25.5%
70-79 yrs		
n=3,257		22.6%
80+ yrs		
n=1,644		11.4%

Figure 3a. Observed survival of patients with uterine cancer by age category. Included in the evaluation are 14,396 cases diagnosed between 1998 and 2020.

ICD-10 C53-C55: Malignant neoplasm of uterus
Age category
Relative survival 1998-2020

N=14,396

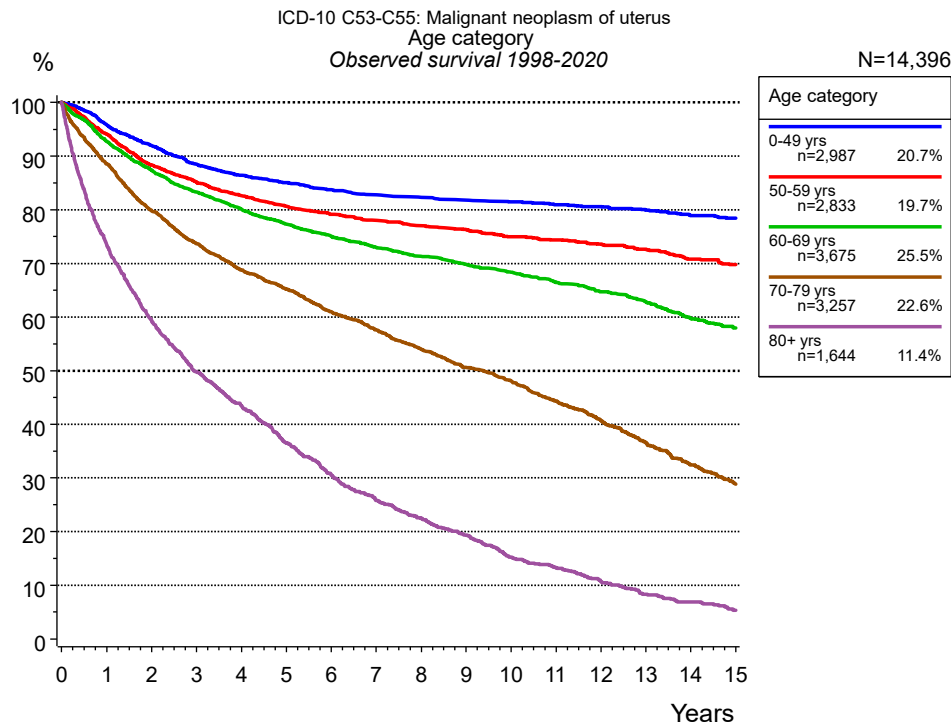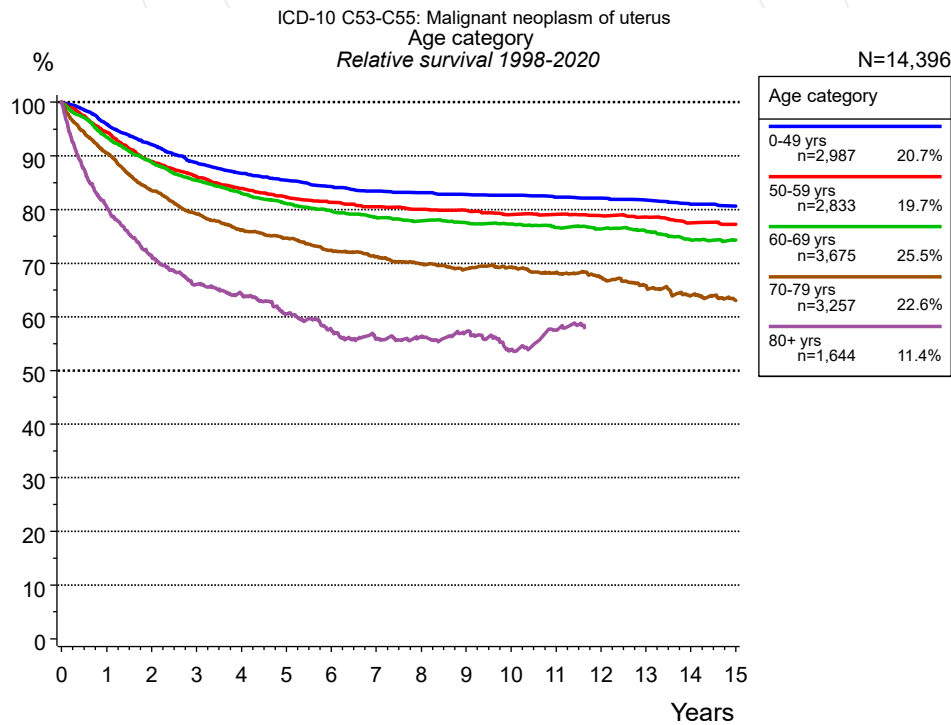| Age category		
0-49 yrs		
n=2,987		20.7%
50-59 yrs		
n=2,833		19.7%
60-69 yrs		
n=3,675		25.5%
70-79 yrs		
n=3,257		22.6%
80+ yrs		
n=1,644		11.4%

Figure 3b. Relative survival of patients with uterine cancer by age category. Included in the evaluation are 14,396 cases diagnosed between 1998 and 2020.

	Age category									
	0-49 yrs n=2,987		50-59 yrs n=2,833		60-69 yrs n=3,675		70-79 yrs n=3,257		80+ yrs n=1,644	
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	95.8	95.9	94.1	94.5	92.8	93.5	88.5	90.5	73.4	80.4
2	91.9	92.1	88.3	88.9	87.4	88.8	79.8	83.5	59.3	71.3
3	88.5	88.8	85.2	86.1	83.2	85.5	73.6	79.2	49.8	66.1
4	86.4	86.8	82.6	84.0	80.1	83.0	68.8	76.1	43.5	64.2
5	85.0	85.5	80.6	82.3	77.3	81.1	65.2	74.6	36.5	60.6
6	83.7	84.3	79.2	81.3	75.0	79.7	61.0	72.4	30.5	57.4
7	82.8	83.5	78.0	80.5	73.0	78.6	57.6	71.2	25.8	55.8
8	82.3	83.2	77.0	80.0	71.3	77.9	54.0	69.9	22.5	56.4
9	81.8	82.8	76.3	79.9	69.8	77.6	50.7	69.0	19.4	57.2
10	81.5	82.7	75.0	79.1	68.3	77.3	48.0	69.3	15.2	53.9
11	80.9	82.3	74.4	79.1	66.4	76.7	44.4	68.3	13.3	57.5
12	80.6	82.1	73.6	78.9	64.7	76.4	40.6	67.3	10.7	58.0
13	79.9	81.8	72.6	78.6	62.9	76.0	36.6	65.8	8.3	56.9
14	78.9	81.0	70.8	77.5	59.7	74.3	32.4	63.9	6.9	61.6
15	78.4	80.7	69.8	77.3	58.0	74.4	28.9	63.0	5.3	64.2
Median					18.4		9.4		2.9	

Table 3c. Observed (obs.) and relative (rel.) survival of patients with uterine cancer by age category for period 1998-2020 (N=14,396).

ICD-10 C53-C55: Malignant neoplasm of uterus
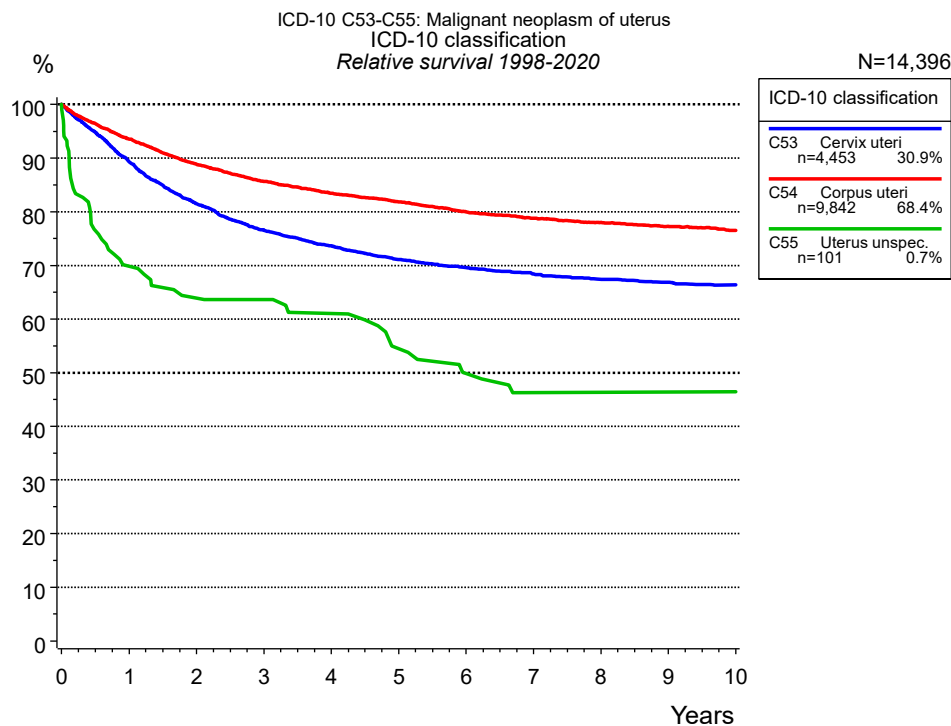ICD-10 classification
Relative survival 1998-2020

Figure 4a. Relative survival of patients with uterine cancer by ICD-10 classification. Included in the evaluation are 14,396 cases diagnosed between 1998 and 2020.

	ICD-10 classification					
	C53 Cervix uteri n=4,453		C54 Corpus uteri n=9,842		C55 Uterus unspec. n=101	
Years	obs. %	rel. %	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0	100.0	100.0
1	88.4	89.3	91.6	93.6	68.2	69.8
2	80.2	81.5	85.2	88.9	61.4	63.9
3	74.8	76.5	80.4	85.7	60.2	63.6
4	71.6	73.7	76.7	83.4	56.6	61.1
5	68.7	71.1	73.7	81.8	49.4	54.5
6	66.8	69.6	70.4	80.0	44.3	49.9
7	65.3	68.4	67.8	78.8	40.5	46.3
8	63.9	67.4	65.6	78.0	40.5	46.3
9	63.0	66.8	63.4	77.3	40.5	46.4
10	62.1	66.3	61.2	76.5	40.5	46.4
Median			14.6		4.9	

Table 4b. Observed (obs.) and relative (rel.) survival of patients with uterine cancer by ICD-10 classification for period 1998-2020 (N=14,396).

ICD-10 C53-C55: Malignant neoplasm of uterus
Extent of disease
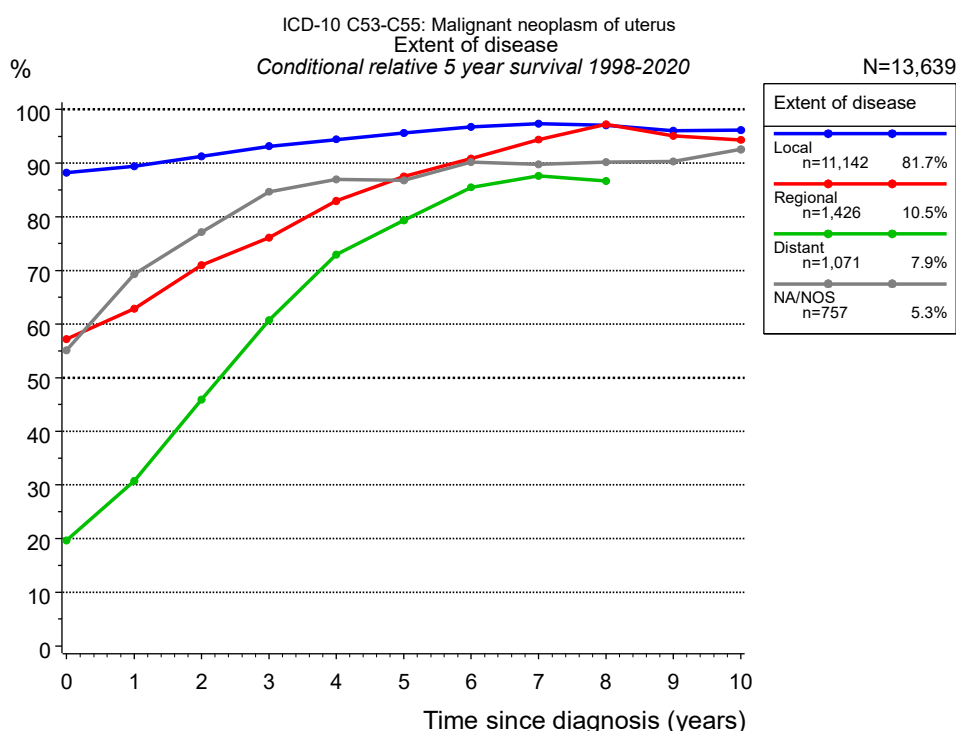*Conditional relative 5 year survival 1998-2020*

Figure 4c. Conditional relative 5-year survival of patients with uterine cancer by extent of disease. For 13,702 of 14,396 cases diagnosed between 1998 and 2020 valid data could be obtained for this item. For a total of 13,639 cases an evaluable classification was established. The grey line represents the subgroup of 757 patients with missing values regarding extent of disease (5.3 % of 14,396 patients, the percent values of all other categories are related to n=13,639).

	Extent of disease							
	Local		Regional		Distant		NA/NOS	
		Cond. surv. %		Cond. surv. %		Cond. surv. %		Cond. surv. %
Years	n	5 yrs	n	5 yrs	n	5 yrs	n	5 yrs
0	11,142	88.2	1,426	57.2	1,071	19.6	757	55.1
1	10,169	89.4	1,170	62.9	596	30.8	522	69.3
2	9,259	91.3	931	71.0	356	45.9	431	77.2
3	8,376	93.1	781	76.1	238	60.7	362	84.7
4	7,561	94.4	660	83.0	173	72.9	313	87.0
5	6,805	95.7	571	87.5	130	79.3	288	86.8
6	6,158	96.8	502	90.8	103	85.5	256	90.2
7	5,540	97.3	430	94.4	87	87.6	242	89.8
8	4,979	97.1	367	97.2	73	86.7	225	90.2
9	4,442	96.0	327	95.1			205	90.3
10	3,929	96.2	297	94.4			184	92.6

Table 4d. Conditional relative 5-year survival of patients with uterine cancer by extent of disease for period 1998-2020 (N=13,639).

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 93.1% (n=8,376).
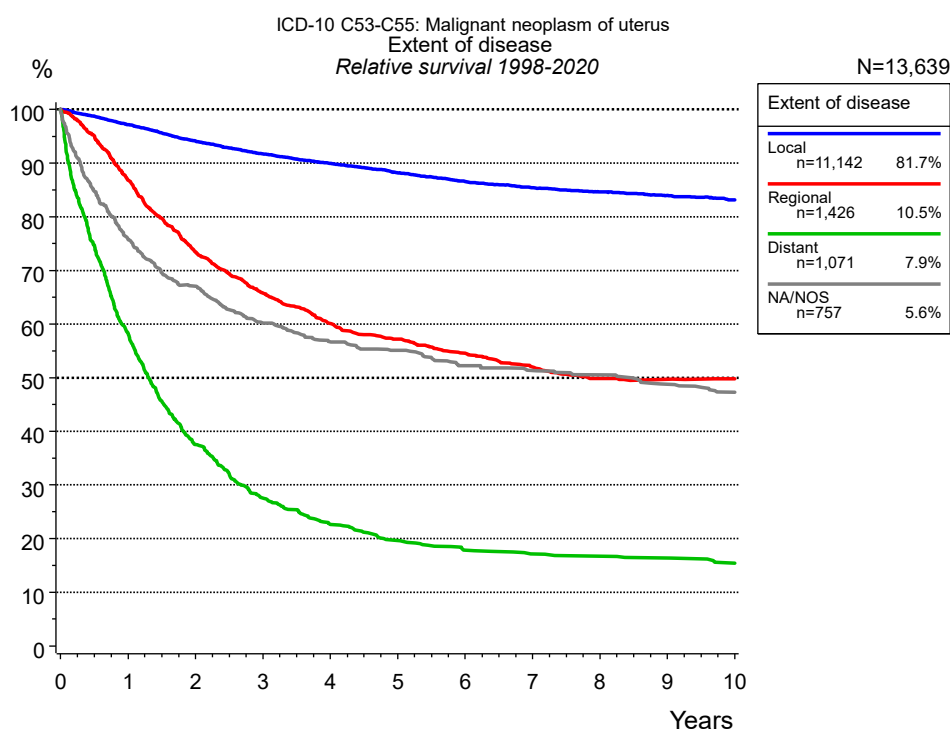
ICD-10 C53-C55: Malignant neoplasm of uterus
Extent of disease
Relative survival 1998-2020

Figure 4c. Relative survival of patients with uterine cancer by extent of disease. For 13,702 of 14,396 cases diagnosed between 1998 and 2020 valid data could be obtained for this item. For a total of 13,639 cases an evaluable classification was established. The grey line represents the subgroup of 757 patients with missing values regarding extent of disease (5.3 % of 14,396 patients, the percent values of all other categories are related to n=13,639).

	Extent of disease							
	Local n=11,142		Regional n=1,426		Distant n=1,071		NA/NOS n=757	
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	95.5	97.1	85.9	86.9	57.1	58.1	73.1	75.7
2	90.9	94.1	71.8	73.5	36.5	37.5	63.2	67.0
3	87.1	91.7	63.6	65.7	26.6	27.6	55.7	60.2
4	84.0	89.9	57.6	60.1	21.5	22.6	51.6	56.7
5	80.9	88.2	54.2	57.2	18.4	19.6	49.4	55.1
6	78.0	86.6	51.3	54.6	16.5	17.8	46.2	52.2
7	75.6	85.4	48.3	52.0	15.6	17.2	44.9	51.3
8	73.5	84.7	45.9	49.9	15.0	16.7	43.6	50.5
9	71.5	84.0	45.2	49.7	14.6	16.4	41.6	48.7
10	69.4	83.2	44.8	49.8	13.6	15.4	39.9	47.3
Median	19.2		6.4		1.3		4.4	

Table 4d. Observed (obs.) and relative (rel.) survival of patients with uterine cancer by extent of disease for period 1998-2020 (N=13,639).

ICD-10 C53-C55: Malignant neoplasm of uterus
Progressionsform
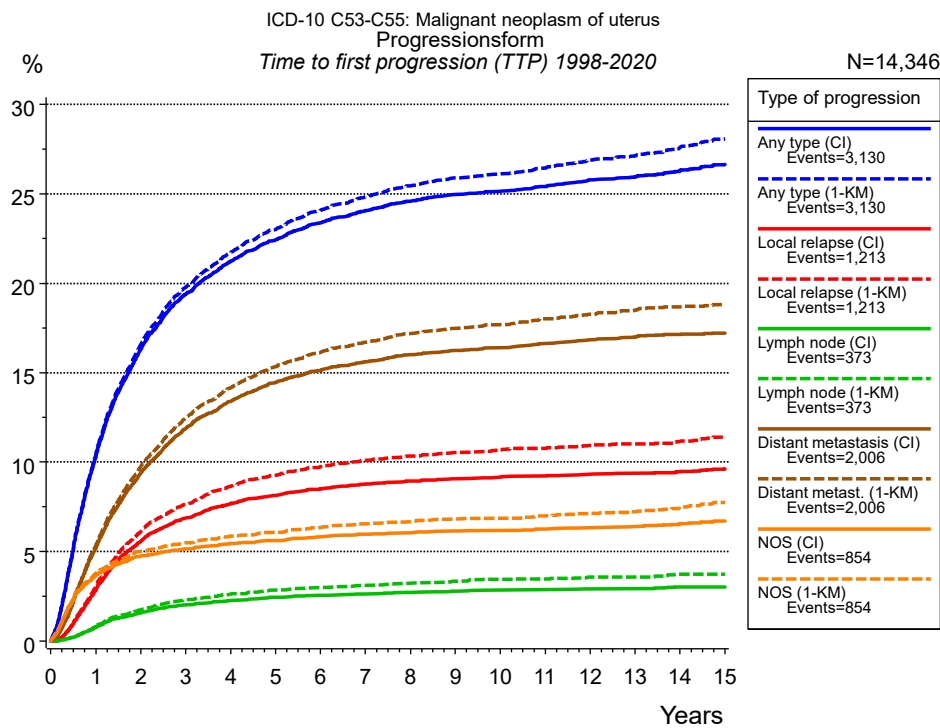*Time to first progression (TTP) 1998-2020*   N=14,346

Figure 5a. Time to first progression of 14,346 patients with uterine 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.

	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	13,298	13,298	14,346	14,346	14,346	14,346	13,298
Events	3,111	3,111	1,205	1,205	370	370	1,992
compet.	1,890		4,357		4,932		2,651
Years	%	%	%	%	%	%	%
0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1	10.3	10.4	2.8	3.0	0.8	0.8	5.2
2	16.3	16.6	5.6	6.1	1.6	1.7	9.4
3	19.4	19.8	6.9	7.7	2.0	2.3	11.9
4	21.2	21.7	7.7	8.6	2.3	2.6	13.4
5	22.4	23.0	8.1	9.3	2.5	2.9	14.4
6	23.4	24.1	8.5	9.7	2.6	3.0	15.1
7	24.1	24.8	8.8	10.1	2.6	3.1	15.6
8	24.6	25.4	8.9	10.3	2.7	3.2	16.0
9	25.0	25.9	9.1	10.6	2.8	3.3	16.3
10	25.2	26.1	9.2	10.7	2.9	3.4	16.4
11	25.4	26.4	9.2	10.8	2.9	3.5	16.6
12	25.8	26.9	9.3	10.9	2.9	3.6	16.8
13	26.0	27.1	9.4	11.0	2.9	3.6	17.0
14	26.3	27.6	9.5	11.2	3.0	3.7	17.1
15	26.6	28.1	9.6	11.4	3.0	3.7	17.2

	Type of progression		
cont'd	Distant metast. (1-KM)	NOS (CI)	NOS (1-KM)
N	13,298	14,346	14,346
Events	1,992	849	849
compet.		4,494	
Years	%	%	%
0	0.0	0.0	0.0
1	5.4	3.7	3.8
2	9.8	4.8	5.0
3	12.4	5.2	5.5
4	14.1	5.5	5.9
5	15.3	5.6	6.1
6	16.1	5.8	6.3
7	16.7	6.0	6.6
8	17.2	6.0	6.7
9	17.5	6.2	6.8
10	17.7	6.2	6.9
11	18.0	6.3	7.0
12	18.3	6.3	7.1
13	18.5	6.4	7.2
14	18.7	6.6	7.5
15	18.8	6.7	7.7

Table 5b. Time to first progression of patients with uterine cancer for period 1998-2020 (N=14,346), also showing the total of progression events (Events) and of deaths as competing risk (compet.).
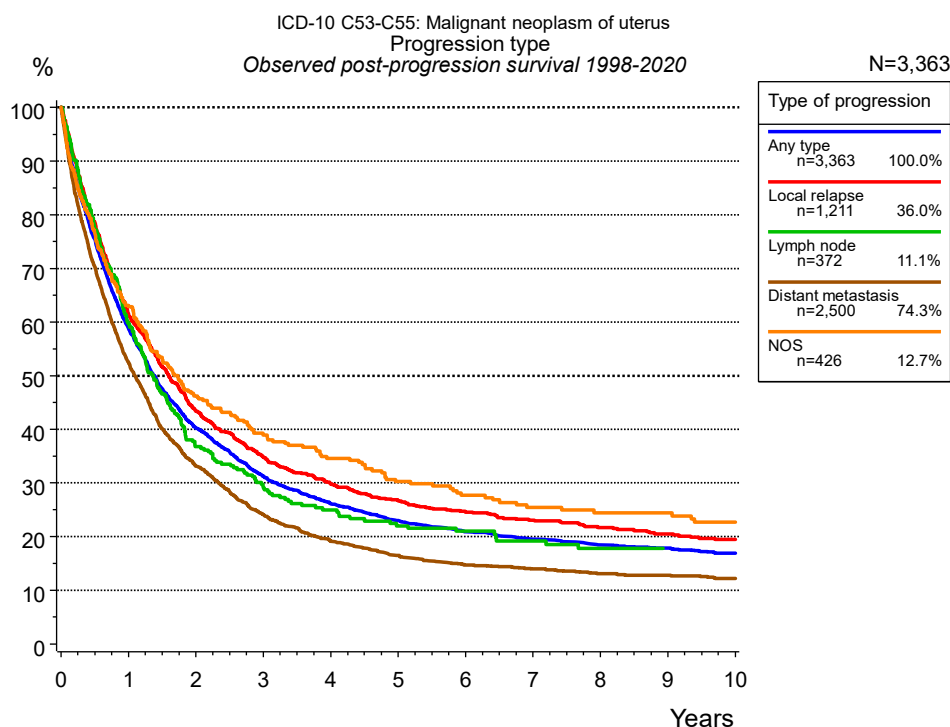
ICD-10 C53-C55: Malignant neoplasm of uterus
Progression type
Observed post-progression survival 1998-2020

Figure 5c. Observed post-progression survival of 3,363 patients with uterine cancer diagnosed between 1998 and 2020. These 3,363 patients with documented progression events during their course of disease represent 23.4 % of the totally 14,346 evaluated cases (incl. M1, n=1,048, 7.3 %). Patients with cancer relapse documented via death certificates only were excluded (n=815, 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=3,363	n=1,211	n=372	n=2,500	n=426
Years	%	%	%	%	%
0	100.0	100.0	100.0	100.0	100.0
1	58.8	61.5	59.9	52.4	63.1
2	40.2	43.4	36.8	33.1	46.2
3	31.2	34.8	29.4	24.0	38.9
4	26.2	29.9	25.0	19.2	34.6
5	23.0	26.7	22.0	16.4	30.2
6	20.9	24.6	21.0	14.7	27.7
7	19.5	23.1	19.2	14.0	25.4
8	18.4	21.7	17.8	13.1	24.4
9	17.8	20.5	17.8	12.8	24.4
10	16.9	19.5		12.2	22.7

Table 5d. Observed post-progression survival of patients with uterine cancer for period 1998-2020 (N=3,363).

ICD-10 C53-C55: Malignant neoplasm of uterus
Type of Progression: Distant metastasis
Observed post-progression survival by period of progression date 1988-2020   N=2,846
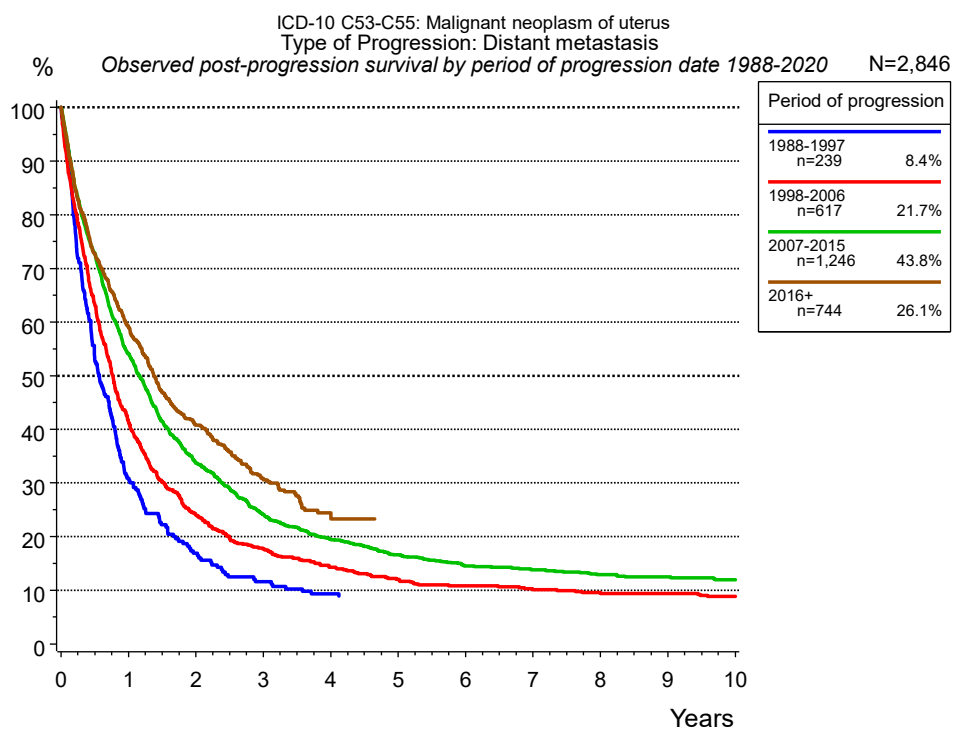

Figure 5e. Observed post-progression (distant metastasis) survival of 2,846 patients with uterine cancer diagnosed between 1988 and 2020 by period of progression.

	Period of progression			
	1988-1997 n=239	1998-2006 n=617	2007-2015 n=1,246	2016+ n=744
Years	%	%	%	%
0	100.0	100.0	100.0	100.0
1	30.9	41.4	54.1	59.1
2	16.9	24.2	33.7	40.8
3	11.6	17.7	24.2	30.6
4	9.3	14.3	19.5	24.4
5	8.9	12.0	16.6	
6		10.8	14.5	
7		10.1	13.8	
8		9.6	12.9	
9		9.4	12.5	
10		8.9	11.9	

Table 5f. Observed post-progression (distant metastasis) survival of patients with uterine cancer for period 1988-2020 by period of progression (N=2,846).

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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