Munich Cancer Registry

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ICD-10 C62: Testicular cancer

Survival

Year of diagnosis	1988-1997	1998-2020
Patients	941	4,307
Diseases	957	4,409
Cases evaluated	908	4,046

Creation date	04/15/2022
Database export	12/20/2021
Population (males)	2.43 m

Munich Cancer Registry
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https://www.tumorregister-muenchen.de/en

https://www.tumorregister-muenchen.de/en/facts/surv/sC62__E-ICD-10-C62-Testicular-cancer-survival.pdf

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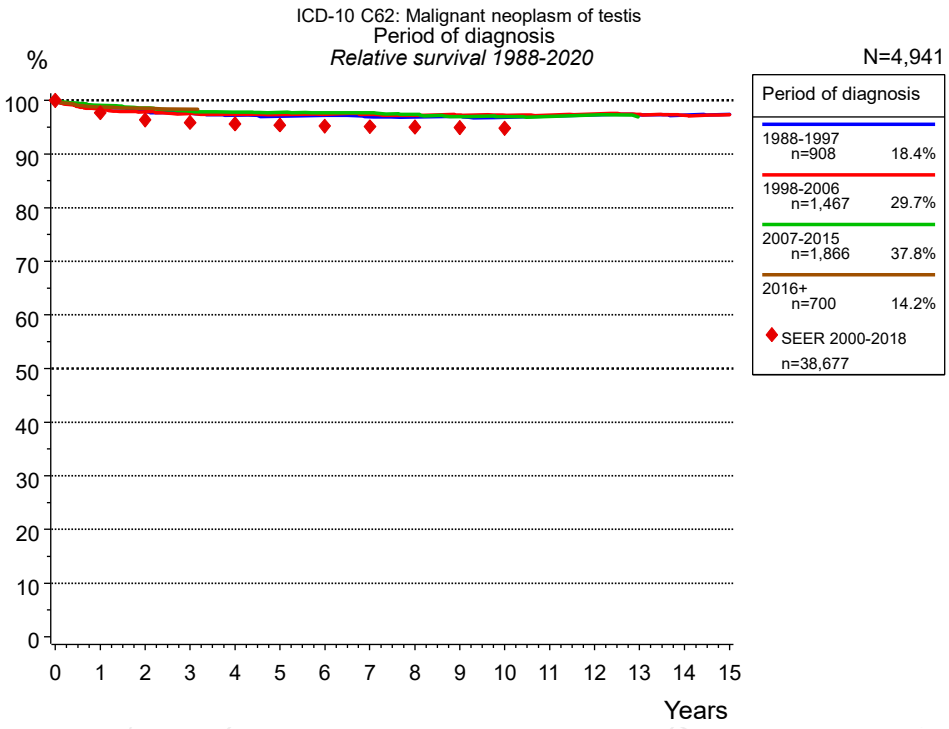

Figure 1a. Relative survival of patients with testicular cancer by period of diagnosis. Included in the evaluation are 4,941 cases diagnosed between 1988 and 2020.

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=908		1998-2006 n=1,467		2007-2015 n=1,866		2016+ n=700	
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	98.4	98.7	98.1	98.3	98.9	99.1	98.5	98.8
2	97.4	97.9	97.4	97.9	98.2	98.6	98.2	98.6
3	96.8	97.6	96.8	97.5	97.3	98.0	97.8	98.4
4	96.2	97.3	96.4	97.4	96.9	97.8		
5	95.7	97.1	96.0	97.3	96.6	97.8		
6	95.6	97.2	95.8	97.4	96.2	97.7		
7	94.9	96.9	95.5	97.4	95.8	97.7		
8	94.6	96.9	94.9	97.2	95.2	97.3		
9	94.4	97.1	94.6	97.2	94.5	96.9		
10	93.8	96.8	94.2	97.2	94.2	96.9		
11	93.7	97.1	93.8	97.2	93.8	97.0		
12	93.5	97.3	93.6	97.4	93.8	97.3		
13	93.1	97.3	93.1	97.3				
14	92.7	97.3	92.5	97.2				
15	92.4	97.4	92.1	97.3				
Median								

Table 1b. Observed (obs.) and relative (rel.) survival of patients with testicular cancer by period of diagnosis for period 1988-2020 (N=4,941).

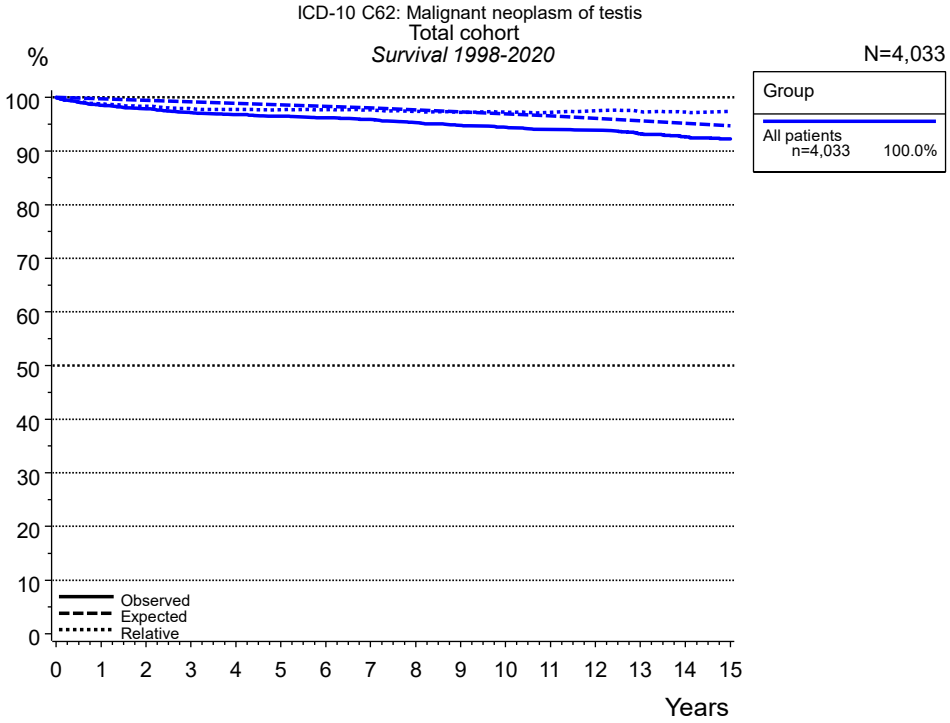

Figure 2a. Observed, expected and relative survival of the total cohort with testicular cancer. Included in the evaluation are 4,033 cases diagnosed between 1998 and 2020.

	Group	
	All patients n=4,033	
Years	obs. %	rel. %
0	100.0	100.0
1	98.5	98.8
2	97.9	98.4
3	97.2	97.9
4	96.8	97.8
5	96.5	97.7
6	96.2	97.7
7	95.8	97.7
8	95.2	97.4
9	94.8	97.3
10	94.4	97.3
11	94.0	97.2
12	93.8	97.5
13	93.2	97.4
14	92.7	97.3
15	92.3	97.4
Median		

Table 2b. Observed (obs.) and relative (rel.) survival of the total cohort with testicular cancer for period 1998-2020 (N=4,033).

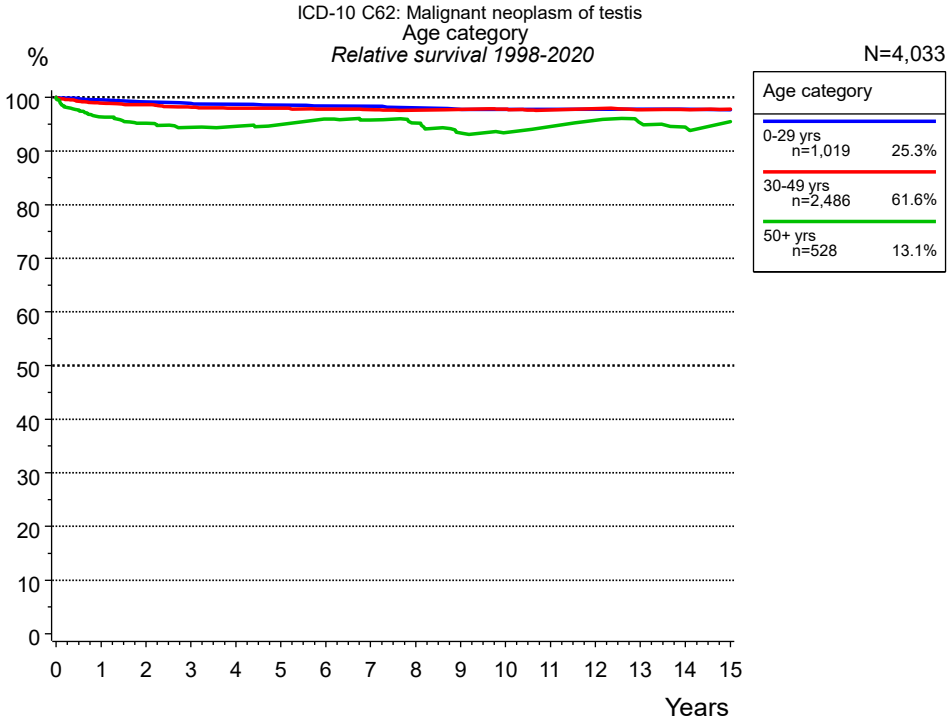

Figure 3a. Relative survival of patients with testicular cancer by age category. Included in the evaluation are 4,033 cases diagnosed between 1998 and 2020.

	Age category					
	0-29 yrs n=1,019		30-49 yrs n=2,486		50+ yrs n=528	
Years	obs. %	rel. %	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0	100.0	100.0
1	99.6	99.6	98.8	98.9	95.3	96.3
2	99.1	99.2	98.4	98.7	93.3	95.1
3	98.7	98.9	97.8	98.2	91.3	94.4
4	98.6	98.7	97.4	98.0	90.6	94.6
5	98.3	98.6	97.2	98.0	89.6	94.9
6	98.1	98.4	96.8	97.8	89.4	95.9
7	98.1	98.4	96.5	97.7	87.9	95.7
8	97.6	98.1	96.1	97.6	86.2	95.2
9	97.4	97.8	96.0	97.8	83.2	93.4
10	97.2	97.8	95.8	97.8	81.6	93.4
11	97.2	97.8	95.2	97.6	81.1	94.5
12	97.2	97.8	95.1	97.8	80.6	95.7
13	97.2	97.8	94.6	97.7	78.2	95.2
14	96.9	97.8	94.2	97.7	76.2	94.5
15	96.9	97.7	93.8	97.8	74.8	95.5
Median						

Table 3b. Observed (obs.) and relative (rel.) survival of patients with testicular cancer by age category for period 1998-2020 (N=4,033).

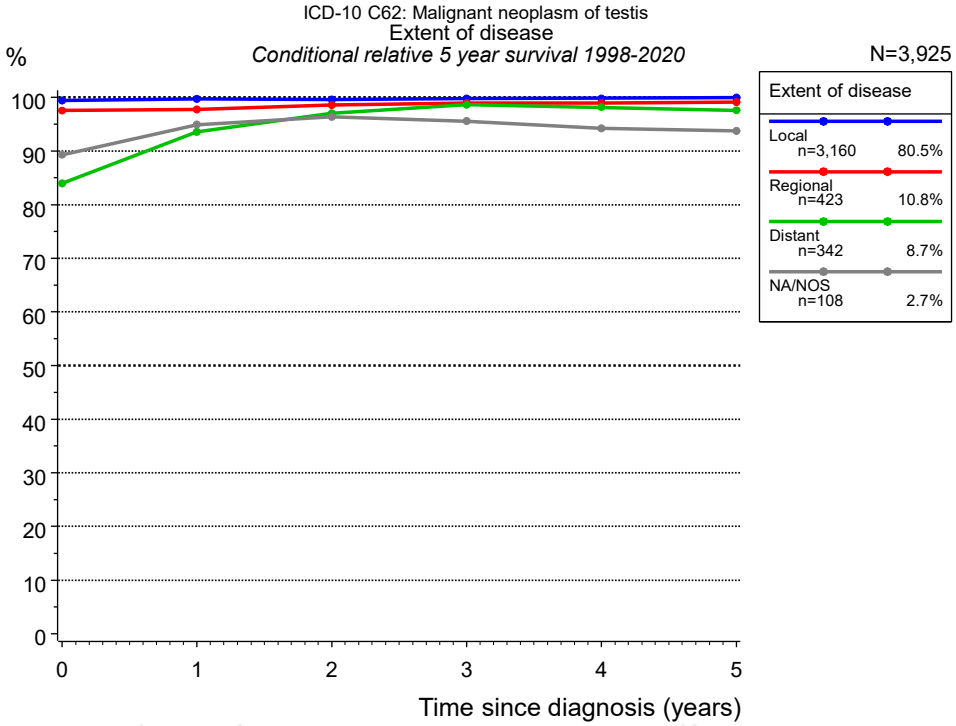

Figure 4c. Conditional relative 5-year survival of patients with testicular cancer by extent of disease. For 3,928 of 4,033 cases diagnosed between 1998 and 2020 valid data could be obtained for this item. For a total of 3,925 cases an evaluable classification was established. The grey line represents the subgroup of 108 patients with missing values regarding extent of disease (2.7 % of 4,033 patients, the percent values of all other categories are related to n=3,925).

	Extent of disease							
	Local		Regional		Distant		NA/NOS	
Years	n	Cond. surv. % 5 yrs	n	Cond. surv. % 5 yrs	n	Cond. surv. % 5 yrs	n	Cond. surv. % 5 yrs
0	3,160	99.4	423	97.5	342	83.9	108	89.3
1	2,968	99.7	405	97.7	290	93.6	96	94.9
2	2,844	99.6	389	98.6	266	97.0	92	96.4
3	2,691	99.8	363	98.9	243	98.7	87	95.6
4	2,521	99.8	351	98.9	226	98.2	79	94.2
5	2,339	100.0	332	99.2	214	97.6	71	93.7

Table 4d. Conditional relative 5-year survival of patients with testicular cancer by extent of disease for period 1998-2020 (N=3,925).

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 99.8% (n=2,691).

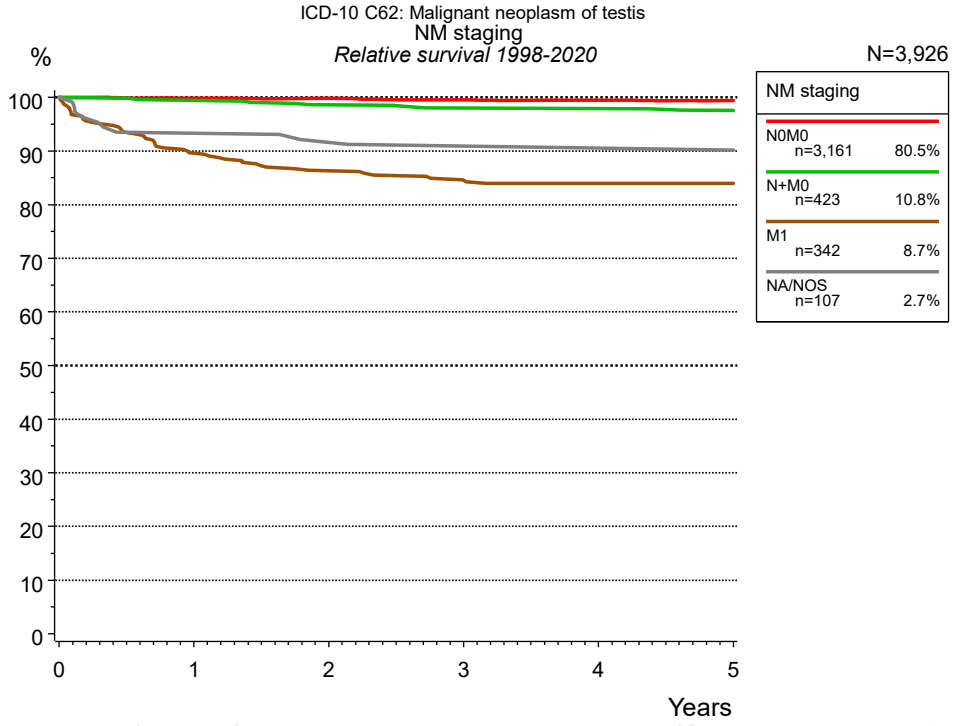

Figure 4c. Relative survival of patients with testicular cancer by NM staging. For 3,928 of 4,033 cases diagnosed between 1998 and 2020 valid data could be obtained for this item. For a total of 3,926 cases an evaluable classification was established. The grey line represents the subgroup of 107 patients with missing values regarding NM staging (2.7 % of 4,033 patients, the percent values of all other categories are related to n=3,926).

	NM staging							
	N0M0 n=3,161		N+M0 n=423		M1 n=342		NA/NOS n=107	
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	99.6	99.8	99.3	99.5	89.5	89.6	93.3	93.3
2	99.4	99.8	98.3	98.6	86.0	86.3	91.3	91.6
3	98.8	99.5	97.5	98.0	84.0	84.5	90.3	91.0
4	98.5	99.5	97.2	97.9	83.3	83.9	89.2	90.6
5	98.1	99.4	96.6	97.5	83.3	83.9	89.2	90.2
Median								

Table 4d. Observed (obs.) and relative (rel.) survival of patients with testicular cancer by NM staging for period 1998-2020 (N=3,926).

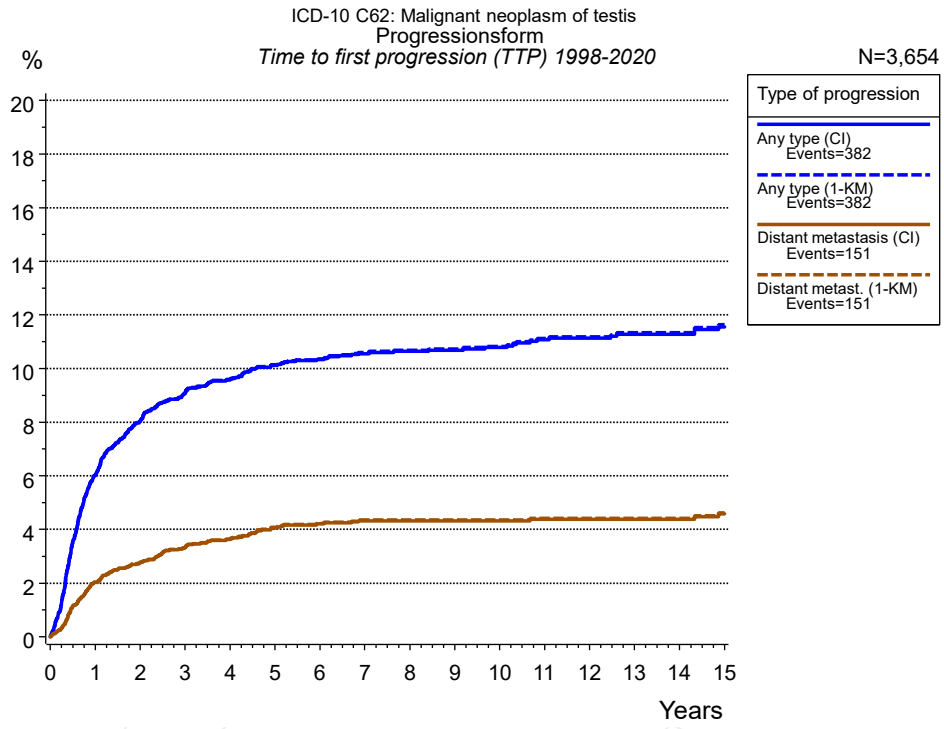

Figure 5a. Time to first progression of 3,654 patients with testicular cancer diagnosed between 1998 and 2020 (in solid cancers M0 only) estimated by cumulative incidence function (CI, solid line) accounting for death as competing risk and by inverse Kaplan-Meier estimate (1-KM, dashed line). The frequency of events may be underestimated due to underreporting.

	Type of progression			
	Any type (CI)	Any type (1-KM)	Distant metastasis (CI)	Distant metast. (1-KM)
N	3,653	3,653	3,654	3,654
Events	377	377	148	148
compet.	101		114	
Years	%	%	%	%
0	0.0	0.0	0.0	0.0
1	6.1	6.1	2.0	2.0
2	8.0	8.0	2.8	2.8
3	9.1	9.1	3.3	3.3
4	9.6	9.6	3.6	3.6
5	10.1	10.1	4.1	4.1
6	10.3	10.4	4.2	4.2
7	10.6	10.6	4.3	4.4
8	10.6	10.7	4.3	4.4
9	10.7	10.7	4.3	4.4
10	10.8	10.8	4.3	4.4
11	11.1	11.1	4.4	4.4
12	11.1	11.2	4.4	4.4
13	11.3	11.3	4.4	4.4
14	11.3	11.3	4.4	4.4
15	11.6	11.6	4.6	4.6

Table 5b. Time to first progression of patients with testicular cancer for period 1998-2020 (N=3,654), also showing the total of progression events (Events) and of deaths as competing risk (compet.).

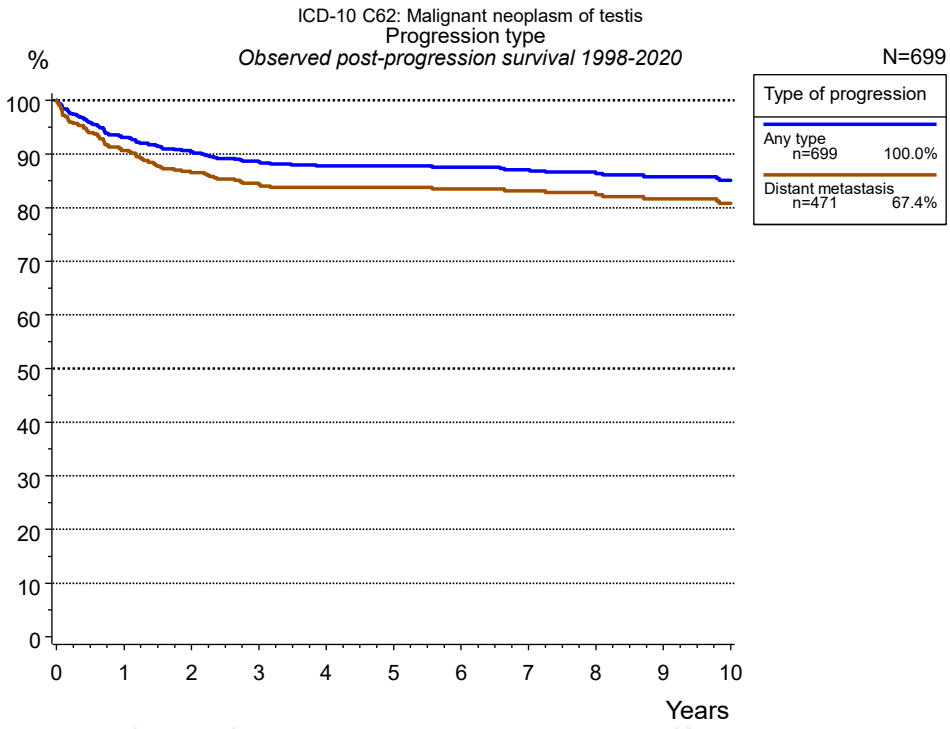

Figure 5c. Observed post-progression survival of 699 patients with testicular cancer diagnosed between 1998 and 2020. These 699 patients with documented progression events during their course of disease represent 17.5 % of the totally 3,989 evaluated cases (incl. M1, n=336, 8.4 %). Patients with cancer relapse documented via death certificates only were excluded (n=19, 0.5 %). Multiple progression types on different sites are included in the evaluation even when not occuring synchronously.

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	Distant metastasis
	n=699	n=471
Years	%	%
0	100.0	100.0
1	93.1	90.6
2	90.5	86.5
3	88.5	84.3
4	87.8	83.8
5	87.8	83.8
6	87.6	83.5
7	87.1	83.2
8	86.3	82.4
9	85.8	81.7
10	85.1	80.8

Table 5d. Observed post-progression survival of patients with testicular cancer for period 1998-2020 (N=699).

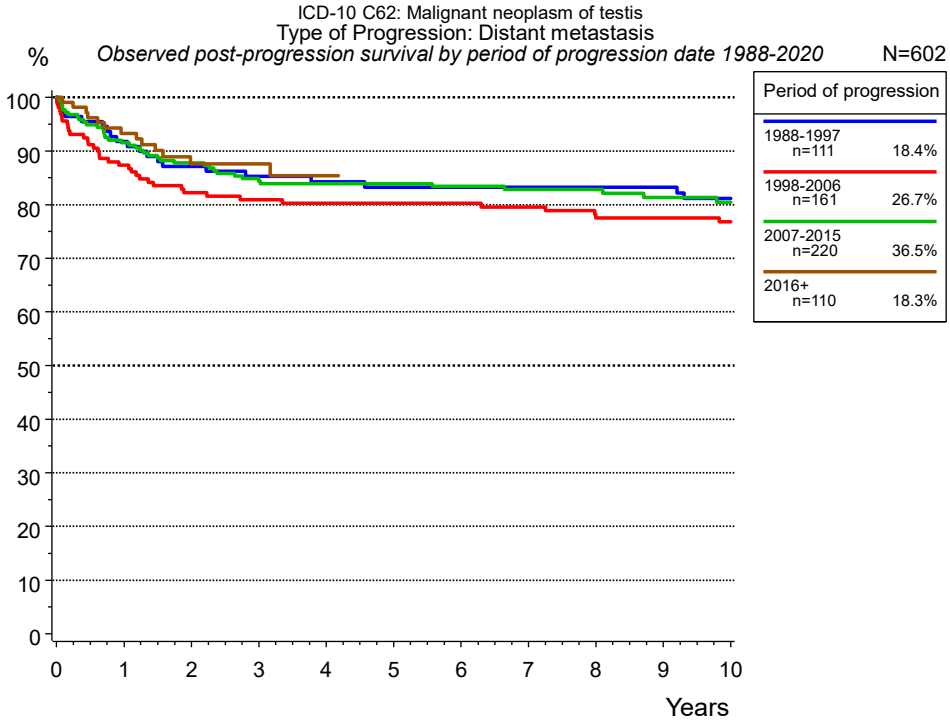

Figure 5e. Observed post-progression (distant metastasis) survival of 602 patients with testicular cancer diagnosed between 1988 and 2020 by period of progression.

	Period of progression			
	1988-1997 n=111	1998-2006 n=161	2007-2015 n=220	2016+ n=110
Years	%	%	%	%
0	100.0	100.0	100.0	100.0
1	91.8	87.4	91.5	93.3
2	87.1	82.2	87.7	87.6
3	85.3	80.9	84.4	87.6
4	84.3	80.3	83.9	85.4
5	83.2	80.3	83.9	
6	83.2	80.3	83.4	
7	83.2	79.6	82.9	
8	83.2	77.5	82.9	
9	83.2	77.5	81.4	
10	81.2	76.8	80.4	

Table 5f. Observed post-progression (distant metastasis) survival of patients with testicular cancer for period 1988-2020 by period of progression (N=602).

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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