

Munich Cancer Registry



- ▶ Baseline statistics
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Munich Cancer Registry at Munich Cancer Center
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Munich, 81377
Germany

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

Cancer statistics: Survival

C21: Anal cancer

Year of diagnosis	1978-1987	1988-1997	1998-2011
Patients	115	249	1,061
Diseases	115	249	1,061
Creation date	04/01/2013		
Export date	01/03/2013		
Population	4.5 m		



http://www.tumorregister-muenchen.de/en/facts/surv/surv_C21__E.pdf

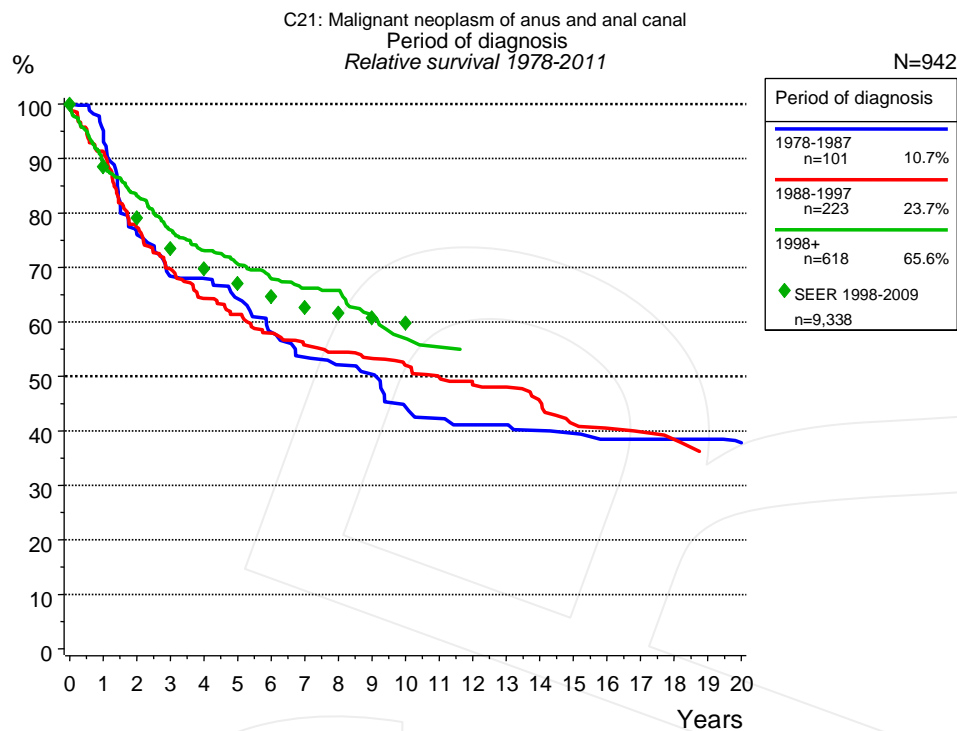


Figure 1a. Relative survival of patients with anal cancer by period of diagnosis. Included in the evaluation are 942 cases diagnosed between 1978 and 2011.

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 1998 to 2009, and are represented by green 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					
	1978-1987		1988-1997		1998+	
	n=101		n=223		n=618	
	obs. %	rel. %	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0	100.0	100.0
1	92.1	93.8	88.3	91.2	87.1	89.4
2	71.3	76.0	72.6	77.4	79.0	83.1
3	62.4	68.4	64.0	69.7	71.4	76.8
4	60.4	67.9	57.2	64.3	66.5	73.1
5	55.4	64.3	53.6	61.4	62.9	70.6
6	48.3	58.1	49.4	57.9	59.3	67.9
7	43.3	53.5	46.2	55.7	56.4	66.2
8	40.3	52.1	44.3	54.4	55.4	65.8
9	38.3	50.4	42.4	53.3	50.7	61.3
10	32.2	44.4	40.1	52.0	46.5	57.0
11	30.2	42.3	37.7	49.8	44.3	55.4
12	28.2	41.1	35.6	48.5	42.6	54.5
13	28.2	41.1	35.1	48.0		
14	26.2	40.0	32.2	45.4		
15	25.2	39.5	28.6	41.2		
16	23.2	38.4	27.2	40.5		
17	23.2	38.4	26.3	39.8		
18	23.2	38.4	25.1	38.4		
19	22.2	38.4				
20	20.1	37.8				

Table 1b. Observed (obs.) and relative (rel.) survival of patients with anal cancer by period of diagnosis for period 1978-2011 (N=942).

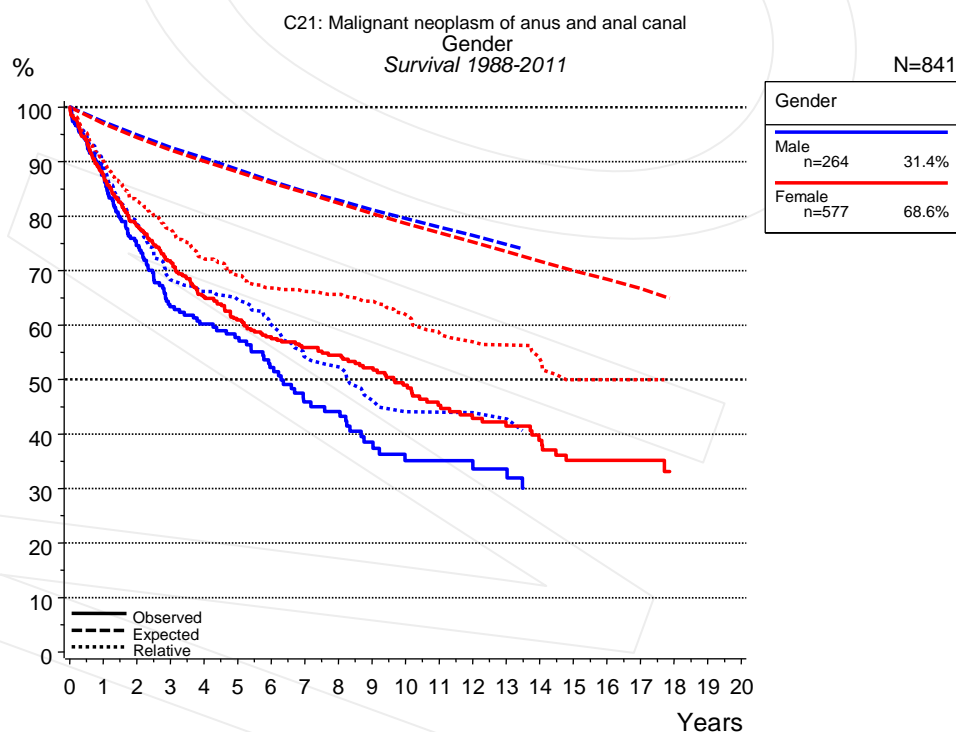


Figure 2a. Survival of patients with anal cancer by gender. Included in the evaluation are 841 cases diagnosed between 1988 and 2011.

Years	Gender			
	Male n=264		Female n=577	
	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0
1	87.5	89.6	87.5	90.1
2	74.6	78.4	78.2	82.8
3	63.4	68.3	71.8	77.7
4	60.2	66.2	65.2	72.2
5	57.7	64.6	60.9	69.1
6	52.2	60.0	57.8	66.8
7	45.9	54.1	55.9	66.2
8	44.2	52.3	54.5	65.7
9	38.5	46.2	52.1	64.3
10	35.1	44.1	48.9	61.9
11	35.1	44.0	45.3	58.5
12	33.6	43.9	42.9	56.9
13	33.6	42.8	41.5	56.4
14	30.1	38.7	38.9	53.8
15			35.2	50.0
16			35.2	50.0
17			35.2	50.0
18			33.1	48.9

Table 2b. Observed (obs.) and relative (rel.) survival of patients with anal cancer by gender for period 1988-2011 (N=841).

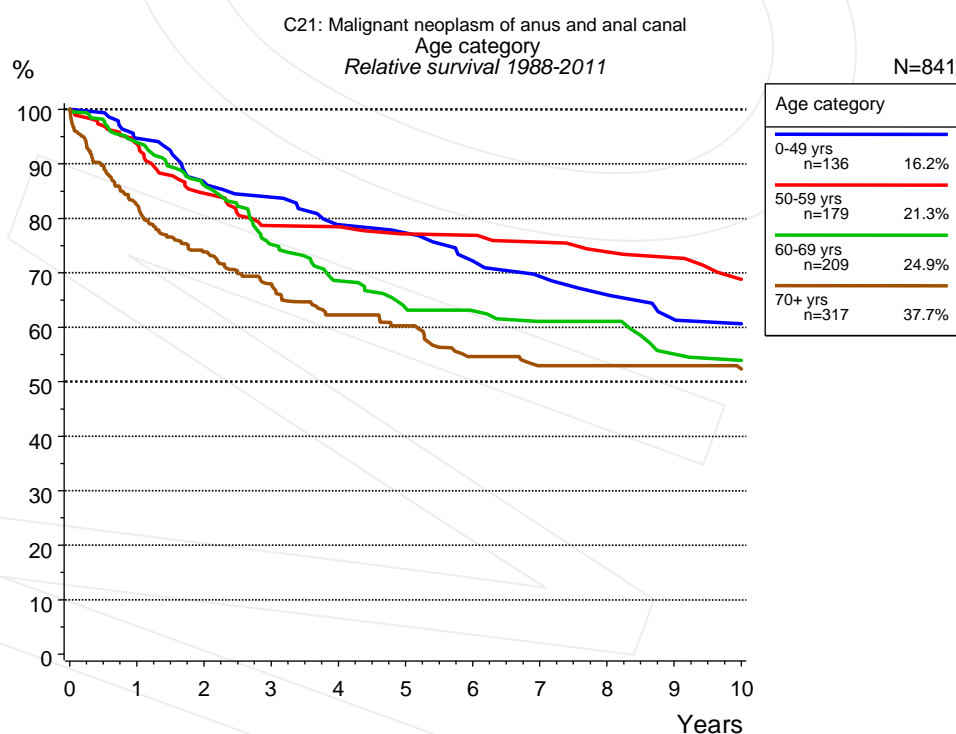


Figure 3a. Relative survival of patients with anal cancer by age category. Included in the evaluation are 841 cases diagnosed between 1988 and 2011.

Years	Age category							
	0-49 yrs n=136		50-59 yrs n=179		60-69 yrs n=209		70+ yrs n=317	
	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	94.6	94.7	93.6	93.6	93.2	94.0	77.2	82.5
2	86.5	86.6	83.9	84.6	84.2	86.0	64.7	73.8
3	84.1	83.9	77.4	78.6	72.5	75.2	56.1	67.9
4	78.2	78.8	77.4	78.4	65.2	68.5	48.5	62.2
5	77.0	77.3	74.8	77.2	59.8	63.5	44.1	60.2
6	72.4	72.2	74.8	76.9	58.1	63.0	36.8	54.6
7	68.6	69.3	72.8	75.6	55.2	61.1	32.9	53.0
8	65.9	66.0	70.5	73.8	55.2	61.1	31.6	53.0
9	61.4	61.4	69.2	72.8	48.6	55.0	29.5	53.0
10	59.8	60.7	63.9	68.8	47.1	53.9	25.6	52.3

Table 3b. Observed (obs.) and relative (rel.) survival of patients with anal cancer by age category for period 1988-2011 (N=841).

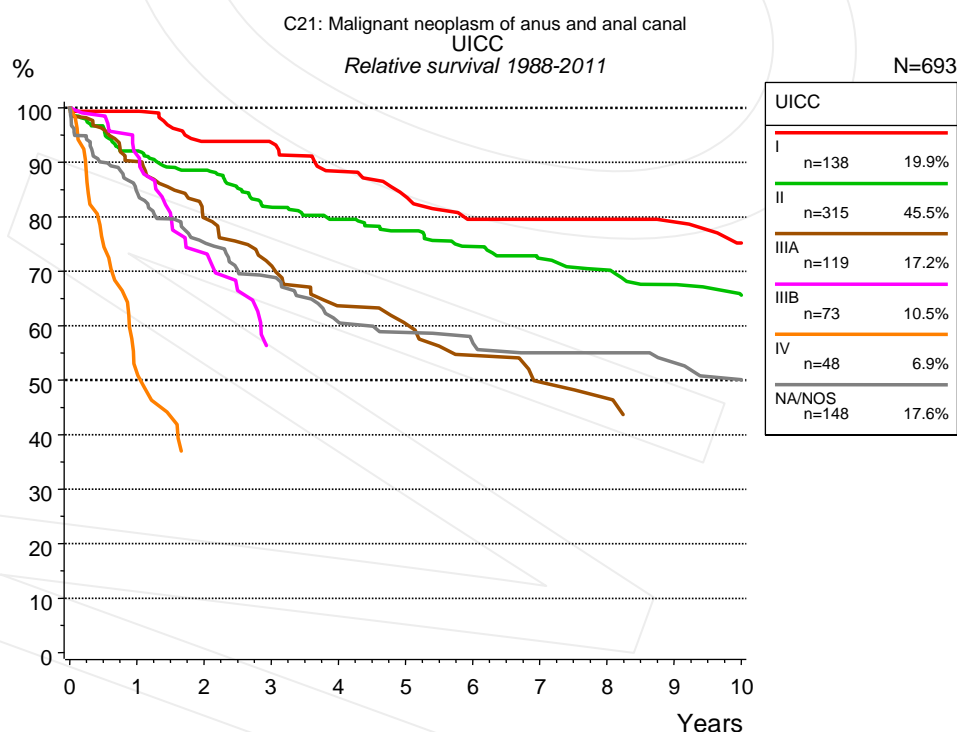


Figure 4a. Relative survival of patients with anal cancer by UICC. For 727 of 841 cases diagnosed between 1988 and 2011 valid data could be obtained for this item. For a total of 693 cases an evaluable classification was established. The grey line represents the subgroup of 148 patients with missing values regarding UICC (17.6% of 841 patients, the percent values of all other categories are related to n=693).

Years	UICC											
	I n=138		II n=315		IIIA n=119		IIIB n=73		IV n=48		NA/NOS n=148	
	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
1	98.5	99.4	90.3	92.1	88.0	90.2	90.0	91.3	51.0	51.3	81.4	84.5
2	89.9	93.9	84.5	88.5	75.2	79.7	71.4	73.3			70.4	75.3
3	88.2	93.6	76.3	81.8	65.8	71.0	52.5	56.3			62.7	69.0
4	81.7	88.3	72.5	79.5	56.5	63.6	52.5	55.8			54.1	60.6
5	76.3	83.7	69.2	77.4	52.1	60.3					51.2	58.7
6	70.2	79.5	65.1	74.5	46.0	54.5					49.2	56.8
7	70.2	79.5	61.7	72.3	40.5	49.6					45.9	55.0
8	70.2	79.5	59.1	70.2	38.4	46.7					45.9	55.0
9	67.1	79.1	55.7	67.5							43.1	53.2
10	61.7	75.2	52.4	65.6							39.8	50.1

Table 4b. Observed (obs.) and relative (rel.) survival of patients with anal cancer by UICC for period 1988-2011 (N=693).

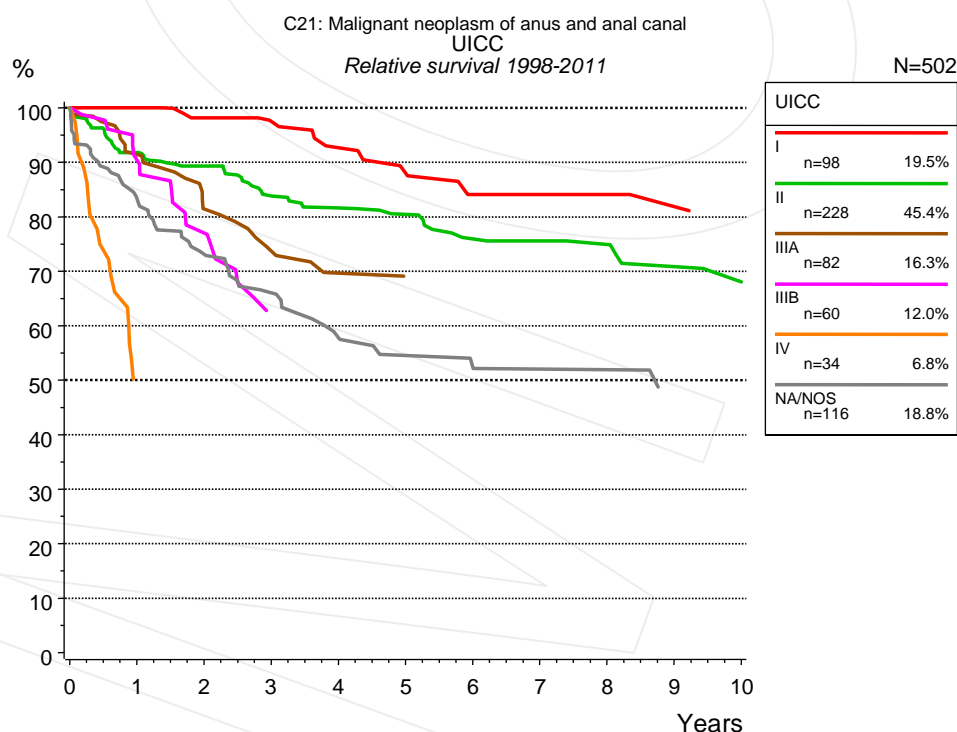


Figure 4c. Relative survival of patients with anal cancer by UICC. For 527 of 618 cases diagnosed between 1998 and 2011 valid data could be obtained for this item. For a total of 502 cases an evaluable classification was established. The grey line represents the subgroup of 116 patients with missing values regarding UICC (18.8% of 618 patients, the percent values of all other categories are related to n=502).

Years	UICC											
	I n=98		II n=228		IIIA n=82		IIIB n=60		IV n=34		NA/NOS n=116	
	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
1	98.9	100.0	90.1	91.8	89.9	91.4	89.4	90.3			80.6	83.2
2	94.4	98.1	85.7	89.3	77.3	81.4	75.6	77.0			69.1	73.1
3	91.8	97.5	78.6	83.8	68.8	73.7	59.0	62.7			60.9	66.0
4	85.9	92.7	74.7	81.6	62.9	69.6	59.0	61.2			52.6	57.7
5	80.6	88.0	72.3	80.4	60.2	69.1					48.3	54.5
6	74.1	84.1	66.9	76.0	60.2	68.6					46.7	52.2
7	74.1	84.1	65.8	75.6							45.0	52.0
8	74.1	84.1	64.5	74.9							45.0	51.9
9	71.0	81.8	59.9	70.9							40.0	46.2
10			57.5	68.1								

Table 4d. Observed (obs.) and relative (rel.) survival of patients with anal cancer by UICC for period 1998-2011 (N=502).

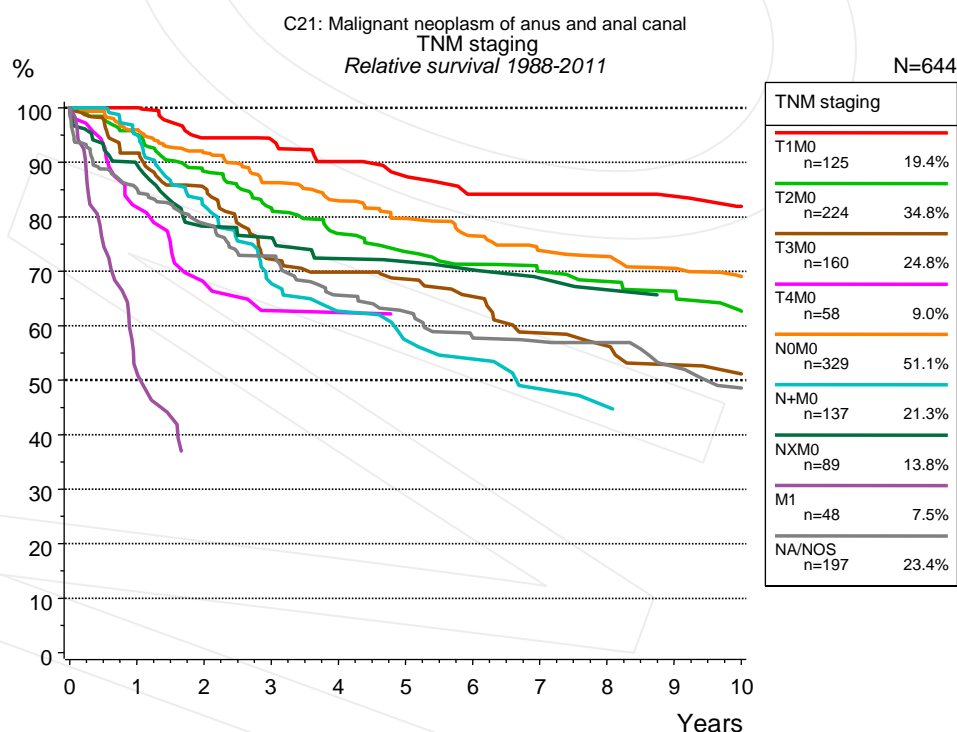


Figure 4e. Relative survival of patients with anal cancer by TNM staging. For 727 of 841 cases diagnosed between 1988 and 2011 valid data could be obtained for this item. For a total of 644 cases an evaluable classification was established. The accumulated percentage exceeds the 100% value because patients are potentially considered in more than one subgroup. The grey line represents the subgroup of 197 patients with missing values regarding TNM staging (23.4% of 841 patients, the percent values of all other categories are related to n=644).

Years	TNM staging													
	T1M0 n=125		T2M0 n=224		T3M0 n=160		T4M0 n=58		N0M0 n=329		N+M0 n=137		NXM0 n=89	
	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	99.2	100.0	93.2	95.1	89.7	91.7	80.1	81.8	94.1	95.9	93.2	95.0	87.0	89.6
2	90.4	94.5	84.5	88.3	81.0	85.4	64.6	67.9	88.0	91.8	78.5	82.0	73.1	78.3
3	88.4	94.2	76.9	81.6	66.7	72.2	58.1	62.8	81.2	86.3	64.0	67.8	70.5	76.1
4	83.1	90.1	70.6	76.9	63.3	69.8	58.1	62.5	76.7	83.0	57.1	62.7	64.9	72.3
5	79.4	87.4	66.2	73.6	60.4	68.5			72.1	79.7	51.1	57.3	63.2	71.7
6	73.7	84.2	63.1	71.3	56.2	65.3			67.5	76.5	47.8	53.9	61.5	70.2
7	73.7	84.2	60.4	69.9	49.2	58.7			63.6	73.8	41.7	48.4	57.5	68.7
8	73.7	84.2	58.4	68.1	46.5	56.3			61.8	72.7	39.4	45.2	55.3	66.6
9	70.1	83.8	56.1	66.3	42.5	52.8			58.6	70.5			52.7	65.1
10	65.9	81.9	51.1	62.7	40.7	51.1			55.7	69.1				

Years	TNM staging			
	M1 n=48		NA/NOS n=197	
	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0
1	51.0	51.3	82.0	85.1
2			73.8	78.7
3			66.3	72.8
4			58.1	65.6
5			54.3	62.6
6			49.5	57.7
7			47.8	57.1
8			46.9	56.9
9			42.4	52.4
10			38.3	48.6

Table 4f. Observed (obs.) and relative (rel.) survival of patients with anal cancer by TNM staging for period 1988-2011 (N=1,170).

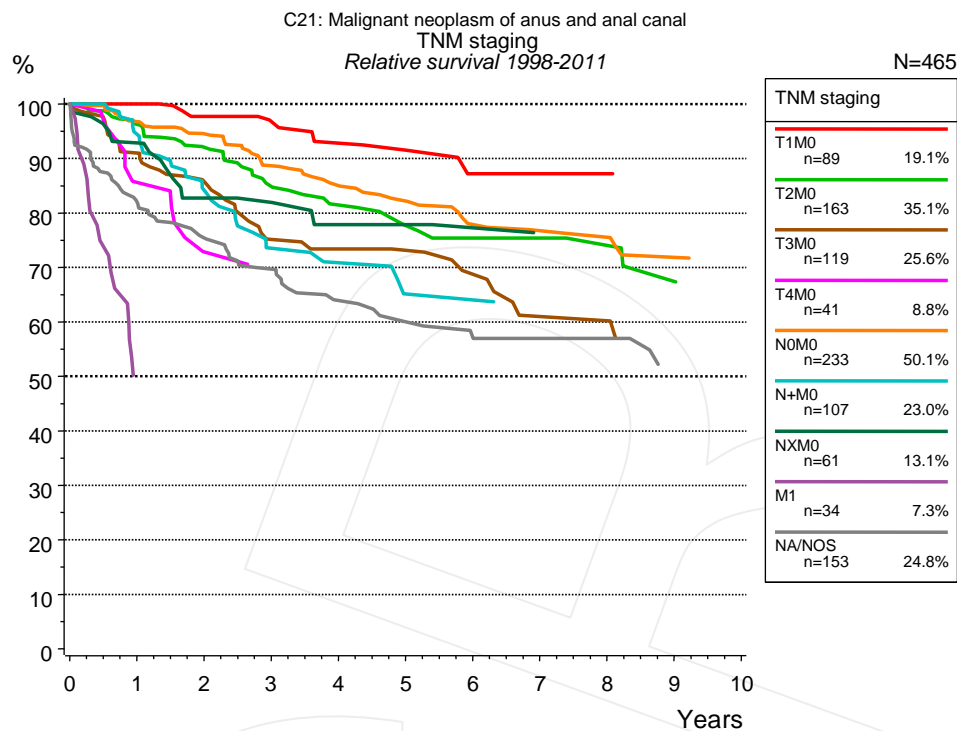


Figure 4g. Relative survival of patients with anal cancer by TNM staging. For 527 of 618 cases diagnosed between 1998 and 2011 valid data could be obtained for this item. For a total of 465 cases an evaluable classification was established. The accumulated percentage exceeds the 100% value because patients are potentially considered in more than one subgroup. The grey line represents the subgroup of 153 patients with missing values regarding TNM staging (24.8% of 618 patients, the percent values of all other categories are related to n=465).

		TNM staging													
		T1M0 n=89		T2M0 n=163		T3M0 n=119		T4M0 n=41		N0M0 n=233		N+M0 n=107		NXM0 n=61	
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		98.8	100.0	94.3	96.3	89.6	91.0	83.8	85.6	95.2	96.8	93.1	94.5	91.0	92.9
2		93.7	97.7	88.1	92.1	82.0	85.7	69.4	72.9	90.9	94.5	81.1	84.2	77.8	82.8
3		90.6	96.8	80.1	84.9	70.2	75.1	65.9	70.0	83.8	88.7	69.1	73.5	75.8	82.0
4		85.7	92.8	75.1	81.5	67.5	73.4	65.9	68.3	79.2	85.0	65.5	70.9	68.9	77.9
5		83.7	91.5	70.1	77.7	65.9	73.2			75.4	82.2	58.2	65.1	68.9	77.9
6		75.7	87.2	67.3	75.4	60.3	68.8			69.6	77.9	58.2	64.0	65.9	77.3
7		75.7	87.2	67.3	75.4	52.0	61.0			67.4	76.7			62.0	75.7
8		75.7	87.2	65.1	74.0	52.0	60.2			66.1	75.5				
9		71.9	84.1	59.6	67.5	46.8	54.6			61.7	71.8				
10				56.3	63.3					60.0	71.3				

cont'd	TNM staging			
	M1		NA/NOS	
	n=34		n=153	
Years	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0
1			79.4	81.9
2			71.4	75.4
3			64.5	69.7
4			57.5	63.9
5			53.0	60.0
6			50.5	57.0
7			49.1	57.0
8			49.1	57.0
9			42.9	50.2

Table 4h. Observed (obs.) and relative (rel.) survival of patients with anal cancer by TNM staging for period 1998-2011 (N=847).

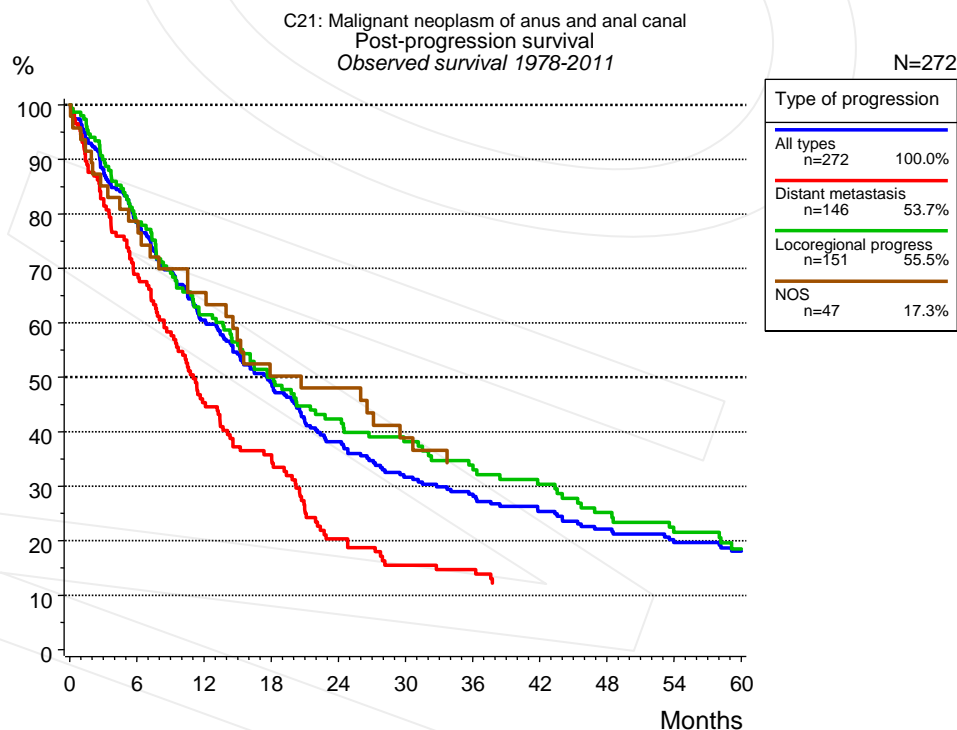


Figure 5a. Observed post-progression survival of 272 patients with anal cancer diagnosed between 1978 and 2011 (incl. M1). These 272 patients with documented progression events during their course of disease represent 28.9% of the totally 942 evaluated cases. Patients with cancer relapse documented via death certificates only were excluded (n=63, 6.7%). 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=47 %
	All types n=272 %	Distant metastasis n=146 %	Locoregional progress n=151 %	
0	100.0	100.0	100.0	100.0
12	60.5	45.3	61.5	65.5
24	38.1	20.3	42.3	48.0
36	28.5	14.7	33.8	
48	22.1		25.2	
60	18.1		18.5	

Table 5b. Observed post-progression survival of patients with anal cancer for period 1978-2011 (N=272).

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

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