Cancer Research UK response to the UK National Screening Committee consultation: assessing mammographic breast density and the use of ultrasound in breast cancer screening

Introduction

Cancer Research UK welcomes the opportunity to respond to this consultation. Breast cancer is the most common form of cancer in the UK, accounting for 15% of all new cancer cases each year and over 11,500 deaths each year. Currently the Breast Screening Programme invites all women aged 50-70 for screening every three years. The screening programme detects cancer in about 8 out of every 1,000 women screened and prevents around 1,300 cancer deaths each year. Yet, for every death prevented through breast screening, 3 women will be overdiagnosed and undergo unnecessary treatment. Further to this, false negative results mean that 11% of women with breast cancer will have their disease missed at screening. We welcome efforts to improve the current programme, including the investigation into the link between breast density and breast screening. It is vital, however, that national policy is based on the most appropriate and sufficiently robust evidence.

Key points

- We agree with the National Screening Committee at this stage to not recommend additional breast density measurements or supplemental ultrasound in the Breast Screening Programme.
- It is essential to establish a safe, consistent and reliable method of measuring breast density before its routine use in clinical procedure could be considered. The current lack of a gold standard method must be addressed.
- We agree that evidence suggests breast density increases the risk of developing breast cancer and of cancers being missed during screening. However, we believe that further high-quality and better designed studies need to be conducted in both areas to build the evidence base on both clinical and cost-effectiveness within a screening programme.
- Further studies are also needed to measure the effectiveness of supplementary ultrasound in detecting cancers missed by mammograms, as the existing evidence is of low-quality. Studies must establish to what extent this would represent overdiagnosis as opposed to reducing interval cancers and mortality.
- We also call for future research to focus on the UK screening population, as international evidence may not be representative. Cancer Research UK is currently supporting a £2.8 million study into risk adaptive breast screening, which will help to address this issue.

Further information

Overall, we agree that mammographic breast density is an increased risk factor for developing breast cancer. However, many studies in this area are highly heterogeneous and inconsistent, as most primary research in this area consists of case-control studies which are generally lower quality and subject to biases. Because of the gaps in the evidence, future studies must further investigate the association between breast density and breast cancer risk before supplementary ultrasound screening could be considered within the breast cancer screening programme.

We agree that there is evidence to suggest that high breast density can mask tumours and decrease the sensitivity of mammography. However, we strongly support the call for more high-quality
studies to be conducted. This is due to a high variation in methods used to measure breast density, the limitations in the study design, and the fact that this area of research is still in its infancy. Further high-quality evidence is vital to accurately assess the potential benefits that mammographic breast density assessment may bring, including the reduction in interval cancers.

The report makes clear that there is currently no gold standard for measuring mammographic breast density. There are a variety of methods available, from visual through to fully automated, and numerous ways of conducting each method. The disparity in results between and within the different methodologies is striking, and we agree that National Screening Committee (NSC) criterion 4 – that there should be a simple, safe, precise and validated screening test – is not met.

It is essential that a reliable and consistent method for measuring breast density is established to prevent women from being categorised differently by different methods. We do not believe that measuring breast density can be integrated into the screening programme until there is a clear consensus on which method is clinically best. To reach a consensus on the best means of measuring breast density, stronger evidence is needed. We support the call for more UK-based studies that use multiple methodologies across different centres; this will help to build evidence of the clinical effectiveness and the best method of using this within the screening programme.

No good-quality studies were available to review regarding the use of supplemental ultrasound for women with dense breasts. While we commend the authors for updating a previous large-scale review from the USA, it remains the case that there is insufficiently robust evidence available to support a recommendation. With regards to evidence reviewed in this report, the authors raise a critical point: while ultrasound does appear to detect additional cancers, it is not clear whether this reduces either mortality or interval cancers, or to what extent identification of additional cancers represents overdiagnosis.

Cancer Research UK is currently supporting a £2.8 million study on risk adaptive breast screening. The study aims to evaluate the feasibility of a risk adaptive approach and will assess a range of automated breast density assessment tools. It will also test the feasibility of different supplemental imaging techniques in a screening setting, including Whole Breast Ultrasound. The study will seek to establish which density score would serve as a threshold in which it would be appropriate and effective to offer additional supplemental imaging tests.

Given that there is not sufficient evidence to support the policy recommendations, we cannot comment on cost-effectiveness at this time.

About us

Cancer Research UK is the world’s largest independent cancer charity dedicated to saving lives through research. It supports research into all aspects of cancer and this is achieved through the work of over 4,000 scientists, doctors and nurses. In 2017/18, we spent £423 million on research in institutes, hospitals and universities across the UK. We receive no funding from the Government for our research and are dependent on fundraising with the public. Cancer Research UK wants to accelerate progress so that three in four people survive their cancer for 10 years or more by 2034.

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1 Data provided by the Office for National Statistics on request, October 2017; https://www.cancerresearchuk.org/health-professional/cancer-statistics/statistics-by-cancer-type/breast-cancer/mortality#heading-Zero

2 NHS Breast Screening Programme (NHSBSP). Breast Screening Results from the NHSBSP 2012/13. London: Queen Mary University of London; 2014.

