

Screening in the Over 70s:

Informing the Debate with National Data

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Introduction

Since the inception of national breast screening programs there has been an increased understanding of the potential adverse effects that screening can have including the psychological impact of a false positive screen results and the over-diagnosis and over-treatment of indolent cancers or in situ disease. It is widely accepted that there is a sufficient benefit from screening programmes for women aged 50-70 years.(1) However, there is no RCT evidence available on screening in women aged over 70 years, and attempts to quantify the harms and benefits of continued screening are not directly transferable to the UK population or the UK screening program.(2-4)

The UK breast screening program allows women over the age of 70 to actively opt in to continued triennial screening. The lack of evidence places both the individual woman and the screening service staff in a difficult position with the inevitable question **'should I continue to attend screening?'**. This retrospective data analysis study seeks to provide outcome evidence to help older women make informed choices.

Methods

Aggregate national screening data was retrieved from the KC62 Scottish Breast Screening Program returns database from 01/04/2010 to 31/03/2015. The data for women ≥ 71 years was interrogated and the following information retrieved; total number of women attending screening, number recalled to assessment, and number of cancers diagnosed. Biopsy rates, benign biopsy rates and cancer detection rates were calculated. Tumour grade and invasiveness were recorded.

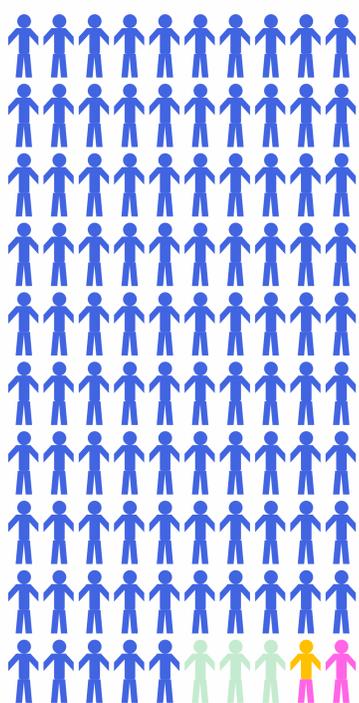
Mortality data was acquired through Information Services Division (ISD) Scotland. Breast cancer incidence from 01/01/2009 to 31/12/2013 was identified from the Cancer Registry. This data was recorded according to age at diagnosis, in five-year age bands, and then linked to death records. Death records were interrogated until 31/12/18, resulting in a follow-up period of 5-10 years. Cause of death was considered a *direct breast cancer death* where breast cancer was the first cause of death listed on the death certificate, a *secondary breast cancer death* where breast cancer was listed as a non-primary cause of death, and *non-breast cancer death* when breast cancer was not listed.

The diagnostic route was extracted from the cancer registry and categorised into *screening*, *symptomatic* and *other*

Results

Between 2010 - 2015, 47 235 women ≥ 71 years were screened, 2327 women (5%) were referred for further assessment, outcomes were available for 2280. Of those assessed, 42% (967) required a biopsy of which 674 were diagnosed with cancer. Benign or inconclusive biopsies were performed in 13% (295) of women assessed. Overall cancer detection rate was 14.3/1000, invasive cancer detection of 12.2/1000. Of the screen detected cancers in women ≥ 71 years, less than a third were high-risk lesions (high grade DCIS, 10.3% or grade 3 invasive disease, 18.5%). Almost half were intermediate risk grade 2 invasive cancers and the remainder were low-risk lesions; either low / intermediate grade DCIS or grade 1 invasive tumours. The infographic below seek to explain this at a patient level.

Between 2009 – 2013, 22013 women were diagnosed with breast cancer in Scotland. In the period to 31/12/18 there were 6697 deaths, minimum follow-up of five years. The majority of deaths (3957) were in women aged ≥ 71 years at diagnosis. However, whilst the absolute numbers of direct breast cancer death increased with age, when considered as a proportion of all deaths, the opposite was true as illustrated in **figure 1**. Of those aged ≥ 71 years at diagnosis, the cause of death was direct breast cancer in only 43% (1732 of 3957), as opposed to 61% (1249 of 1986) of those of 50-70 and 89% (610 of 682) of younger women. The trend was very similar for patients diagnosed symptomatically. Even for women ≥ 71 years who are symptomatic at diagnosis, more will die with breast cancer than of breast cancer



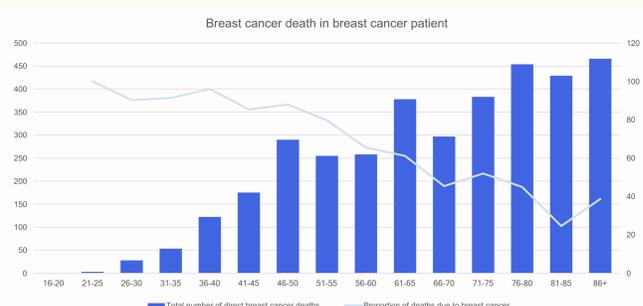
For every 100 women ≥ 71 years screened
 5 are recalled to assessment
 3 have further imaging only
 0.6 have a benign biopsy
 1.4 are diagnosed with cancer

For every 1 women diagnosed with high risk cancer...



1.7 women diagnosed with intermediate-risk cancer

0.7 women diagnosed with low risk cancer
 1 woman has a biopsy for benign disease
 7.3 women further imaged for benign disease



Conclusions

Benefits of screening women >70 yrs may be out-weighted by the risks. Over-diagnosis and anxiety related to a false positive recall should be discussed. As women age they become increasingly likely to die *with* breast cancer due to other causes. We propose this information should be available to women when deciding whether to be screened.

References

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