

Munich Cancer Registry



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- ▶ [Selection Matrix](#)
- ▶ [Homepage](#)
- ▶ [Deutsch](#)

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

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

Cancer statistics: Survival

C21: Anal cancer

Year of diagnosis	1988-2012
Patients	1,433
Diseases	1,433
Cases evaluated	871
Creation date	03/25/2014
Export date	02/12/2014
Population	4.5 m



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

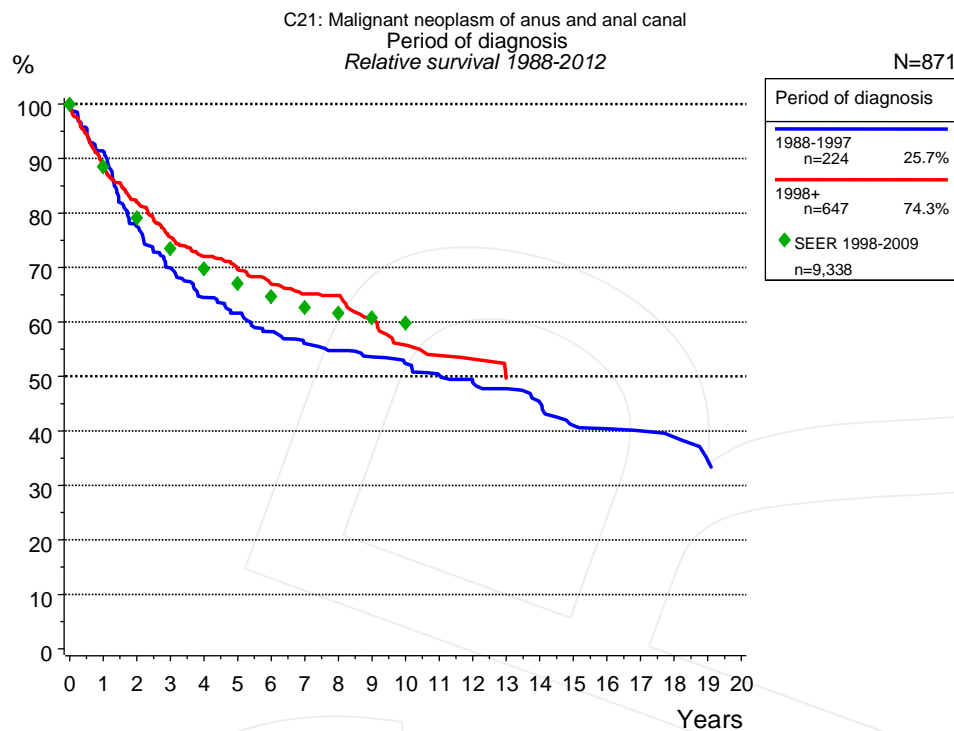


Figure 1a. Relative survival of patients with anal cancer by period of diagnosis. Included in the evaluation are 871 cases diagnosed between 1988 and 2012.

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 1988, 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=224		1998+ n=647	
	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0
1	88.4	91.2	86.2	88.6
2	72.7	77.5	77.7	81.9
3	64.2	69.9	70.1	75.5
4	57.4	64.5	65.5	72.0
5	53.8	61.6	61.9	69.6
6	49.7	58.2	58.4	66.9
7	46.5	56.0	55.4	65.1
8	44.6	54.7	54.5	64.9
9	42.7	53.6	49.9	60.5
10	40.4	52.3	45.1	55.7
11	37.9	50.1	42.5	53.9
12	35.9	48.8	41.3	53.2
13	34.9	47.7		
14	32.0	45.1		
15	28.4	41.0		
16	27.2	40.4		
17	26.4	40.0		
18	25.4	38.8		
19	21.8	34.5		

Table 1b. Observed (obs.) and relative (rel.) survival of patients with anal cancer by period of diagnosis for period 1988-2012 (N=871).

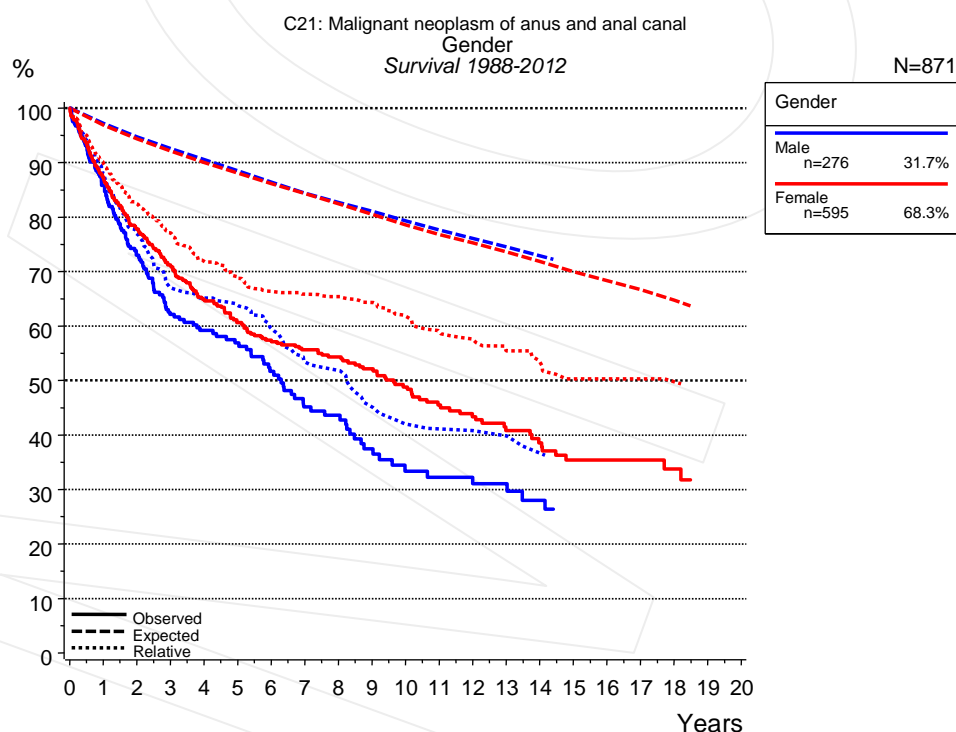


Figure 2a. Survival of patients with anal cancer by gender. Included in the evaluation are 871 cases diagnosed between 1988 and 2012.

Years	Gender			
	Male n=276		Female n=595	
	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0
1	85.8	88.1	87.2	89.8
2	73.0	76.9	77.8	82.4
3	62.1	67.0	71.2	77.1
4	59.2	65.1	64.8	71.8
5	56.9	63.8	60.6	68.8
6	51.7	59.5	57.4	66.3
7	45.2	53.4	55.6	65.9
8	43.6	51.8	54.3	65.4
9	37.5	45.1	52.1	64.3
10	33.4	42.0	48.8	61.8
11	32.2	41.1	45.5	58.9
12	31.1	40.8	43.4	57.5
13	31.1	39.8	40.8	55.4
14	28.0	36.7	38.6	53.3
15			35.4	50.3
16			35.4	50.3
17			35.4	50.3
18			33.7	49.7

Table 2b. Observed (obs.) and relative (rel.) survival of patients with anal cancer by gender for period 1988-2012 (N=871).

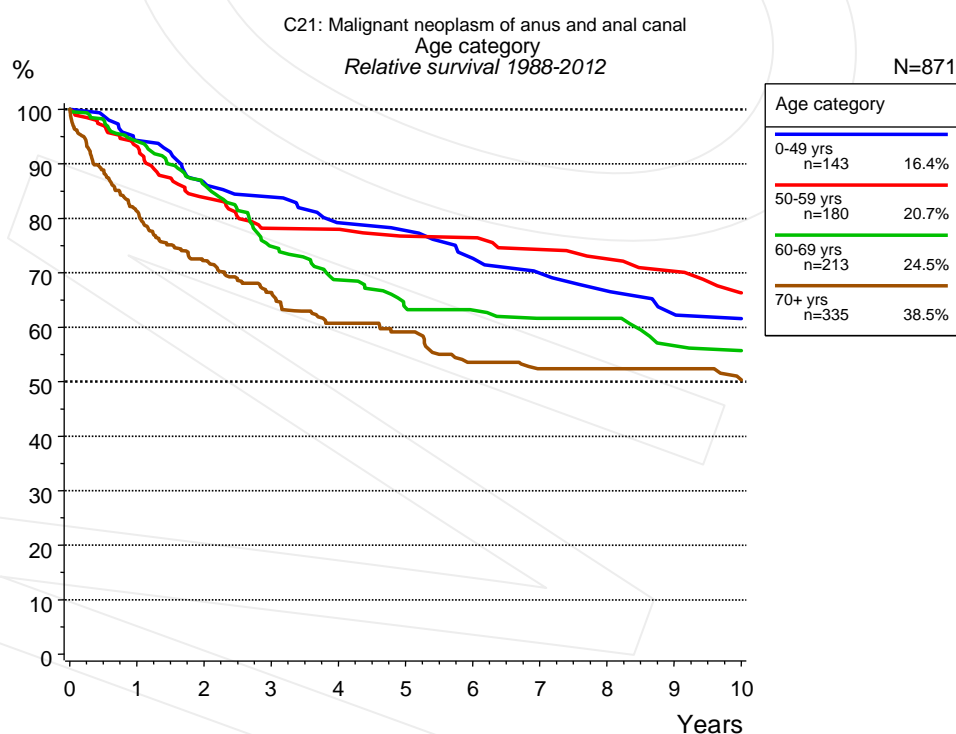


Figure 3a. Relative survival of patients with anal cancer by age category. Included in the evaluation are 871 cases diagnosed between 1988 and 2012.

Years	Age category							
	0-49 yrs n=143		50-59 yrs n=180		60-69 yrs n=213		70+ yrs n=335	
	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	94.2	94.3	93.1	93.1	93.4	94.1	76.0	81.3
2	86.5	86.6	83.1	83.8	84.3	86.2	63.2	72.2
3	84.0	83.9	76.9	78.1	72.2	74.8	54.8	66.4
4	78.5	79.2	76.9	78.0	65.4	68.7	47.4	60.7
5	77.4	77.7	74.4	76.7	59.9	63.6	43.3	59.1
6	72.8	72.6	74.4	76.4	58.3	63.1	36.2	53.6
7	69.2	69.9	71.5	74.3	55.8	61.6	32.6	52.4
8	66.6	66.7	69.3	72.5	55.8	61.6	31.3	52.4
9	62.3	62.3	66.8	70.2	50.0	56.6	29.4	52.4
10	60.7	61.6	61.5	66.3	48.6	55.8	24.6	50.3

Table 3b. Observed (obs.) and relative (rel.) survival of patients with anal cancer by age category for period 1988-2012 (N=871).

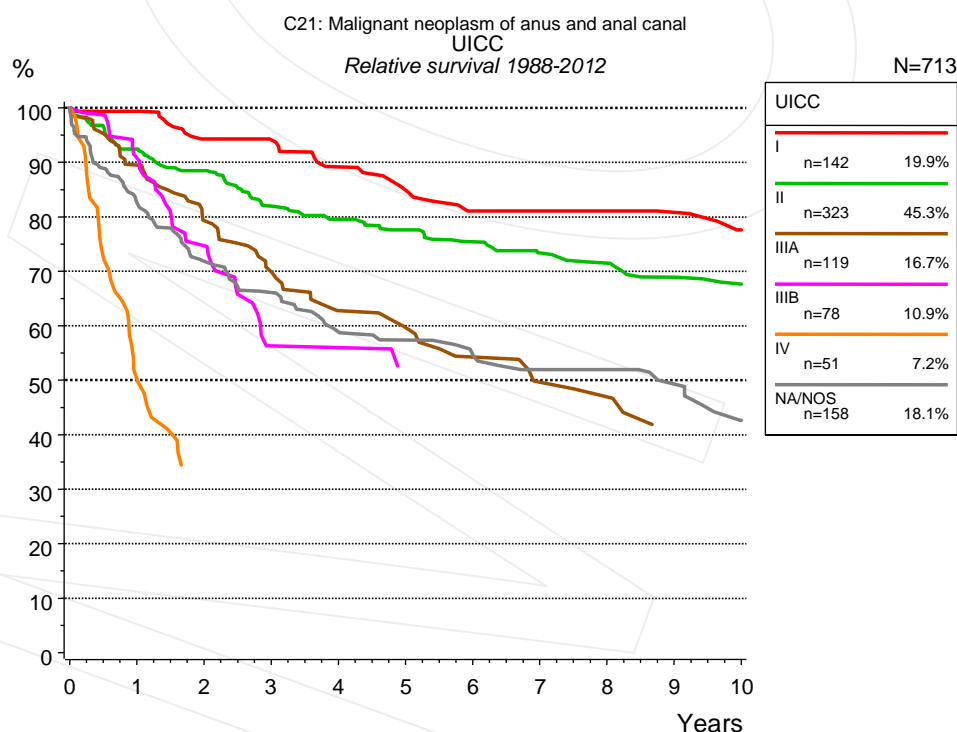


Figure 4a. Relative survival of patients with anal cancer by UICC. For 748 of 871 cases diagnosed between 1988 and 2012 valid data could be obtained for this item. For a total of 713 cases an evaluable classification was established. The grey line represents the subgroup of 158 patients with missing values regarding UICC (18.1% of 871 patients, the percent values of all other categories are related to n=713).

Years	UICC											
	I n=142		II n=323		IIIA n=119		IIIB n=78		IV n=51		NA/NOS n=158	
	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	98.6	99.4	90.2	92.4	87.2	89.5	89.4	90.7	49.8	50.1	79.4	82.6
2	90.2	94.3	84.3	88.5	74.6	79.3	72.5	74.7			67.1	71.8
3	88.6	94.1	76.5	81.9	64.6	69.9	52.6	56.3			60.0	66.1
4	82.4	89.1	72.5	79.5	55.5	62.7	52.6	56.0			52.4	58.9
5	77.4	84.9	69.4	77.6	51.4	59.6	46.8	51.7			49.9	57.4
6	71.6	81.0	65.9	75.4	45.6	54.3					47.0	54.6
7	71.6	81.0	62.6	73.4	40.3	49.6					43.2	52.0
8	71.6	81.0	60.2	71.5	38.5	46.9					43.2	52.0
9	68.7	80.8	56.9	68.9	32.3	41.4					39.6	49.3
10	63.7	77.6	54.5	67.7	32.3	40.2					32.7	42.6

Table 4b. Observed (obs.) and relative (rel.) survival of patients with anal cancer by UICC for period 1988-2012 (N=713).

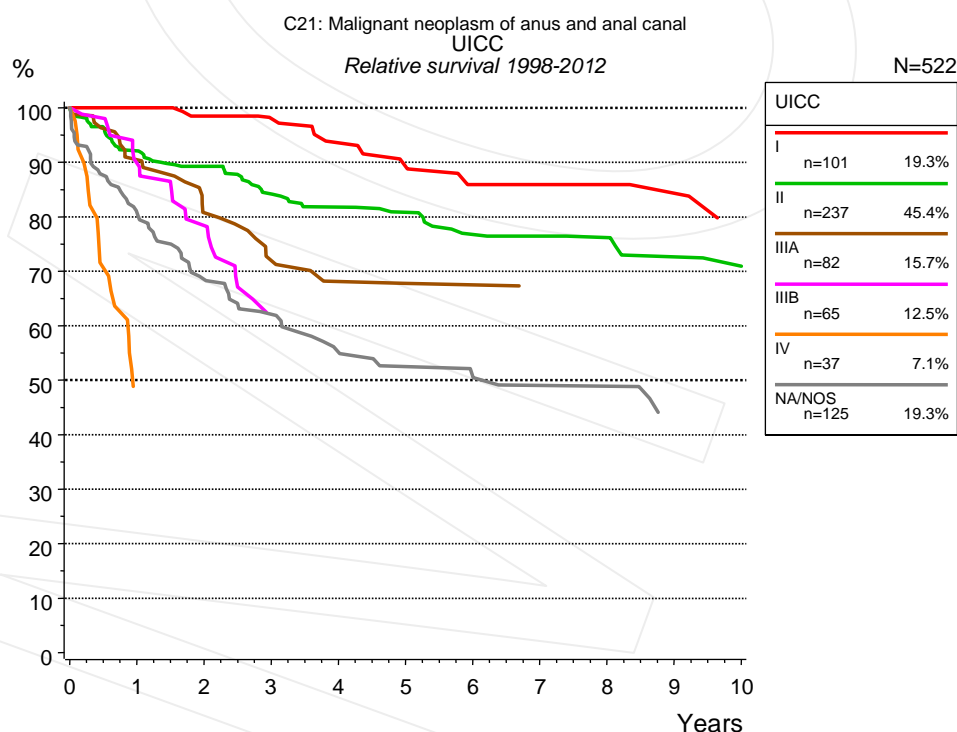


Figure 4c. Relative survival of patients with anal cancer by UICC. For 548 of 647 cases diagnosed between 1998 and 2012 valid data could be obtained for this item. For a total of 522 cases an evaluable classification was established. The grey line represents the subgroup of 125 patients with missing values regarding UICC (19.3% of 647 patients, the percent values of all other categories are related to n=522).

Years	UICC											
	I n=101		II n=237		IIIA n=82		IIIB n=65		IV n=37		NA/NOS n=125	
	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	99.0	100.0	90.0	92.1	88.8	90.5	88.8	89.8			78.0	80.7
2	94.6	98.5	85.5	89.3	76.4	80.7	76.7	78.3			64.7	68.5
3	92.1	98.0	78.8	84.2	66.9	71.9	58.8	62.4			57.3	62.1
4	86.6	93.6	74.7	81.8	61.3	68.1	58.8	61.4			50.1	55.1
5	81.7	89.2	72.5	80.8	58.7	67.8					46.5	52.5
6	75.7	85.9	67.4	76.8	58.7	67.5					45.1	50.5
7	75.7	85.9	66.5	76.5							42.1	49.0
8	75.7	85.9	65.3	76.2							42.1	48.9
9	72.8	84.3	61.0	72.7							36.1	42.5
10	65.3	79.3	59.0	70.9								

Table 4d. Observed (obs.) and relative (rel.) survival of patients with anal cancer by UICC for period 1998-2012 (N=522).

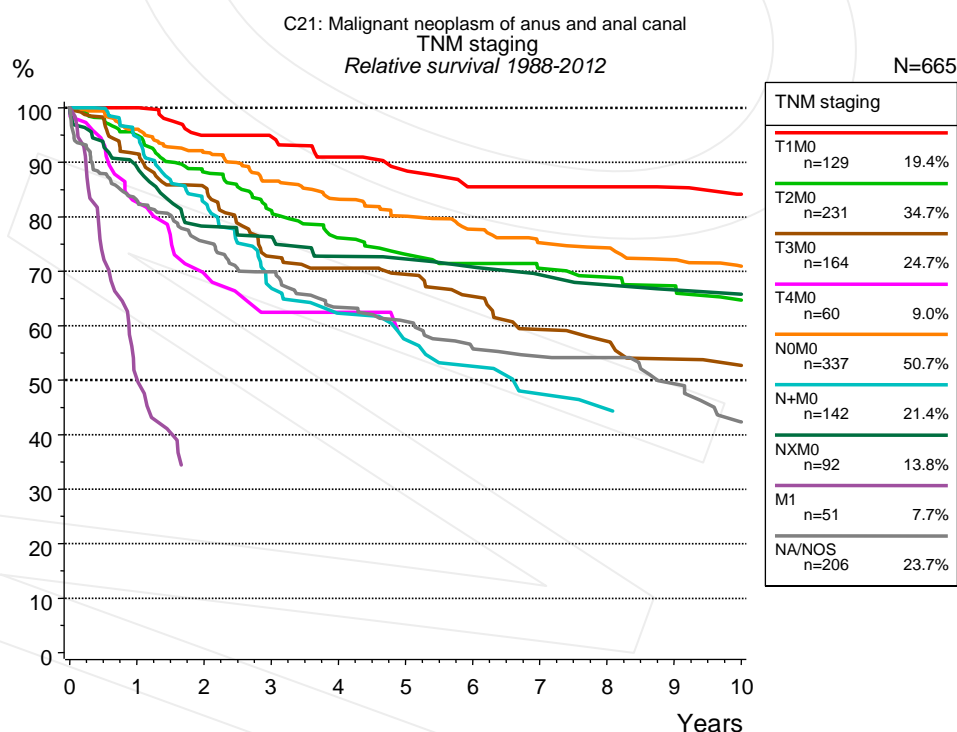


Figure 4e. Relative survival of patients with anal cancer by TNM staging. For 748 of 871 cases diagnosed between 1988 and 2012 valid data could be obtained for this item. For a total of 665 cases an evaluable classification was established. The accumulated percentage exceeds the 100% value because patients are potentially considered in more than one subgroup. The grey line represents the subgroup of 206 patients with missing values regarding TNM staging (23.7% of 871 patients, the percent values of all other categories are related to n=665).

Years	TNM staging													
	T1M0 n=129		T2M0 n=231		T3M0 n=164		T4M0 n=60		N0M0 n=337		N+M0 n=142		NXM0 n=92	
	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	93.0	95.0	89.4	91.6	81.0	82.7	94.3	96.1	92.7	94.6	86.2	89.1
2	90.7	94.9	84.3	88.2	81.0	85.5	66.3	69.6	88.0	91.8	79.0	82.6	72.9	78.2
3	88.8	94.7	76.3	81.1	67.1	72.7	58.0	62.5	81.5	86.5	63.1	66.9	70.4	76.3
4	83.9	90.9	69.9	76.1	64.0	70.6	58.0	62.5	76.9	83.2	56.8	62.3	65.0	72.7
5	80.4	88.5	65.8	73.1	61.2	69.4	51.9	58.8	72.6	80.1	51.3	57.4	63.4	72.2
6	75.1	85.5	63.5	71.4	56.3	65.4			68.7	77.7	46.8	52.6	61.7	70.8
7	75.1	85.5	60.9	70.5	49.8	59.3			64.9	75.3	41.0	47.5	57.8	69.3
8	75.1	85.5	59.0	68.9	47.3	57.2			63.2	74.3	38.8	44.7	55.7	67.5
9	71.6	85.4	56.9	67.3	43.4	53.9			60.0	72.1			53.4	66.6
10	67.8	84.2	53.3	64.7	41.8	52.7			57.3	70.9			53.4	65.8

Years	TNM staging			
	M1 n=51		NA/NOS n=206	
	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0
1	49.8	50.1	79.9	83.0
2			70.5	75.4
3			63.6	69.9
4			56.0	63.4
5			52.6	60.8
6			47.6	55.8
7			45.3	54.3
8			44.5	54.1
9			39.6	49.3
10			32.6	42.3

Table 4f. Observed (obs.) and relative (rel.) survival of patients with anal cancer by TNM staging for period 1988-2012 (N=1,206).

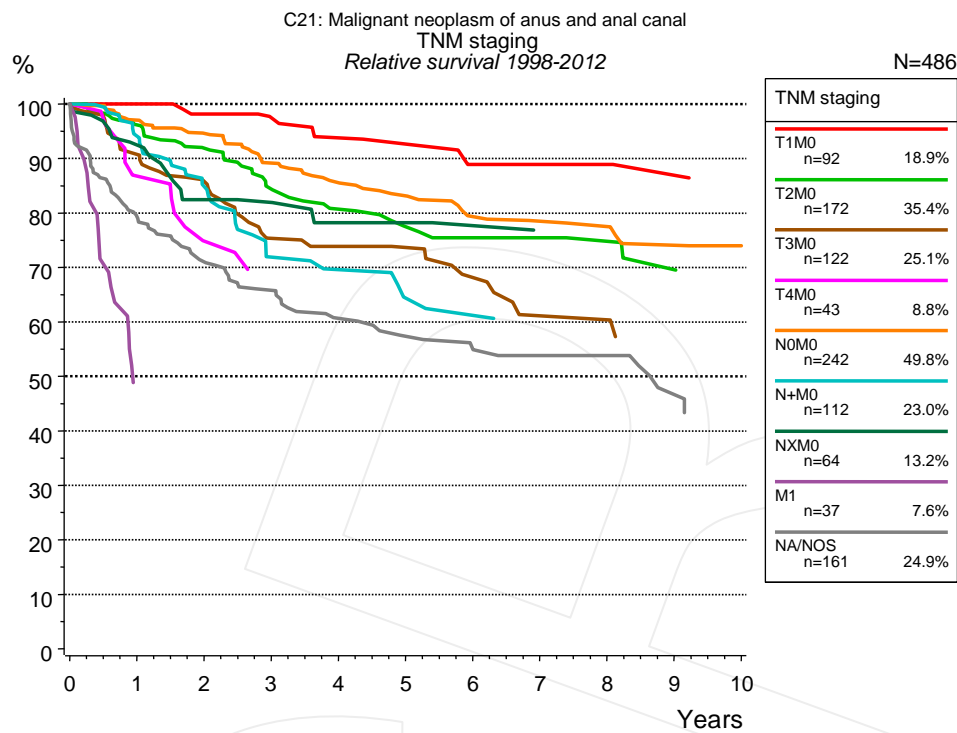


Figure 4g. Relative survival of patients with anal cancer by TNM staging. For 548 of 647 cases diagnosed between 1998 and 2012 valid data could be obtained for this item. For a total of 486 cases an evaluable classification was established. The accumulated percentage exceeds the 100% value because patients are potentially considered in more than one subgroup. The grey line represents the subgroup of 161 patients with missing values regarding TNM staging (24.9% of 647 patients, the percent values of all other categories are related to n=486).

TNM staging														
	T1M0 n=92		T2M0 n=172		T3M0 n=122		T4M0 n=43		N0M0 n=242		N+M0 n=112		NXM0 n=64	
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	94.1	96.1	89.0	90.7	85.1	86.8	95.4	97.0	92.6	94.1	89.7	92.5
2	93.9	98.1	87.8	91.9	81.8	85.8	71.6	74.9	90.9	94.6	81.6	84.9	77.2	82.5
3	91.1	97.4	79.4	84.4	70.2	75.3	65.4	69.3	84.2	89.2	67.5	71.9	75.3	81.9
4	86.4	93.8	74.2	80.7	67.8	73.9	65.4	68.5	79.6	85.5	64.4	69.6	68.9	78.2
5	84.6	92.6	69.7	77.5	66.3	73.7			76.0	83.1	57.9	64.4	68.9	78.2
6	77.3	88.9	67.2	75.4	59.7	68.2			70.8	79.3	55.5	61.2	65.9	77.7
7	77.3	88.9	67.2	75.4	52.1	61.1			68.8	78.5			62.3	76.3
8	77.3	88.9	65.3	74.8	52.1	60.4			67.6	77.5				
9	73.8	86.9	60.6	69.6	47.0	55.3			63.4	74.1				
10	69.2	84.2	57.8	67.5					61.7	74.0				

cont'd Years	TNM staging			
	M1 n=37		NA/NOS n=161	
	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0
1			76.6	79.3
2			67.2	71.0
3			60.8	65.8
4			54.5	60.6
5			50.6	57.4
6			48.5	54.9
7			46.1	53.8
8			46.1	53.8
9			39.3	46.7

Table 4h. Observed (obs.) and relative (rel.) survival of patients with anal cancer by TNM staging for period 1998-2012 (N=884).

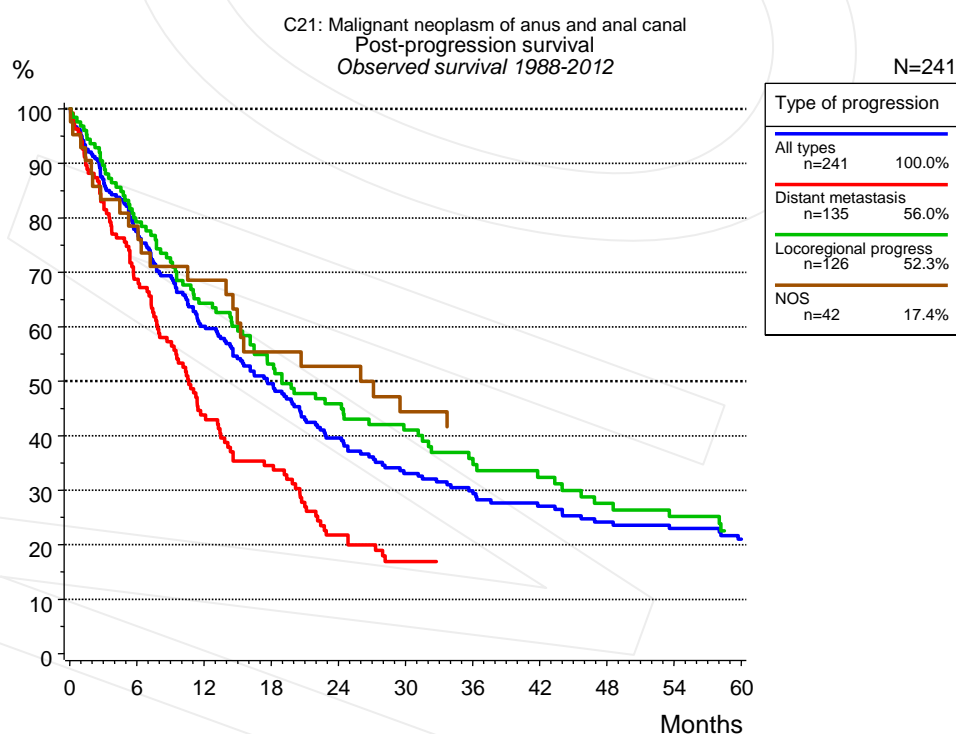


Figure 5a. Observed post-progression survival of 241 patients with anal cancer diagnosed between 1988 and 2012 (incl. M1). These 241 patients with documented progression events during their course of disease represent 27.7% of the totally 871 evaluated cases. Patients with cancer relapse documented via death certificates only were excluded (n=67, 7.7%). 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=42 %
	All types n=241 %	Distant metastasis n=135 %	Locoregional progress n=126 %	
0	100.0	100.0	100.0	100.0
12	60.1	43.8	64.3	68.5
24	39.6	21.8	45.9	52.7
36	29.9		35.8	
48	24.1		27.6	
60	21.0		22.5	

Table 5b. Observed post-progression survival of patients with anal cancer for period 1988-2012 (N=241).

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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Index of figures and tables

Fig./Tbl.	Page
1a Relative survival by period of diagnosis (chart)	2
1b Survival by period of diagnosis (table)	3
2a Survival by gender (chart)	3
2b Survival by gender (table)	4
3a Relative survival by age category (chart)	4
3b Survival by age category (table)	5
4a Relative survival by UICC 1988+ (chart)	5
4b Survival by UICC 1988+ (table)	6
4c Relative survival by UICC 1998+ (chart)	6
4d Survival by UICC 1998+ (table)	7
4e Relative survival by TNM staging 1988+ (chart)	7
4f Survival by TNM staging 1988+ (table)	8
4g Relative survival by TNM staging 1998+ (chart)	9
4h Survival by TNM staging 1998+ (table)	9
5a Observed post-progression survival (chart)	10
5b Observed post-progression survival (table)	11