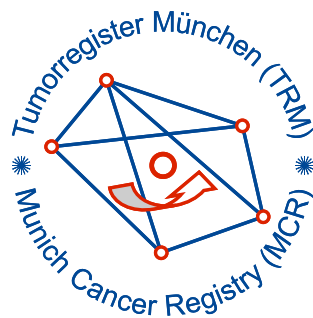


Munich Cancer Registry



- ▶ Baseline statistics
- ▶ Selection Matrix
- ▶ Homepage

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

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

Cancer statistics: Survival

C56, D39.1: Ovarian cancer

Year of diagnosis	1978-1987	1988-1997	1998-2011
Patients	1,035	1,678	6,127
Diseases	1,036	1,678	6,137
Creation date	04/01/2013		
Export date	01/03/2013		
Population (females)	2.3 m		



http://www.tumorregister-muenchen.de/en/facts/surv/surv_C56D_E.pdf

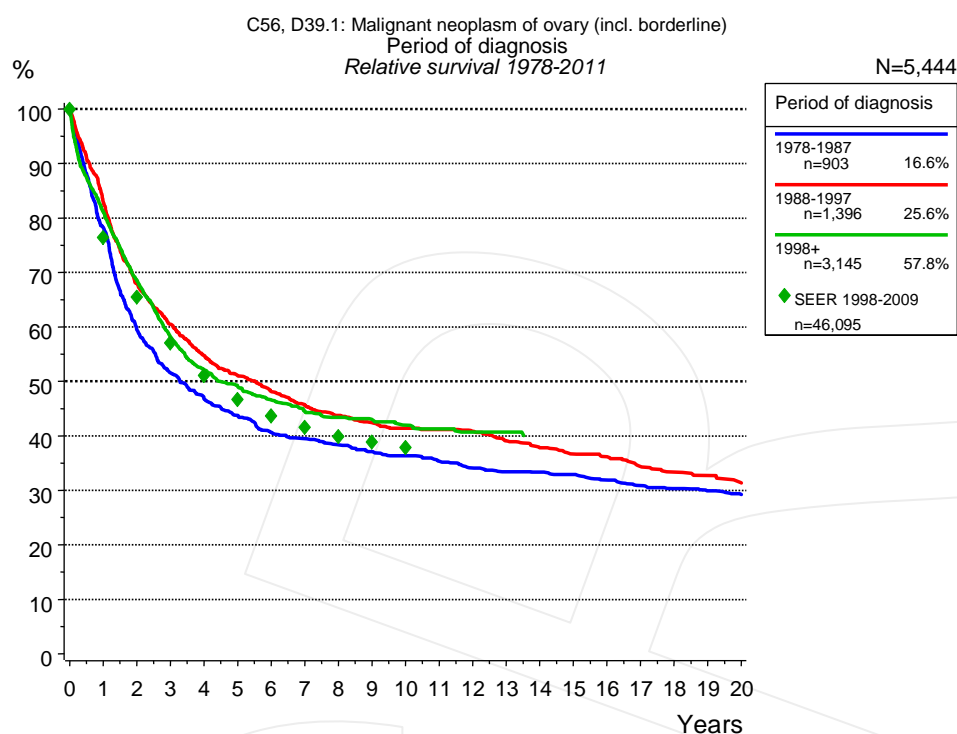


Figure 1a. Relative survival of patients with ovarian cancer by period of diagnosis. Included in the evaluation are 5,444 cases diagnosed between 1978 and 2011.

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					
	1978-1987 n=903		1988-1997 n=1,396		1998+ n=3,145	
	obs. %	rel. %	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0	100.0	100.0
1	76.9	78.1	81.5	82.9	79.5	81.0
2	57.9	59.4	65.8	67.9	66.1	68.4
3	49.6	51.6	57.7	60.5	55.4	58.2
4	44.4	46.8	51.4	54.7	49.0	52.1
5	41.1	43.8	47.3	51.0	45.5	49.1
6	37.6	40.6	44.0	48.1	42.7	46.6
7	36.0	39.5	41.1	45.6	40.2	44.5
8	34.5	38.4	38.8	43.8	38.8	43.4
9	32.9	37.1	37.1	42.4	37.8	43.0
10	31.8	36.3	35.8	41.4	36.3	42.0
11	30.4	35.3	35.1	41.2	35.3	41.3
12	28.9	34.1	34.1	40.8	34.0	40.7
13	27.9	33.4	32.2	39.1	34.0	40.7
14	27.4	33.3	30.6	37.8		
15	26.6	32.9	29.3	36.7		
16	25.3	31.9	28.4	36.1		
17	24.1	30.9	26.7	34.3		
18	23.1	30.3	25.5	33.4		
19	22.5	29.9	24.7	32.7		
20	21.6	29.2	23.2	31.3		

Table 1b. Observed (obs.) and relative (rel.) survival of patients with ovarian cancer by period of diagnosis for period 1978-2011 (N=5,444).

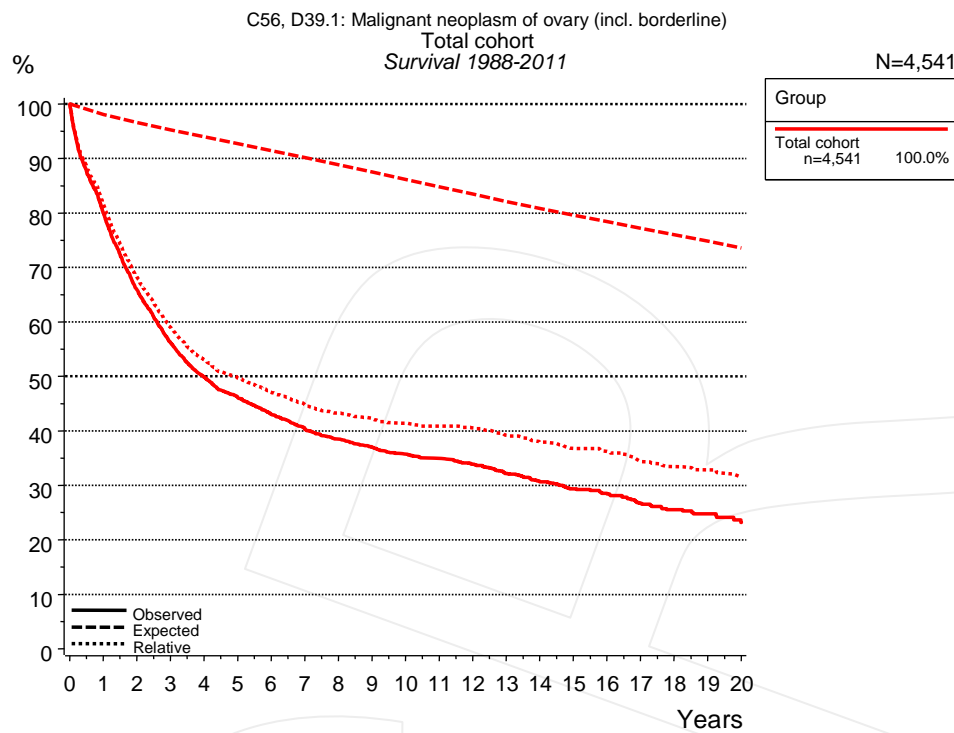


Figure 2a. Observed, expected and relative survival of the total cohort with ovarian cancer. Included in the evaluation are 4,541 cases diagnosed between 1988 and 2011.

Years	Group	
	Total cohort n=4,541	
	obs. %	rel. %
0	100.0	100.0
1	80.1	81.6
2	65.9	68.2
3	56.2	59.0
4	49.9	53.1
5	46.1	49.7
6	43.0	47.1
7	40.4	44.7
8	38.5	43.2
9	37.0	42.3
10	35.7	41.4
11	34.9	40.9
12	33.9	40.5
13	32.2	39.2
14	30.6	37.9
15	29.3	36.8
16	28.4	36.2
17	26.7	34.4
18	25.5	33.5
19	24.8	32.8
20	23.2	31.4

Table 2b. Observed (obs.) and relative (rel.) survival of the total cohort with ovarian cancer for period 1988-2011 (N=4,541).

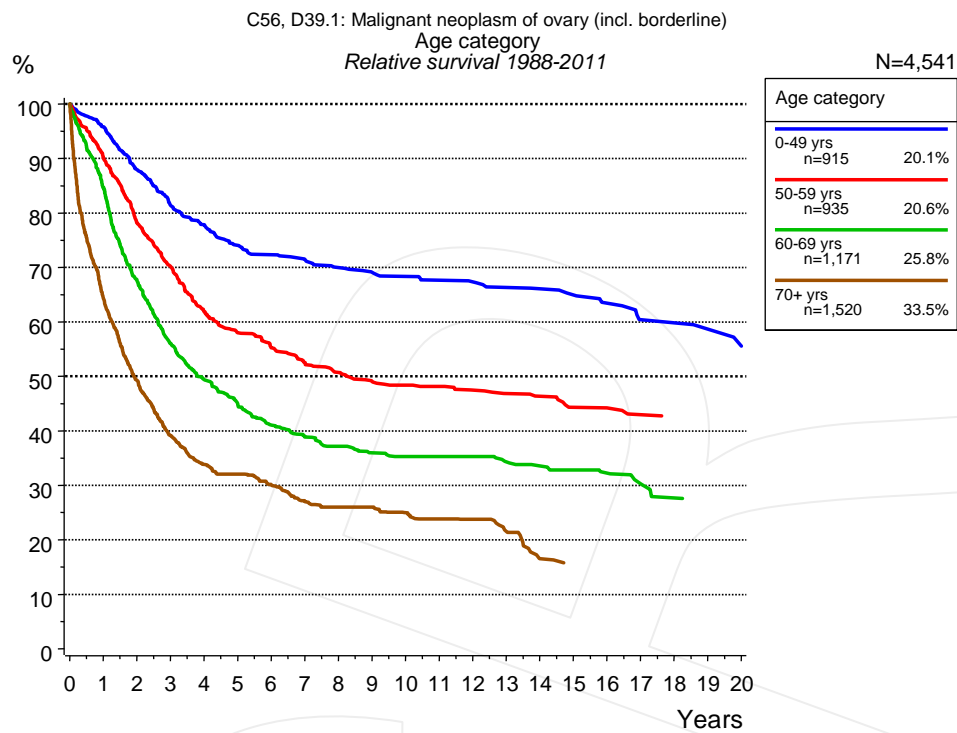


Figure 3a. Relative survival of patients with ovarian cancer by age category. Included in the evaluation are 4,541 cases diagnosed between 1988 and 2011.

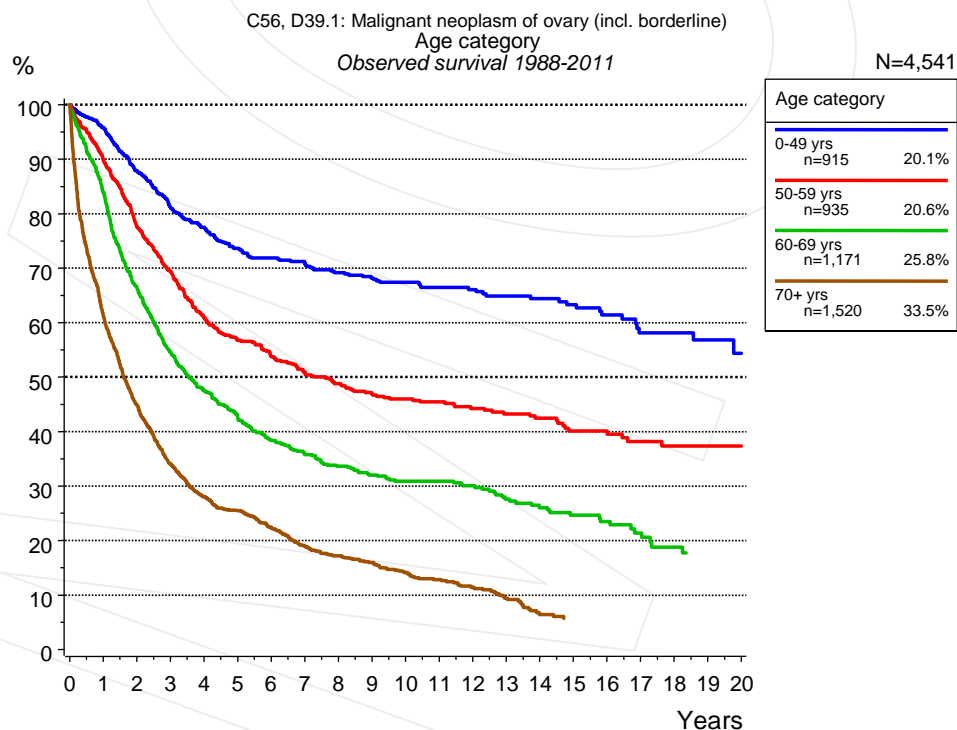


Figure 3b. Observed survival of patients with ovarian cancer by age category. Included in the evaluation are 4,541 cases diagnosed between 1988 and 2011.

Years	Age category							
	0-49 yrs n=915		50-59 yrs n=935		60-69 yrs n=1,171		70+ yrs n=1,520	
	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	95.8	95.8	89.9	90.2	83.9	84.6	61.4	64.5
2	87.9	88.0	77.6	78.2	66.4	67.7	44.9	49.3
3	81.2	81.4	69.4	70.2	54.5	56.1	34.1	39.2
4	77.5	77.8	60.8	61.9	47.5	49.4	28.1	33.8
5	73.7	74.0	56.7	58.0	42.6	44.9	25.5	32.0
6	71.9	72.3	53.7	55.3	38.5	41.0	22.4	30.1
7	70.8	71.4	50.9	52.5	35.7	38.8	19.0	27.0
8	69.2	70.0	48.8	50.7	33.6	37.1	17.2	26.0
9	68.2	69.1	46.9	49.1	32.0	36.0	16.0	26.0
10	67.4	68.3	46.0	48.4	30.9	35.3	14.1	25.0
11	66.5	67.6	45.4	48.2	30.9	35.3	12.8	23.8
12	66.1	67.3	44.2	47.5	30.0	35.3	11.4	23.7
13	64.9	66.3	43.2	46.8	27.6	34.3	9.4	21.6
14	64.4	66.1	42.4	46.3	26.0	33.6	6.4	16.5
15	63.3	64.9	40.1	44.3	24.6	32.8	5.7	15.8
16	61.4	63.4	39.5	44.2	23.5	32.2		
17	58.1	60.4	38.2	43.0	21.4	30.3		
18	58.1	59.8	37.3	42.6	18.8	27.7		
19	56.8	58.7	37.3	42.2				
20	54.4	55.5	37.3	41.8				

Table 3c. Observed (obs.) and relative (rel.) survival of patients with ovarian cancer by age category for period 1988-2011 (N=4,541).

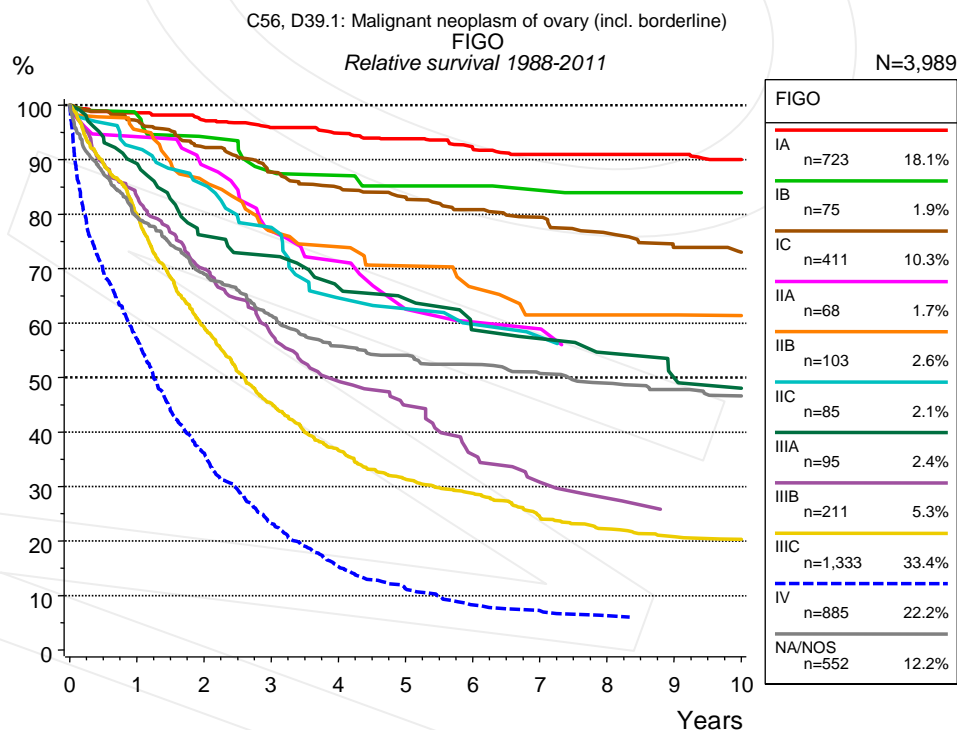


Figure 4a. Relative survival of patients with ovarian cancer by FIGO. For 4,152 of 4,541 cases diagnosed between 1988 and 2011 valid data could be obtained for this item. For a total of 3,989 cases an evaluable classification was established. The grey line represents the subgroup of 552 patients with missing values regarding FIGO (12.2% of 4,541 patients, the percent values of all other categories are related to n=3,989).

Years	FIGO													
	IA n=723		IB n=75		IC n=411		IIA n=68		IIB n=103		IIC n=85		IIIA n=95	
	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	97.5	98.6	97.2	98.2	96.0	97.1	92.6	94.2	93.9	95.5	91.6	92.1	89.2	89.2
2	94.9	97.2	91.3	94.2	90.1	92.3	86.0	88.8	83.7	86.0	83.9	85.4	74.4	76.0
3	92.4	95.9	85.0	87.8	84.4	87.7	73.3	76.9	73.2	76.8	75.5	77.6	70.7	72.3
4	90.3	94.9	83.3	87.1	80.9	84.9	67.7	71.3	70.4	74.0	61.0	64.6	64.0	66.5
5	88.3	93.8	79.6	85.2	78.4	83.1	57.2	62.5	65.6	70.5	59.3	62.6	61.1	64.4
6	85.3	92.0	79.6	85.2	75.2	80.8	54.6	60.2	60.4	66.5	55.4	59.8	54.5	58.8
7	83.3	91.0	77.3	84.4	73.1	79.4	54.6	58.9	54.8	61.5	53.4	57.5	52.7	57.1
8	82.5	91.0	74.9	83.9	69.4	76.5	48.8	54.4	54.8	61.5	51.2	56.0	49.0	54.5
9	81.3	91.0	74.9	83.9	66.0	73.8			54.8	61.5	51.2	55.6	44.9	49.8
10	78.8	90.0	74.9	83.9	64.5	73.0			52.5	61.4	51.2	55.2	42.8	48.0

cont'd	FIGO								
	IIIB n=211		IIIC n=1,333		IV n=885		NA/NOS n=552		
	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	81.8	83.2	78.7	79.9	55.4	57.0	77.6	79.4	
2	68.0	69.9	57.4	59.2	34.6	36.2	66.1	69.0	
3	55.8	58.0	43.3	45.3	21.9	23.2	58.0	61.3	
4	47.7	49.3	34.5	36.6	14.3	15.3	52.0	55.8	
5	41.9	44.9	29.2	31.3	10.3	11.2	49.8	54.1	
6	33.4	35.9	26.4	28.7	7.5	8.3	47.5	52.4	
7	28.9	30.8	21.9	24.3	6.4	7.2	45.5	50.7	
8	25.8	27.9	19.8	22.2	5.6	6.3	43.3	49.0	
9	22.9	24.5	18.4	20.8	5.2	5.7	41.6	47.8	
10			17.6	20.3			40.2	46.6	

Table 4b. Observed (obs.) and relative (rel.) survival of patients with ovarian cancer by FIGO for period 1988-2011 (N=3,989).

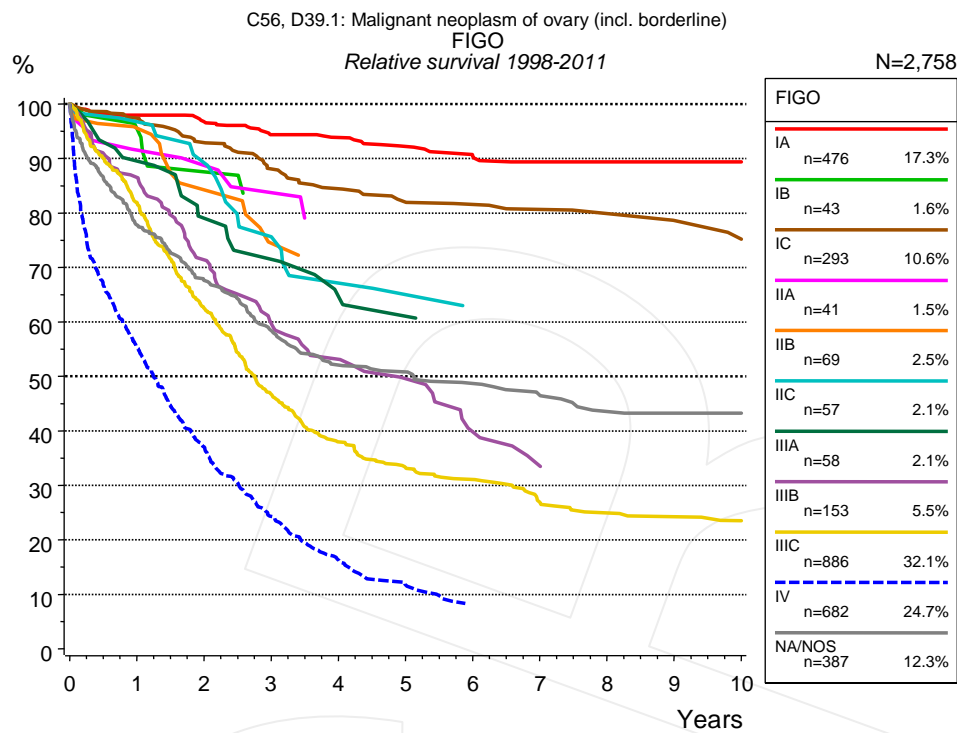


Figure 4c. Relative survival of patients with ovarian cancer by FIGO. For 2,858 of 3,145 cases diagnosed between 1998 and 2011 valid data could be obtained for this item. For a total of 2,758 cases an evaluable classification was established. The grey line represents the subgroup of 387 patients with missing values regarding FIGO (12.3% of 3,145 patients, the percent values of all other categories are related to n=2,758).

FIGO														
Years	IA n=476		IB n=43		IC n=293		IIA n=41		IIB n=69		IIC n=57		IIIA n=58	
	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	97.0	98.0	95.0	95.4	96.5	97.4	90.0	91.6	93.9	95.6	96.4	96.7	89.4	89.5
2	94.7	96.8	87.1	87.5	91.0	92.9	87.1	88.7	82.9	84.2	88.4	89.2	77.7	79.0
3	91.4	94.4			85.1	88.0	80.8	83.7	70.9	74.4	74.7	75.6	71.2	71.5
4	90.0	93.8			80.9	84.4	73.4	78.1	68.1	72.3	65.4	67.1	63.3	64.7
5	87.6	92.2			77.9	81.9			68.1	72.3	62.2	65.0	60.6	61.1
6	85.1	90.4			76.5	81.6			68.1	72.3	58.3	62.3		
7	83.3	89.4			74.9	80.6			68.1	72.3				
8	83.3	89.4			73.9	79.9			68.1	72.3				
9	83.3	89.4			70.8	78.6			68.1	72.3				
10	81.7	89.4			68.0	75.1								

cont'd Years	FIGO							
	IIIB n=153		IIIC n=886		IV n=682		NA/NOS n=387	
	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	85.5	86.5	80.6	81.9	53.7	55.3	75.8	77.8
2	69.7	71.4	60.5	62.5	35.4	37.0	64.5	67.6
3	57.6	59.6	44.7	46.7	22.8	24.3	55.0	58.4
4	51.0	53.1	35.7	38.0	15.2	16.3	48.3	52.1
5	46.4	49.6	30.9	33.2	10.7	11.7	46.6	50.8
6	37.2	39.8	28.6	31.1	7.4	8.1	43.9	48.7
7	32.1	33.6	24.1	26.8			41.7	46.5
8	30.2	30.8	22.3	24.9			38.3	43.6
9			21.4	24.2			37.6	43.3
10			20.1	23.5			37.6	43.3

Table 4d. Observed (obs.) and relative (rel.) survival of patients with ovarian cancer by FIGO for period 1998-2011 (N=2,758).

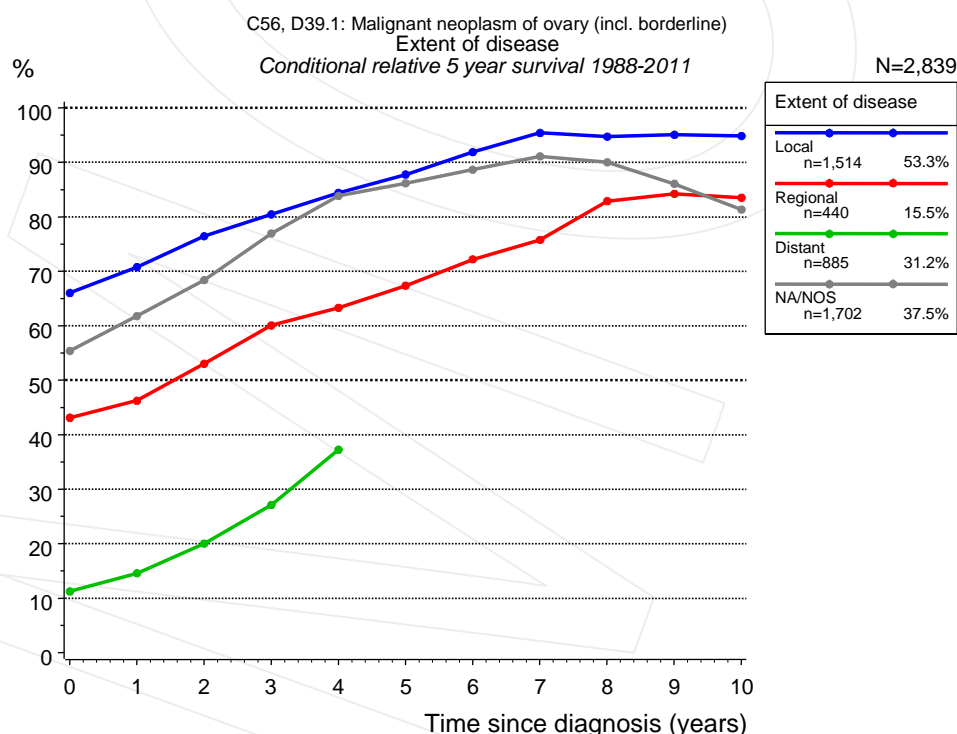


Figure 4e. Conditional relative 5-year survival of patients with ovarian cancer by extent of disease. For 4,152 of 4,541 cases diagnosed between 1988 and 2011 valid data could be obtained for this item. For a total of 2,839 cases an evaluable classification was established. The grey line represents the subgroup of 1,702 patients with missing values regarding extent of disease (37.5% of 4,541 patients, the percent values of all other categories are related to n=2,839).

Years	Extent of disease							
	Local		Regional		Distant		NA/NOS	
	n	Cond. surv. % 5 yrs	n	Cond. surv. % 5 yrs	n	Cond. surv. % 5 yrs	n	Cond. surv. % 5 yrs
0	1,514	66.0	440	43.1	885	11.2	1,702	55.4
1	1,261	70.8	349	46.2	458	14.6	1,364	61.8
2	1,041	76.4	233	53.0	256	20.0	1,075	68.4
3	886	80.4	165	60.1	146	27.1	821	76.9
4	767	84.4	136	63.3	82	37.3	634	83.8
5	662	87.8	111	67.4			521	86.1
6	572	91.9	94	72.2			431	88.6
7	510	95.4	80	75.8			355	91.1
8	449	94.7	68	82.9			299	90.0
9	401	95.1	57	84.2			254	86.1
10	358	94.8	51	83.5			206	81.3

Table 4f. Conditional relative 5-year survival of patients with ovarian cancer by extent of disease for period 1988-2011 (N=2,839).

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 4c). 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 80.4% (n=886).

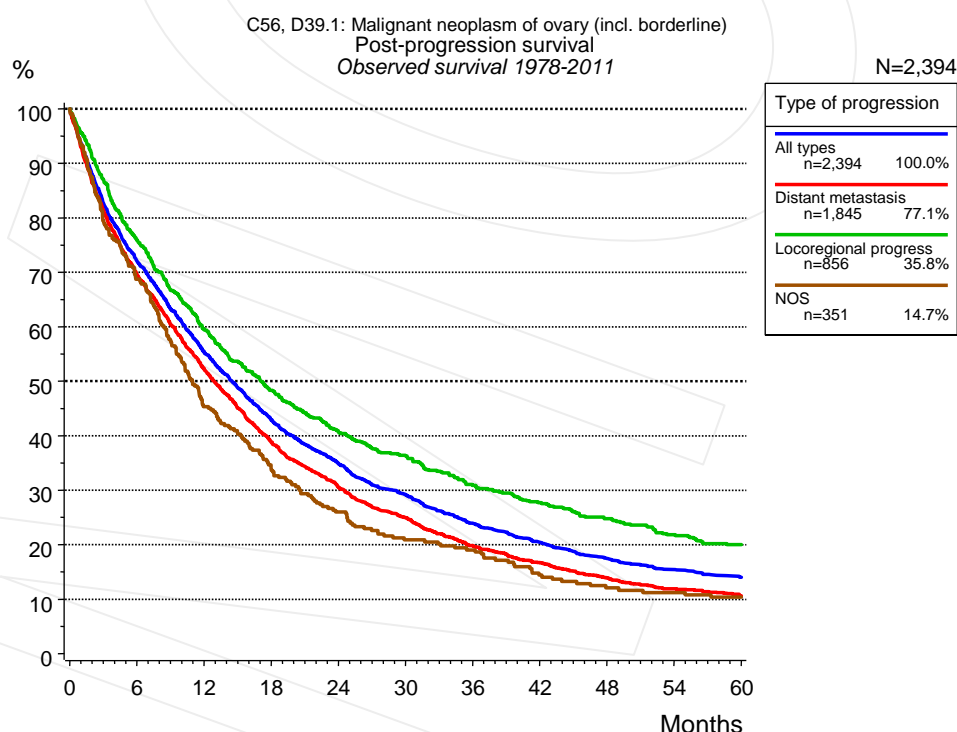


Figure 5a. Observed post-progression survival of 2,394 patients with ovarian cancer diagnosed between 1978 and 2011 (incl. M1). These 2,394 patients with documented progression events during their course of disease represent 44.0% of the totally 5,444 evaluated cases. Patients with cancer relapse documented via death certificates only were excluded (n=561, 10.3%). 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 "All types" 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.

Months	Type of progression			NOS n=351 %
	All types n=2,394 %	Distant metastasis n=1,845 %	Locoregional progress n=856 %	
0	100.0	100.0	100.0	100.0
12	55.3	52.2	59.5	45.4
24	34.9	30.6	40.8	26.0
36	23.9	19.8	30.9	19.0
48	17.4	13.9	24.8	12.1
60	14.0	10.6	20.0	10.4

Table 5b. Observed post-progression survival of patients with ovarian cancer for period 1978-2011 (N=2,394).

Shortcuts

AS	Assembled survival chart (observed, expected, relative)
CS	Conditional survival
DCO	Death certificate only. The death certificate provides the only notification to the registry.
MCR	Munich Cancer Registry, Germany (Tumorregister München)
NA	Not available
NCI	National Cancer Institute, USA
NOS	Not otherwise specified
OS	Observed/overall survival (Kaplan-Meier estimate)
PPS	Post-progression survival
RS	Relative Survival. Ratio of observed and expected survival (derived from the normal population)
SEER	Surveillance, Epidemiology, and End Results, USA
TTP	Time to progression Date of entry: Date of diagnosis Event (Progression): First local recurrence, lymph node relapse or distant metastasis, unspecified recurrence First all-cause recurrence is illustrated by survival curves (Kaplan-Meier estimate). First local recurrence, lymph node relapse or distant metastasis are depicted cumulatively, where applicable ("reverse" Kaplan-Meier estimate).
UICC	Union for International Cancer Control, Geneva

Recommended Citation

Munich Cancer Registry. Survival C56, D39.1: Ovarian cancer [Internet]. 2013 [updated 2013 Apr 1; cited 2013 May 1]. Available from: http://www.tumorregister-muenchen.de/en/facts/surv/surv_C56D_E.pdf

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