

Survival of Cancer Patients in Finland, 1955–1994

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IMPROVED SURVIVAL BY EARLIER DETECTION AND/OR IMPROVED CANCER TREATMENT?

To issue 2 or 3 of this year's volume of *Acta Oncologica* was included Supplement No. 12 (1) presenting the results of a study on cancer survival in Finland during the period 1955–1994. This report mainly includes tumour-specific sections describing age- and stage-specific trends in relative survival. Three summaries of previous work on social and geographical equity and the European perspective in the 1980s add perspective. The authors present a quantitative assessment of the past adequacy of oncological care in Finland, which indirectly reflects the support and guidance of the FCF. Regardless of its content, the very fact that this long-term assessment has been made can be considered a feature of oncological civilization. The fact that change, indeed slow progress, is measurable, must send a clear message of modest improvements in survival to the research establishment, the public and policy-makers alike, and, it is hoped, also in the USA. For the healthcare system it implies that the prevalence of cancer, in other words the demand, is rising by about 2–4% a year, although this is not shown.

In their abstract, the authors observe a gradual increase in 5–10-year relative survival for almost all sites, especially in childhood cancers. But the increase in 10-year relative survival rates, often a marker of cure, is quite marked, i.e. > 25% compared with the 1955–1964 values, which were 0.5–1% annually for the following sites: cancer of the pharynx, oesophagus, stomach, colon, rectum, lung, breast, corpus uteri, prostate, testis, kidney, bladder, nervous system, thyroid, bone and skin melanoma, nodal and extranodal non-Hodgkin's lymphoma, Hodgkin's disease and multiple myeloma. Compared with the 1975–1984 period, 5-year relative survival in the past decade has clearly improved for patients with the majority of cancers, except cancer of the oral cavity, larynx, small intestine, pancreas, liver (elderly), lung (an unexplained decline even

occurred at middle age), cervix uteri, female urinary bladder and multiple myeloma. Relative survival for patients with leukaemias, only classified in subtypes in 1985–1994, exhibits an overall improvement. With the exception of acute lymphoblastic leukaemia, survival rates compare favourably with other European registries for the period 1985–1989 (2). In all, the 5-year relative survival rate breached the mystical 50% barrier in this period, namely 58% for women and 43% for men. However, at 10 years' survival, 64% of men and 45% of women were still dying in excess from that cancer and/or related conditions.

These improvements in relative survival for patients with the various cancers are generally attributed to early detection (also an indicator of access to specialized care) and sometimes to improved treatment, the latter mainly in the case of children with the various malignancies (why not illustrate this in a separate publication together with other Nordic registries?), men with testicular cancer and adults with Hodgkin's disease, who together comprise 3% of the cancer incidence. Better staging also had a positive effect on survival at the various stages, without having an effect on overall survival, owing to the poorer stage/distribution. As already alluded to in the first survival overview (3), the increase in survival was generally greatest for patients with localized cancer, which suggests more early diagnosis. Interestingly, the declining survival rate for cervical cancer (2–3% of female cancers), especially at ages 15–29 and 60+ years, is attributed to regular screening, which would only catch the more benign forms. I would suggest there is another explanation for the decline in survival at age 15–29, perhaps a more aggressive course of the disease. If the 'success' of the screening programme, if any, being part of management of cervical cancer, is reflected in a—more than 'spontaneous'—decline in incidence, followed later by mortality, then this information too is missing from this report.

All in all, the registry staff has extracted optimal value from this huge data set concerning 625000 new patients with cancer, of whom about 465000 were included in this analysis. They thus avoided information overload and did not present any extensive discussion of results relating to tumour site. Moreover, interesting data concerning long-term relative survival (> 10 years) for patients diagnosed before 1980 were not presented. I would also like to have had some information on short-term mortality (e.g. at 1 month after diagnosis) as an indicator of access to care. The Finnish rates fluctuated between 0 and 20% for the various sites, but appeared to be relatively favourable in Europe during the period 1985–1989 (4). In addition, I must confess that my curiosity about survival data on uncommon tumours according to subsite and histology, e.g. in the head and neck area or with sarcomas and melanomas at the various locations, has not been completely satisfied. Although the 15-year age distribution is very efficient, specific reports on survival data for the very elderly (> 90 years) have not been presented, but this will certainly change in the future because this is the fastest-growing group of patients, with up to 2% of all new patients in recent years.

The authors present annual relative survival rates as markers for statistical cure, which in the period 1985–1994 was reached between 6 and 9 years after diagnosis of most tumours. Favourable exceptions were patients with cancer of the testis, corpus uteri, bone and thyroid and self-evident, non-melanoma skin cancers, whereas patients with lung, breast and prostate cancer, nodal lymphomas and myeloma did not (yet) have a normal life expectancy at 10 years.

But, what sort of comment should an expert (living outside Scandinavia) really make on relative survival information from patients with cancer diagnosed since 1955 in a country where the data are derived from one of the more accurate and, in terms of output, productive (and reputable) cancer registries in Europe (5). If he is not overwhelmed by so many figures and tables, he should also look at the registry as part of the healthcare system it covers or serves and thus also at the structural and process determinants of oncological care. Usually too much or too little healthcare is offered. According to the OECD figures in 1997, the Finnish healthcare system is relatively inexpensive, despite or thanks to one medical faculty per 1000000 inhabitants. Fortunately, the authors have provided us with an indirect assessment of the adequacy of oncological care: 3% of cancer deaths ($n = 240$) would be avoidable annually in Finland if 5-year relative survival rates in 'backward' regions could be raised to average levels (6). I am not aware of similar figures in countries outside Scandinavia, but this percentage does not strike me to be unduly large. Larger differences were found, for example, for cancer of the cervix uteri (9%) and skin melanoma (24%), probably as a result of a differential

influence of early detection or screening. The difference for rectal cancer (6%) is probably therapy-related, because of the application of mesorectal excision. Social class differences in relative survival, which became smaller by a necessary—long awaited—adjustment of expected rates (7), were greatest for patients with cancer of the stomach, rectum, bladder (males), cervix and corpus uteri. At these sites differences in prevalence of co-morbidity and care-seeking behaviour are not unlikely.

Female superiority in cancer survival was apparent (> 5% difference related to male rates) for cancer of the oesophagus (10% vs. 8%), lung (13% vs. 10%), skin (melanoma) (84% vs. 78%), oral cavity (60% vs. 47%), kidney (54% vs. 51%), tongue (58% vs. 46%), pharynx (49% vs. 36%) and pleura (7% vs. 4%). A different mix of tumours and earlier detection in females, partly affected by the presence of co-morbidity, were most likely responsible for this difference. Female rates were lower for cancer of the bladder (63% vs. 72%) and larynx (58% vs. 62%), probably because of higher stage at diagnosis and more supraglottic location, respectively. This was confirmed in an analysis using European data, which showed the difference to be smaller at old age, when only the most vital men survive (8).

Survival estimation and comparative interpretation of the European registries ($n = 45$) were much improved through the collaboration with the Eurocare project (9–11). In addition to Italian hospitality and able coordination and substantial input from 17 countries (Norway and a large part of Sweden were unfortunately absent), the backbone of this project consisted of application of experience with the concept and computation of relative survival; the FCR program for the calculation of the relative survival may thus have become one of the most used computer programs in present-day Europe, partly due to tireless transmission of expertise (12). Some attention is paid in the reports to the European perspective during the period 1978–1985. Comparisons of relative survival (Table 63) exhibit relatively favourable results for most tumours in Finland, and also with respect to Denmark. Differences were found largely for patients with tumours who could have benefited from resection if diagnosis had been more timely. They were slightly inferior to the data from South Sweden during the period 1985–1989 (9). Recent data from the Eurocare study for this period show favourable 5-year relative survival rates for Finnish patients with cancer of the breast, prostate, thyroid and skin melanoma and the European age-adjusted average for all other tumours. Always amenable to improvement, access to care and the organization of specialized care is likely to be appropriate, and can be considered a success in a country with such a low population density in large parts.

The authors have compiled a very useful reference work and have benefited from a previous study covering patients diagnosed between 1953 and 1974 (3). The Finnish reports

have set a standard for other registries, which also made important contributions, for example, the reports from Denmark with site-specific articles for the period 1943–1987 (13), from Slovenia in 1963–1992 (14), Sweden 1961–1989 (15) and Scotland 1968–1990 (16). The extensive reports from the Surveillance Epidemiology End Results registries in the USA (17) combine trends in relative survival with trends in incidence and mortality which allow for a comprehensive assessment of cancer control, also taking into account the report from the southeast Netherlands in 1958–1992 (18). Although most of these reports point in the same direction, i.e. modest improvements in cancer survival and a decline in mortality with respect to incidence, marked common differences remain, even after adjustment for subsite and histology. So studies of the influence of quality of care on survival may increasingly be worthwhile, among other things assessing elements of structure and process, for instance adherence to guidelines. Registries in which data have been collected from clinical records can also provide information on patterns of care (19, 20) and relevant prognostic factors, such as co-morbidity (18) or even progression and metastasis (21).

FUTURE REPORTS?

A growing number of cancer registries, with or without national coverage, are benefiting from increasingly valuable long-term data which exhibit trends in cancer frequency and outcome and thus allow for an assessment of cancer control. This is even more important when national campaigns for screening have to be assessed or when changes in access to specialized care, usually with a restrictive undertone, threaten quality of care especially for the growing group of elderly patients. On the other hand, future survival trend reports like these may perhaps become superfluous, because advances in prevention and/or treatment could cause cancer to disappear like tuberculosis in the 1960s (even taking into consideration its reoccurrence 30 years later)? What is certain is that this will not happen before the 50th anniversary of the FCR in 2002 or the 60th in 2012. Even in 2027 at the 75th anniversary, long-term side effects of current 'half-way' technology, e.g. multiple primaries and other chronic conditions, may still need to be monitored, along with the implications of the increase in elderly patients and the rising occurrence of multiple primary cancers. Changes in treatment and in the care of patients with disease progression and metastasis may be worthwhile assessing. Nevertheless, the registry staffs, increasingly supported by fast and multipotential information and communication technology, may need to think in less traditional (although this is their strength) terms about the desired content of future reports on outcome of cancer management, including aspects of quality of life. The future may then lie more in reports that cover only certain sites related to specific specialties.

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