# Munich Cancer Registry

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## P-NET: Pancr. neuroend. tumor

## Survival

| | | |
|---|---|---|
| Year of diagnosis | 1989-1997 | 1998-2016 |
| Patients | 20 | 474 |
| Diseases | 20 | 474 |
| Cases evaluated | 20 | 368 |

| | |
|---|---|
| Creation date | 08/22/2018 |
| Export date | 08/09/2018 |
| Population | 4.81 m |


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## Index of figures and tables

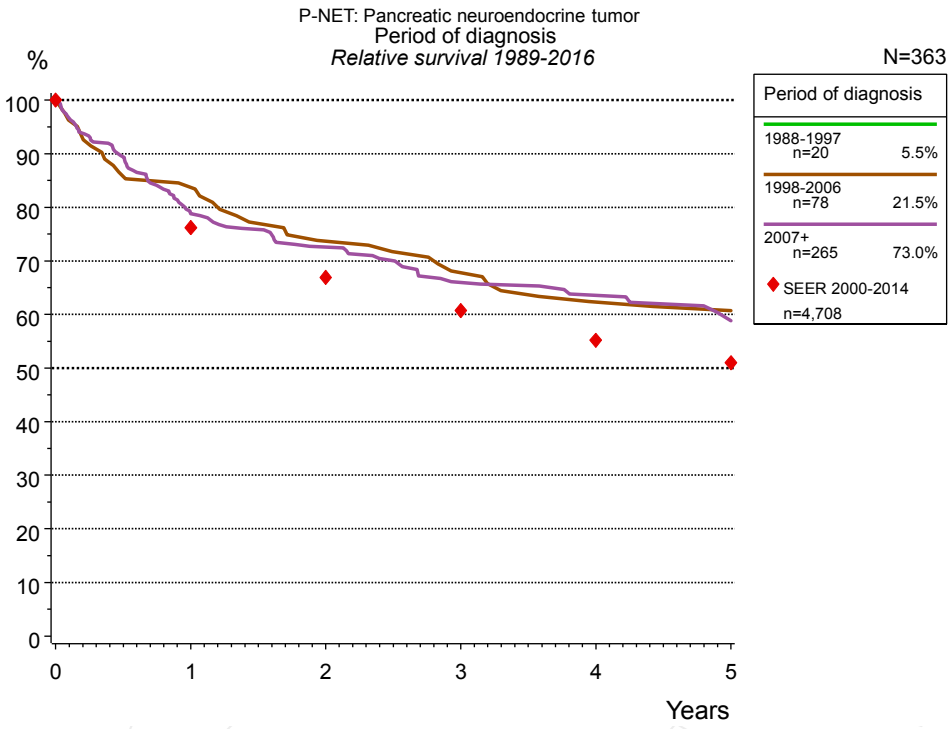


**Figure 1a.** Relative survival of patients with pancr. neuroend. tumor by period of diagnosis. Included in the evaluation are 363 cases diagnosed between 1989 and 2016.

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 2014, 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=20 | | 1998-2006 n=78 | | 2007+ n=265 | |
| Years | obs. % | rel. % | obs. % | rel. % | obs. % | rel. % |
| 0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1 | | | 83.3 | 83.7 | 77.6 | 78.8 |
| 2 | | | 71.6 | 73.7 | 70.6 | 72.5 |
| 3 | | | 65.1 | 67.8 | 63.3 | 66.0 |
| 4 | | | 58.6 | 62.3 | 60.3 | 63.6 |
| 5 | | | 57.2 | 60.7 | 54.9 | 58.8 |

**Table 1b.** Observed (obs.) and relative (rel.) survival of patients with pancr. neuroend. tumor by period of diagnosis for period 1989-2016 (N=363).

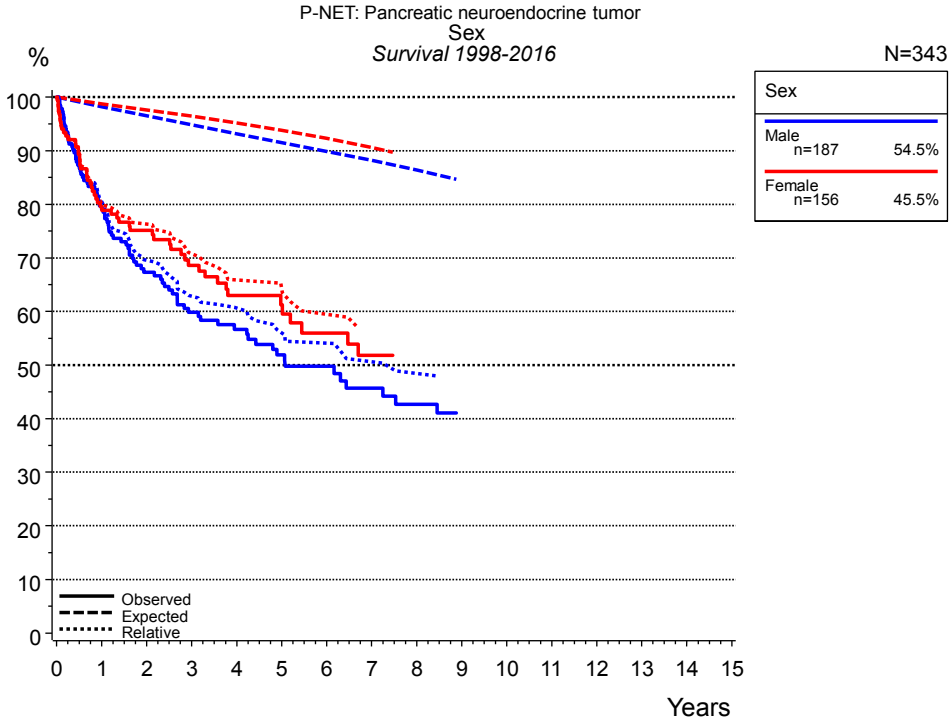


**Figure 2a.** Survival of patients with pancr. neuroend. tumor by sex. Included in the evaluation are 343 cases diagnosed between 1998 and 2016.

| | Sex | | | |
|---|---|---|---|---|
| | Male n=187 | | Female n=156 | |
| Years | obs. % | rel. % | obs. % | rel. % |
| 0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1 | 79.1 | 80.5 | 78.9 | 79.9 |
| 2 | 67.3 | 69.5 | 75.1 | 76.3 |
| 3 | 59.8 | 62.8 | 68.6 | 70.8 |
| 4 | 56.7 | 60.7 | 63.0 | 65.9 |
| 5 | 51.9 | 56.0 | 61.3 | 64.2 |
| 6 | 49.7 | 54.1 | 56.0 | 59.5 |
| 7 | 45.7 | 50.6 | 51.8 | 56.4 |
| 8 | 42.7 | 48.4 | | |

**Table 2b.** Observed (obs.) and relative (rel.) survival of patients with pancr. neuroend. tumor by sex for period 1998-2016 (N=343).

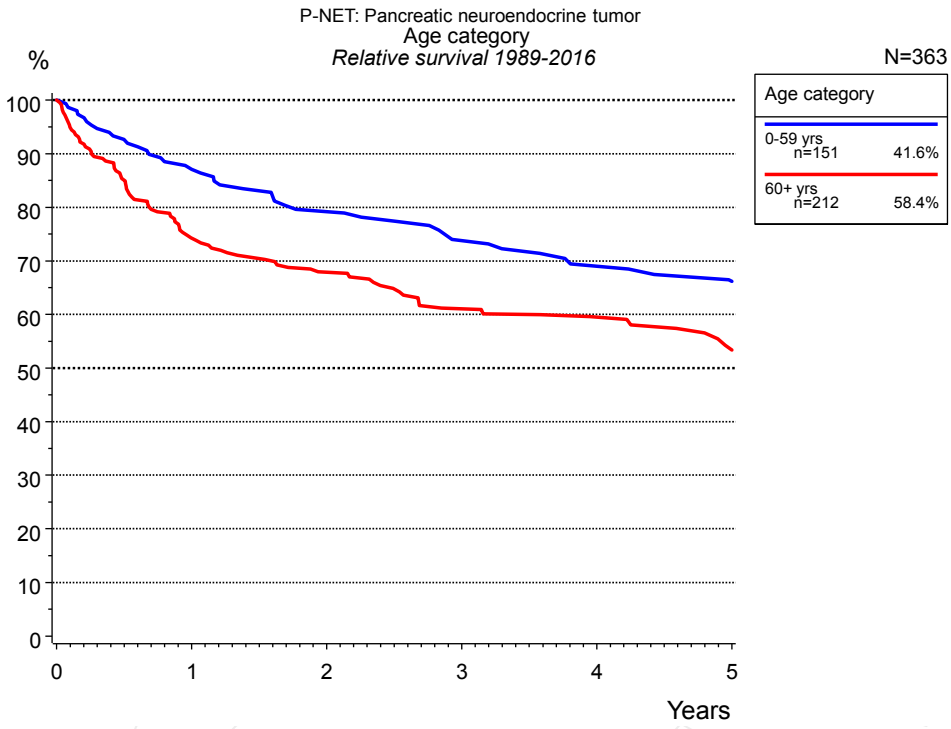


**Figure 3a.** Relative survival of patients with pancr. neuroend. tumor by age category. Included in the evaluation are 363 cases diagnosed between 1989 and 2016.

| | Age category | | | |
|---|---|---|---|---|
| | 0-59 yrs n=151 | | 60+ yrs n=212 | |
| Years | obs. % | rel. % | obs. % | rel. % |
| 0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1 | 86.8 | 87.1 | 72.5 | 74.2 |
| 2 | 79.2 | 79.2 | 64.8 | 67.8 |
| 3 | 73.3 | 73.8 | 57.1 | 61.0 |
| 4 | 68.5 | 69.0 | 53.9 | 59.5 |
| 5 | 65.2 | 66.2 | 47.7 | 53.4 |

**Table 3b.** Observed (obs.) and relative (rel.) survival of patients with pancr. neuroend. tumor by age category for period 1989-2016 (N=363).

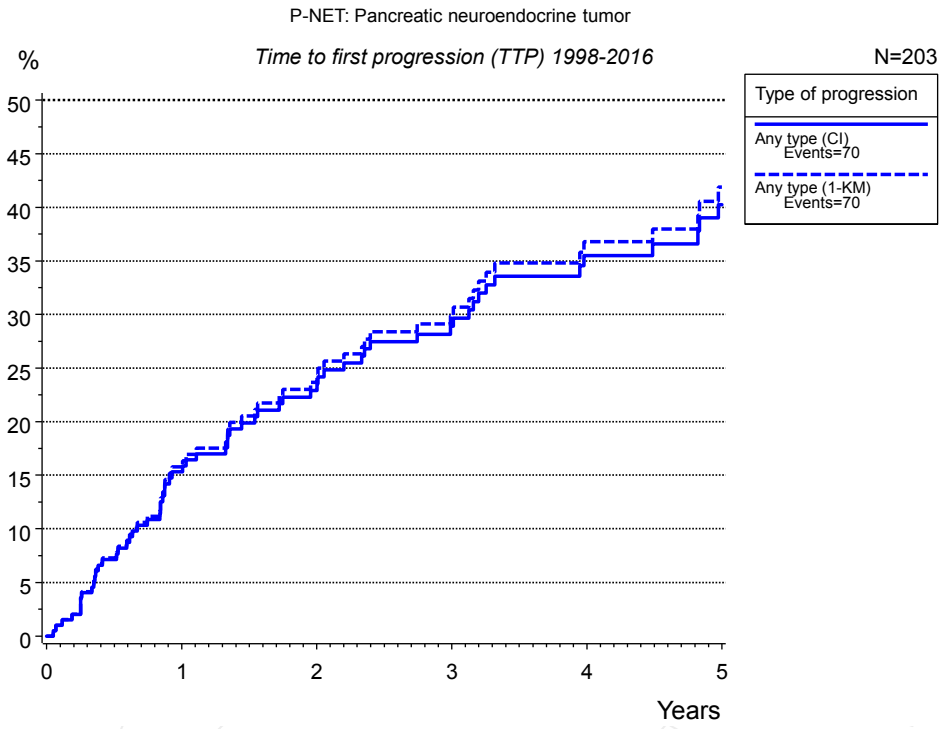


**Figure 5a.** Time to first progression of 203 patients with pancr. neuroend. tumor diagnosed between 1998 and 2016 (in solid cancers M0 only) estimated by cumulative incidence function (CI, solid line) accounting for death as competing risk and by inverse Kaplan-Meier estimate (1-KM, dashed line). The frequency of events may be underestimated due to underreporting.

| | Type of progression | |
|---|---|---|
| | Any type (CI) | Any type (1-KM) |
| | n=203 | n=203 |
| Years | % | % |
| 0 | 0.0 | 0.0 |
| 1 | 15.3 | 15.8 |
| 2 | 22.9 | 23.7 |
| 3 | 28.9 | 29.9 |
| 4 | 35.5 | 36.8 |
| 5 | 40.2 | 41.9 |

**Table 5b.** Time to first progression of patients with pancr. neuroend. tumor for period 1998-2016 (N=203).

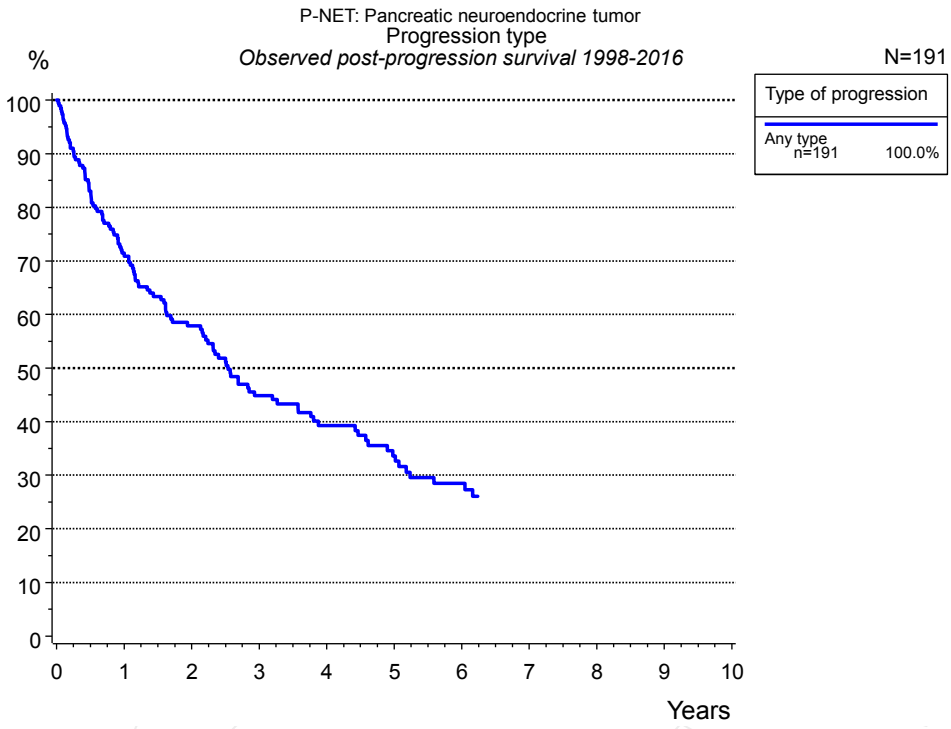


**Figure 5c.** Observed post-progression survival of 191 patients with pancr. neuroend. tumor diagnosed between 1998 and 2016. These 191 patients with documented progression events during their course of disease represent 56.2 % of the totally 340 evaluated cases (incl. M1, n=137, 40.3 %). Patients with cancer relapse documented via death certificates only were excluded (n=16, 4.7 %).

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 n=191 |
|---|---|
| Years | % |
| 0 | 100.0 |
| 1 | 70.9 |
| 2 | 57.9 |
| 3 | 44.8 |
| 4 | 39.3 |
| 5 | 33.6 |
| 6 | 28.5 |

**Table 5d.** Observed post-progression survival of patients with pancr. neuroend. tumor for period 1998-2016 (N=191).

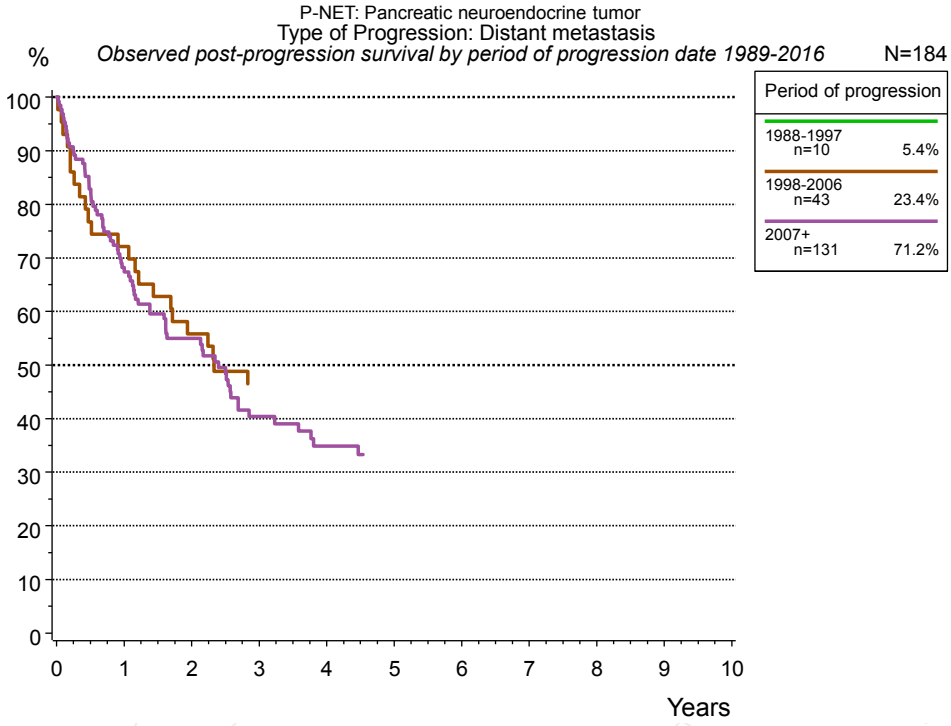


**Figure 5e.** Observed post-progression (distant metastasis) survival of 184 patients with pancr. neuroend. tumor diagnosed between 1989 and 2016 by period of progression.

| | Period of progression | |
|---|---|---|
| | 1998-2006 n=43 | 2007+ n=131 |
| Years | % | % |
| 0 | 100.0 | 100.0 |
| 1 | 72.1 | 67.4 |
| 2 | 55.8 | 55.0 |
| 3 | | 40.4 |
| 4 | | 34.9 |

**Table 5f.** Observed post-progression (distant metastasis) survival of patients with pancr. neuroend. tumor for period 1989-2016 by period of progression (N=184).

**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)<br>Date of entry: diagnosis<br>Event: death from any cause |
| RS | Relative survival | Survival compared to “general population”,<br>ratio of observed to expected survival (Ederer II method),<br>reflecting cancer specific survival |
| AS | Assembled survival | Assembled chart of<br>observed, expected, relative survival |
| CS | Conditional survival | Survival probability under the condition of surviving<br>a given period of time |
| TTP | Time to progression | Time to first progression / relapse<br>Date of entry: diagnosis<br>Event: (progression / relapse): first local-, lymph node recurrence, distant metastasis or unspecified progression |
| | 1-KM | 1 minus Kaplan-Meier estimator<br>(“inverse” Kaplan-Meier estimator) |
| | CI | Cumulative incidence<br>Death as competing risk (according to Kalbfleisch und Prentice) |
| PPS | Post-progression survival | Survival since first progression / relapse (Kaplan-Meier estimate)<br>Date of entry (progression / relapse): first local-, lymph node recurrence, distant metastasis or unspecified progression<br>Event: death from any cause |

**Recommended Citation**

Munich Cancer Registry. Survival P-NET: Pancr. neuroend. tumor [Internet]. 2018 [updated 2018 Aug 22; cited 2018 Oct 1]. Available from: https://www.tumorregister-muenchen.de/en/facts/surv/shPNETE-P-NET-Pancr.-neuroend.-tumor-survival.pdf

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