

Improved Survival for Screen-Detected Breast Cancer

NCIN Data Briefing

Introduction

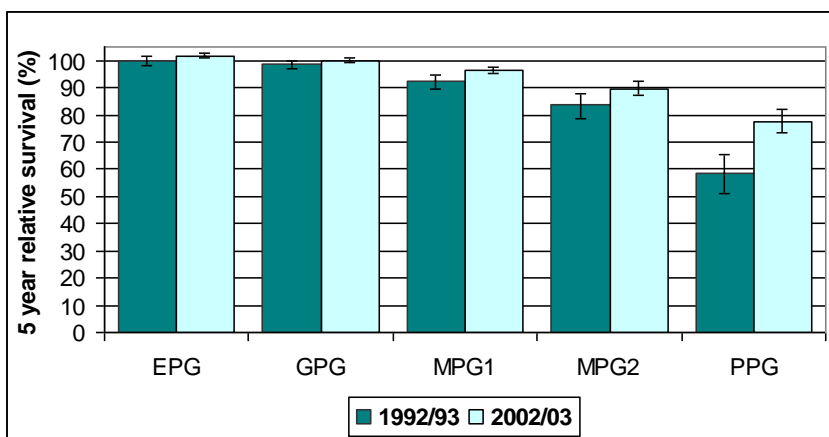
Of the 5,770 invasive breast cancers detected by the UK NHS Breast Screening Programme in 1992/93, 5,573 (97%) were recorded by regional cancer registries as first primary invasive breast cancers; 85 (1%) were recorded at the regional cancer registry but not as first primary invasive breast cancer; 113 (2%) were not recorded/had an incomplete record. In 2002/03, the number of invasive breast cancers detected by the UK NHS Breast Screening Programme increased to 8,396, and 8,131 (97%) were recorded as first primary invasive breast cancers (2% recorded but not as first primary invasive breast cancer, 1% not recorded/had an incomplete record). Relative survival was calculated for cancers confirmed to be first primary invasive breast cancers.

Nottingham Prognostic Index (NPI)

Invasive tumour size, grade and nodal status at diagnosis are combined to calculate a Nottingham Prognostic Index (NPI) score which can be used to assign patients with invasive breast cancer to one of five prognostic groups (Excellent, Good, Moderate1, Moderate2, Poor). Complete details needed to calculate the NPI were available for 50% of primary invasive breast cancers diagnosed in 1992/93 and 94% of primary invasive breast cancers diagnosed in 2002/03. Data completeness has improved in part because in some centres in 1992/93 nodes were not routinely assessed for all patients.

Improvement in 5-year survival for women with screen-detected invasive breast cancer

The overall 5-year relative survival rate for women diagnosed with screen-detected invasive breast cancer in 2002/03 is 97.1% (95%CI 96.5% - 97.7%) compared to 93.5% (95%CI 92.6% - 94.3%) for women diagnosed in 1992/93. Figure 1 shows how 5-year relative survival rates for women diagnosed with invasive breast cancers in 1992/93 and 2002/03 vary with NPI. As expected, 5-year survival rates are high for women in the Excellent Prognostic Group (EPG) and Good Prognostic Group (GPG), which predominate in the screen-detected cohort.



KEY MESSAGE:

Overall 5-year and 15-year relative survival for women with screen-detected invasive breast cancer (97.1% and 83.0% respectively) is very good.

There has been a marked improvement in 5-year survival for women with poor prognosis invasive breast cancer detected through the UK NHS Breast Screening Programme from 58.5% for 1992/93 cases to 77.7% for 2002/03 cases.

Only 4-5% of women each year were in the Poor Prognosis Group (PPG). 5-year survival for these women increased from 58.5% (95%CI 51.3%-65.1%) for 1992/93 cases to 77.7% (95%CI 73.3%-82.0%) for 2002/03 cases. This 19 percentage point increase is almost certainly due to the development and use of new adjuvant treatments.

Figure 1: Comparison of 5-year relative survival with NPI group for women with screen-detected invasive breast cancer diagnosed in 1992/93 and 2002/03

15-Year Relative Survival

The overall 15-year relative survival rate for women diagnosed with screen-detected invasive breast cancer in 1992/93, which was relatively near the start of the NHS Breast Screening Programme in 1988/89, is 83.0% (95%CI 81.5% - 84.5%). Table 1 shows how 15-year relative survival rates vary with tumour size, grade and nodal status. 15-year relative survival rates are over 90% for small, low grade or node negative invasive breast cancers which predominate in the screen-detected cohort.

Table 1: 15-year relative survival rates for screen-detected invasive breast cancers diagnosed in 1992/93

Tumour characteristic	Number of cancers	15-year relative survival % (95%CI)
Invasive breast cancer	5,573 (100%)	83.0% (81.5% - 84.5%)
Diameter <15mm	2,672 (48%)	91.0% (88.9% - 93.0%)
15-≤20mm	1,561 (28%)	81.8% (78.8% - 84.6%)
>20-≤35mm	842 (15%)	68.3% (64.0% - 72.3%)
>35-≤50mm	132 (2%)	55.0% (44.5% - 64.9%)
>50mm	62 (1%)	48.2% (33.6% - 62.4%)
Grade 1	1,552 (28%)	93.5% (90.8% - 96.0%)
2	2,059 (37%)	81.6% (79.0% - 84.1%)
3	870 (15%)	65.3% (61.1% - 69.3%)
Node status Negative	2,347 (42%)	90.1% (87.9% - 92.3%)
Positive	1,010 (18%)	62.8% (59.0% - 66.5%)

Further Information

Relative survival is defined as the observed survival in the patient group divided by the expected survival of the general population, matched by age and sex. The cumulative relative survival is interpreted as the proportion surviving a given interval after diagnosis in the hypothetical situation that breast cancer is the only possible cause of death. A population without breast cancer would have a relative survival rate of 100%. Relative survival was calculated, using the statistical package STATA. Probability of life tables for the general UK population were supplied by the Government's Actuary Department.

This data briefing is based on "An audit of screen-detected breast cancers for the year of screening April 2009 to March 2010" (NHSBSP & ABS, May 2011). The full NHS Breast Screening Programme publication, including methodology, is available to download from the NHS Breast Screening Programme website www.cancerscreening.nhs.uk and the WMCIU website www.wmpho.org.uk/wmciu/.

FIND OUT MORE:

[West Midlands Cancer Intelligence Unit](http://www.wmpho.org.uk/wmciu/)

West Midlands Cancer Intelligence Unit is the lead Cancer Registry for breast cancer

<http://www.wmpho.org.uk/wmciu>

Other useful resources within the NCIN partnership:

Cancer Research UK CancerStats – Key facts and detailed statistics for health professionals

<http://info.cancerresearchuk.org/cancerstats/>



The National Cancer Intelligence Network is a UK-wide initiative, working to drive improvements in standards of cancer care and clinical outcomes by improving and using the information collected about cancer patients for analysis, publication and research. Sitting within the National Cancer Research Institute (NCRI), the NCIN works closely with cancer services in England, Scotland, Wales and Northern Ireland. In England, the NCIN is part of the National Cancer Programme.