

Munich Cancer Registry



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GIST: Gastroint. stromal tumor

Survival

Year of diagnosis	1998-2014
Patients	829
Diseases	830
Cases evaluated	605
Creation date	03/02/2016
Export date	12/23/2015
Population	4.64 m



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

<http://www.tumorregister-muenchen.de/en/facts/surv/shGISTE-GIST-Gastroint.-stromal-tumor-survival.pdf>

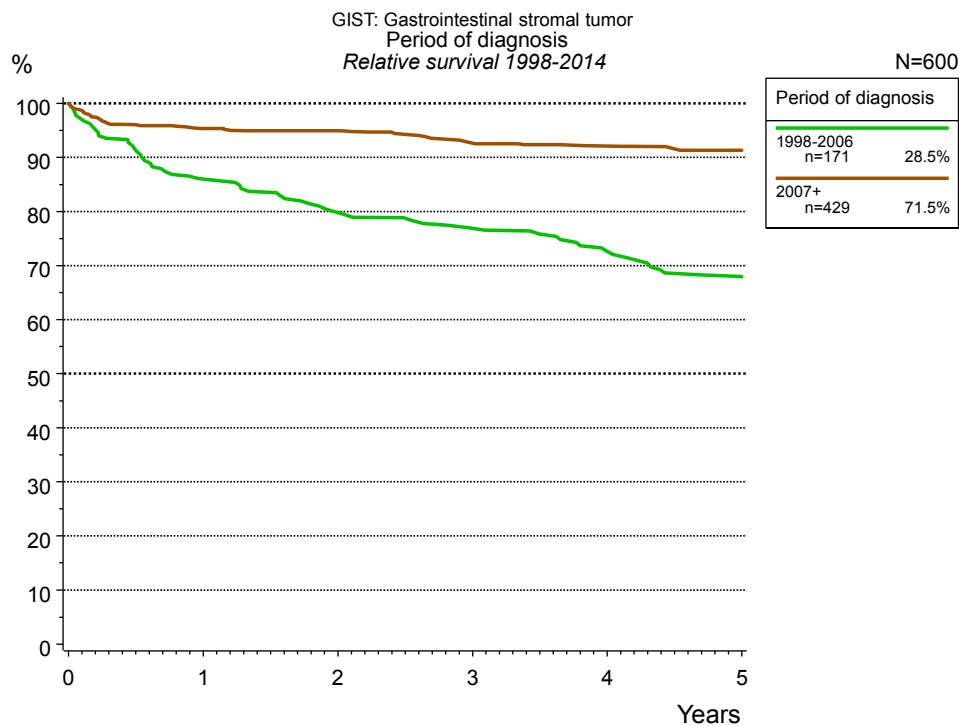


Figure 1a. Relative survival of patients with gastroint. stromal tumor by period of diagnosis. Included in the evaluation are 600 cases diagnosed between 1998 and 2014.

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				
Years	1998-2006 n=171		2007+ n=429	
	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0
1	84.0	86.0	93.1	95.4
2	76.9	79.8	91.0	94.9
3	72.2	76.9	86.3	92.7
4	67.4	72.7	83.7	92.1
5	61.4	68.0	81.4	91.3

Table 1b. Observed (obs.) and relative (rel.) survival of patients with gastroint. stromal tumor by period of diagnosis for period 1998-2014 (N=600).

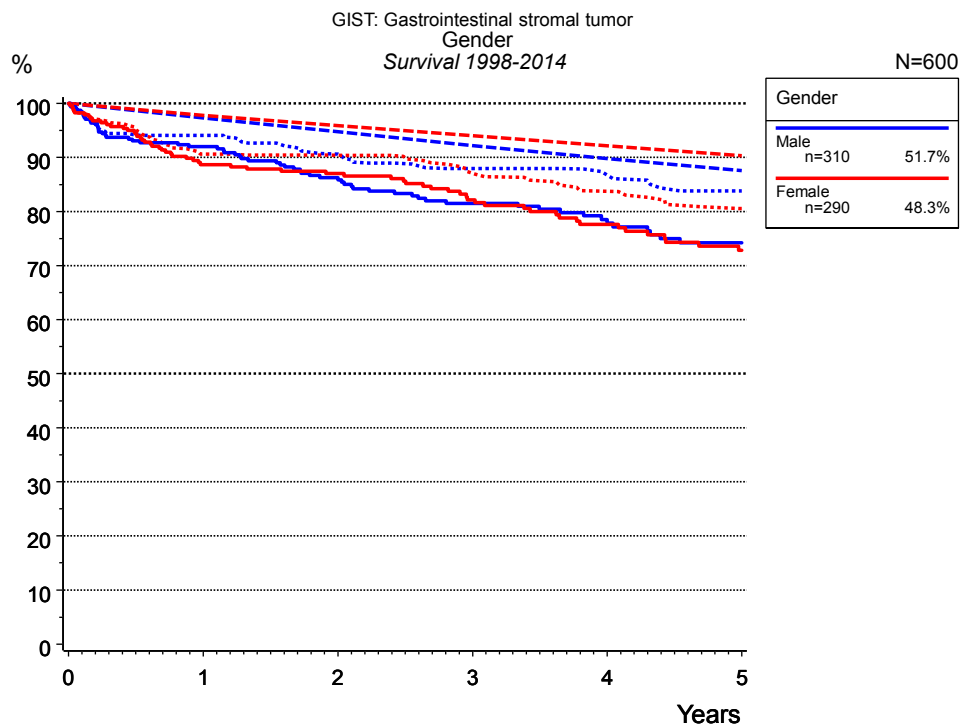


Figure 2a. Survival of patients with gastroint. stromal tumor by gender. Included in the evaluation are 600 cases diagnosed between 1998 and 2014.

Years	Gender			
	Male n=310		Female n=290	
	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0
1	92.0	94.1	88.7	90.6
2	86.3	90.6	87.0	90.4
3	81.5	88.0	82.2	87.0
4	78.5	86.7	77.6	83.7
5	74.2	83.8	72.8	80.6

Table 2b. Observed (obs.) and relative (rel.) survival of patients with gastroint. stromal tumor by gender for period 1998-2014 (N=600).

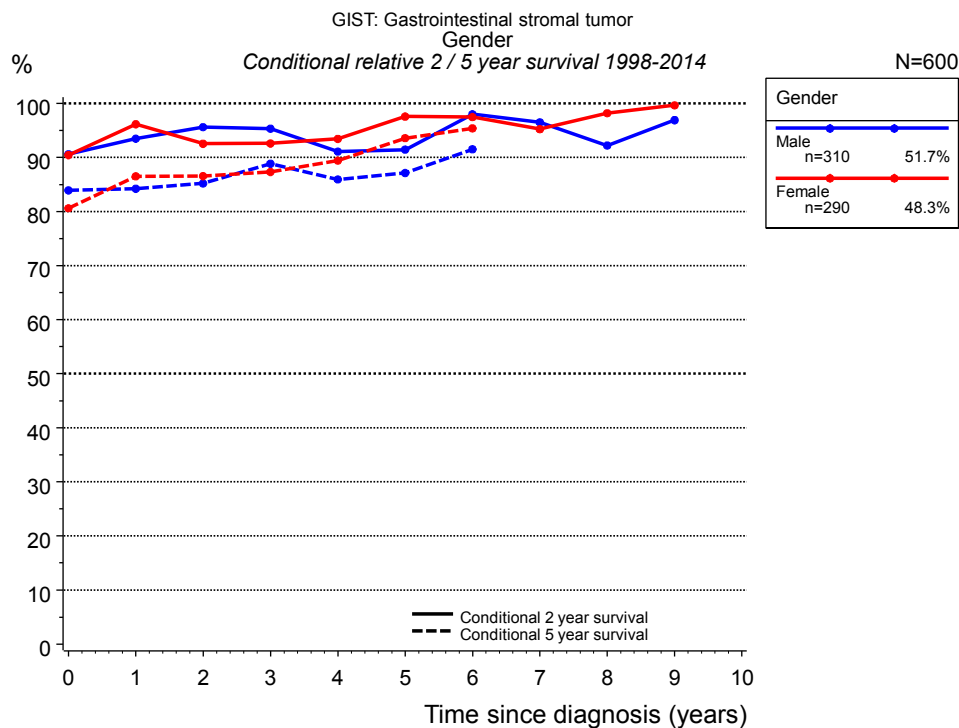


Figure 2c. Conditional relative 2 / 5-year survival of patients with gastroint. stromal tumor by gender. For 600 of 600 cases diagnosed between 1998 and 2014 valid data could be obtained for this item.

Gender						
Years	Male			Female		
	n	Cond. surv. % 2 yrs	5 yrs	n	Cond. surv. % 2 yrs	5 yrs
0	310	90.6	83.9	290	90.4	80.6
1	254	93.5	84.2	227	96.1	86.5
2	211	95.6	85.2	200	92.5	86.5
3	170	95.3	88.8	159	92.6	87.3
4	116	91.1	85.9	124	93.4	89.4
5	86	91.5	87.1	97	97.6	93.6
6	59	98.0	91.5	74	97.5	95.4
7	47	96.5		60	95.2	
8	38	92.2		47	98.2	
9	33	96.9		39	99.6	

Table 2d. Conditional relative 2 / 5-year survival of patients with gastroint. stromal tumor by gender for period 1998-2014 (N=600).

Conditional relative survival rates refer to the relative survival probability, in this case for 2 and 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 2a). 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 gender="Male", who are alive at least 3 years after cancer diagnosis, the conditional relative 2-year survival rate is 95.3% (n=170).

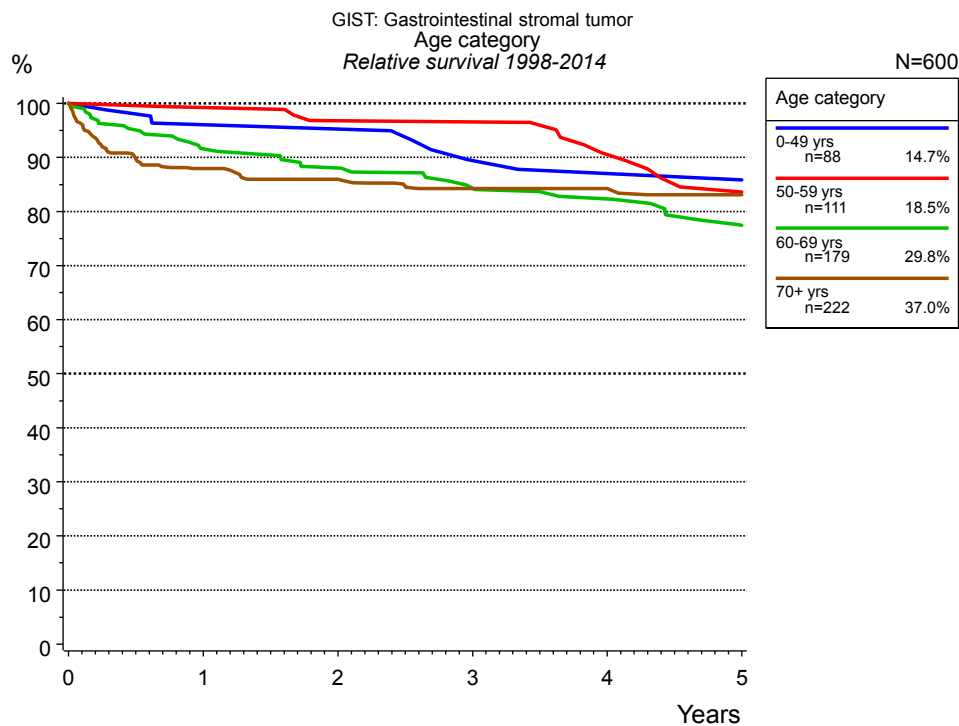


Figure 3a. Relative survival of patients with gastroint. stromal tumor by age category. Included in the evaluation are 600 cases diagnosed between 1998 and 2014.

Years	Age category							
	0-49 yrs n=88		50-59 yrs n=111		60-69 yrs n=179		70+ yrs n=222	
	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	96.3	96.1	99.0	99.2	90.6	91.6	83.6	88.0
2	96.3	95.3	95.8	96.8	86.5	88.0	78.4	86.0
3	89.2	89.4	95.8	96.6	81.7	84.3	72.0	84.3
4	87.3	87.0	88.6	90.5	78.9	82.3	68.7	84.3
5	87.3	85.9	82.1	83.6	72.5	77.5	65.5	83.1

Table 3b. Observed (obs.) and relative (rel.) survival of patients with gastroint. stromal tumor by age category for period 1998-2014 (N=600).

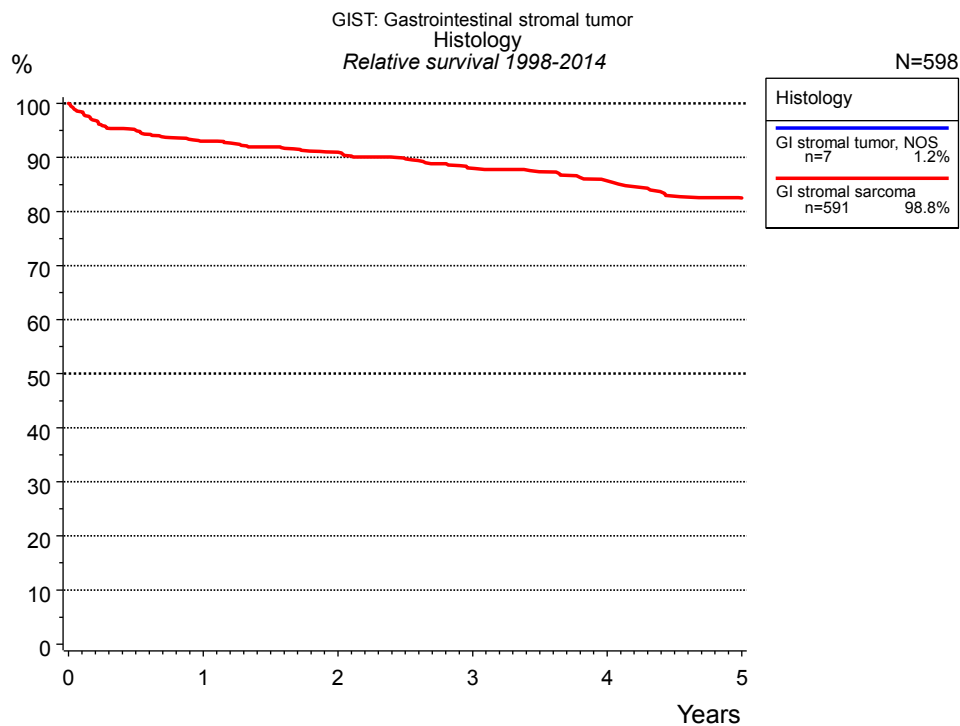


Figure 4a. Relative survival of patients with gastroint. stromal tumor by histology. For 598 of 600 cases diagnosed between 1998 and 2014 valid data could be obtained for this item. Subgroups with sample size <15 are dropped from the chart.

Years	Histology			
	GI stromal tumor, NOS n=7		GI stromal sarcoma n=591	
	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0
1			90.8	93.0
2			86.9	91.0
3			82.1	88.0
4			78.2	85.7
5			73.5	82.5

Table 4b. Observed (obs.) and relative (rel.) survival of patients with gastroint. stromal tumor by histology for period 1998-2014 (N=598).

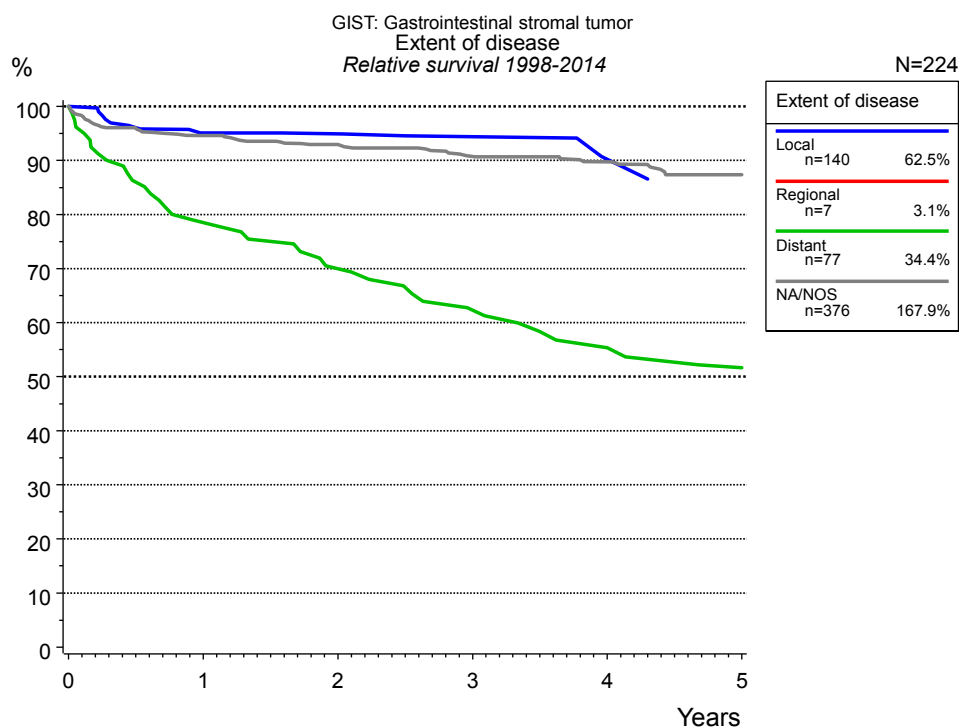


Figure 4c. Relative survival of patients with gastroint. stromal tumor by extent of disease. For 320 of 600 cases diagnosed between 1998 and 2014 valid data could be obtained for this item. For a total of 224 cases an evaluable classification was established. The grey line represents the subgroup of 376 patients with missing values regarding extent of disease (62.7% of 600 patients, the percent values of all other categories are related to n=224). Subgroups with sample size <15 are dropped from the chart.

Years	Extent of disease							
	Local n=140		Regional n=7		Distant n=77		NA/NOS n=376	
	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	93.1	95.1			77.3	78.5	92.2	94.6
2	92.1	94.9			67.6	70.0	88.8	93.0
3	89.7	94.4			59.0	62.3	84.3	90.7
4	83.4	90.2			52.7	55.4	81.4	89.7
5	79.0	84.0			47.6	51.7	77.6	87.4

Table 4d. Observed (obs.) and relative (rel.) survival of patients with gastroint. stromal tumor by extent of disease for period 1998-2014 (N=224).

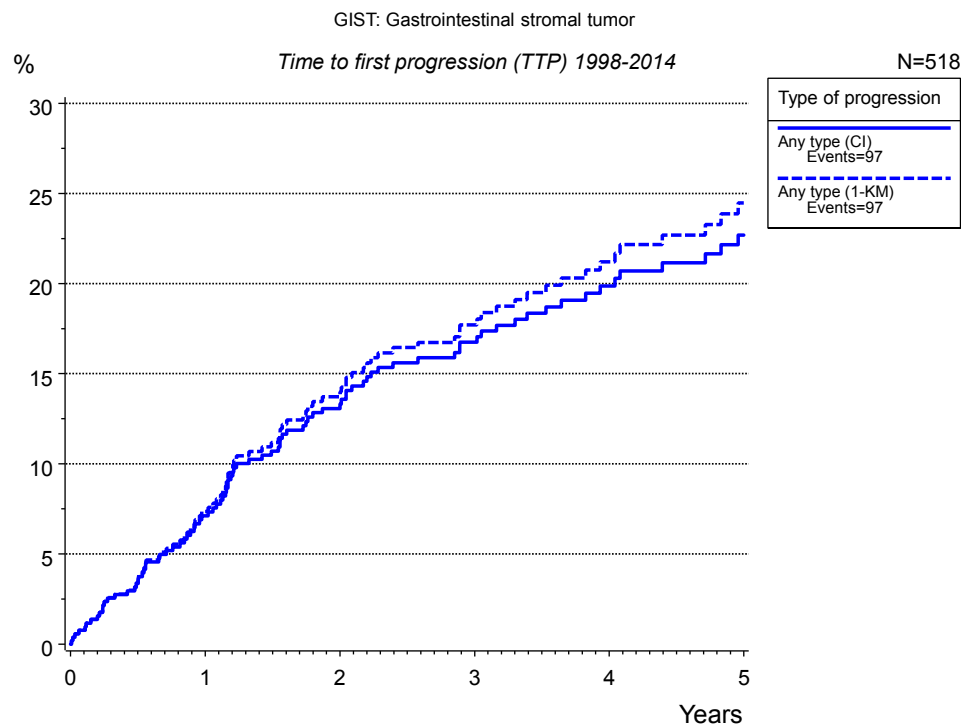


Figure 5a. Time to first progression of 518 patients with gastroint. stromal tumor diagnosed between 1998 and 2014 (M0 only in solid cancers) estimated by cumulative incidence function (CI, solid line) accounting for death as competing risk and by inverse Kaplan-Meier estimate (1-KM, dashed line). The frequency of events may be underestimated due to underreporting.

Years	Type of progression	
	Any type (CI)	Any type (1-KM)
	n=518 %	n=518 %
0	0.0	0.0
1	7.1	7.4
2	13.1	13.7
3	16.8	17.7
4	19.9	21.2
5	22.7	24.5

Table 5b. Time to first progression of patients with gastroint. stromal tumor for period 1998-2014 (N=518).

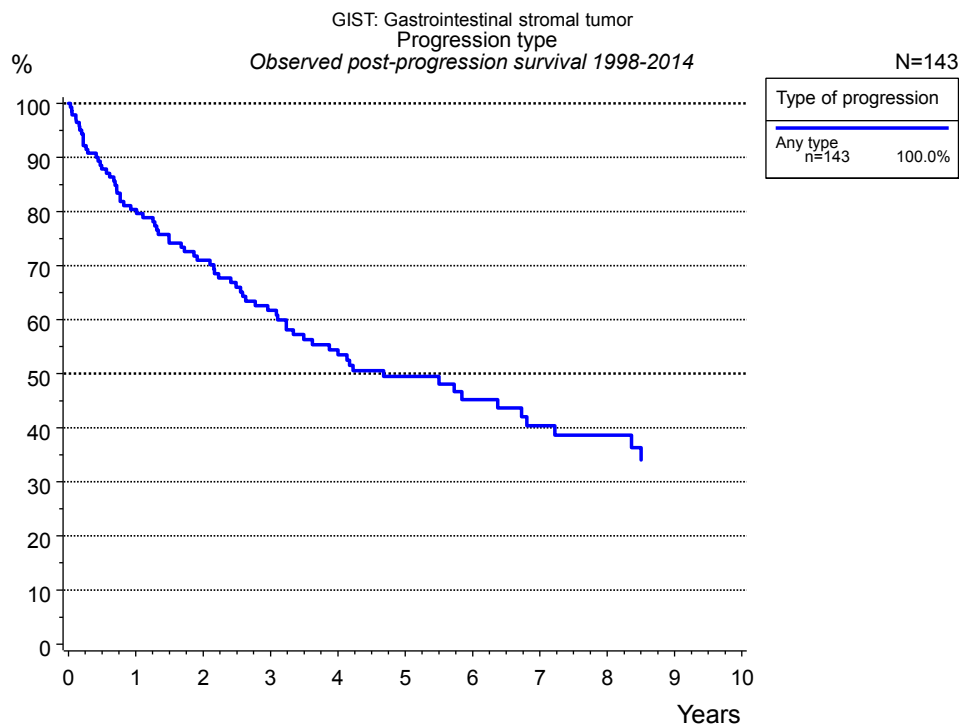


Figure 5c. Observed post-progression survival of 143 patients with gastroint. stromal tumor diagnosed between 1998 and 2014. These 143 patients with documented progression events during their course of disease represent 24.1 % of the totally 593 evaluated cases (incl. M1, n=75, 12.6 %). Patients with cancer relapse documented via death certificates only were excluded (n=29, 4.9 %).

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 potentially considered in more than one subgroup.

Type of progression	
Any type n=143	
Years	%
0	100.0
1	80.4
2	71.0
3	61.7
4	54.4
5	49.5
6	45.2
7	40.4
8	38.6
9	34.1
10	34.1

Table 5d. Observed post-progression survival of patients with gastroint. stromal tumor for period 1998-2014 (N=143).

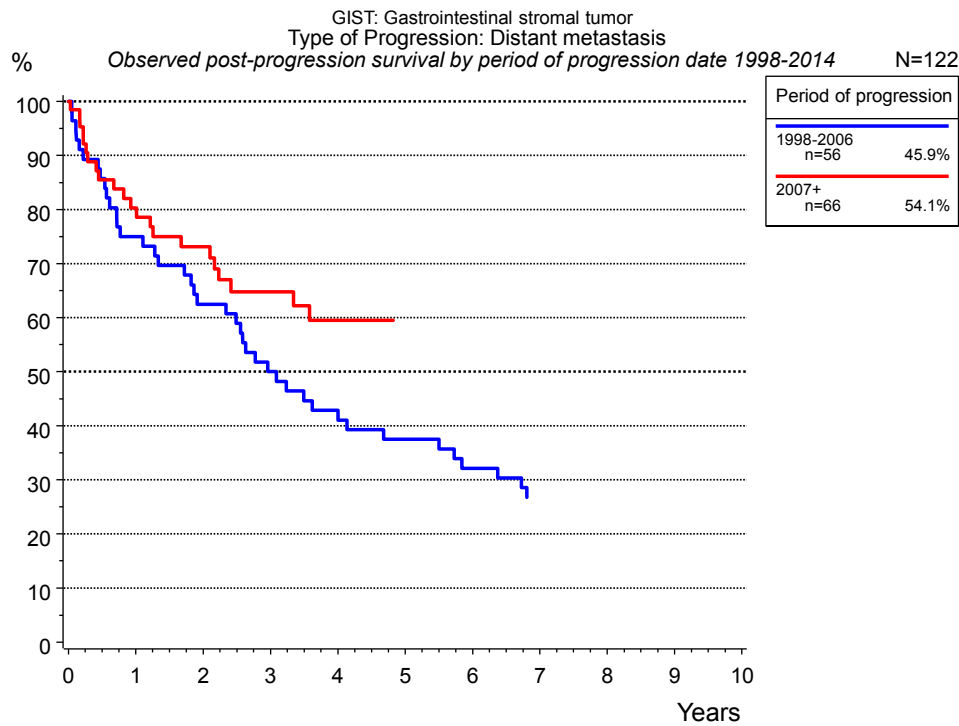


Figure 5e. Observed post-progression (distant metastasis) survival of 122 patients with gastroint. stromal tumor diagnosed between 1998 and 2014 by period of progression.

Years	Period of progression	
	1998-2006 n=56 %	2007+ n=66 %
0	100.0	100.0
1	75.0	80.3
2	62.5	73.1
3	50.0	64.8
4	42.9	59.5
5	37.5	59.5
6	32.1	59.5
7	26.8	59.5

Table 5f. Observed post-progression (distant metastasis) survival of patients with gastroint. stromal tumor for period 1998-2014 by period of progression (N=122).

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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