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Letter

Comment on "The relative contributions of screen-detected *in-situ* and invasive breast carcinomas in reducing mortality from the disease" by S.W. Duffy, L. Tabar, B. Vitak *et al.*☆

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Duffy and colleagues aimed to quantify the benefits of detecting ductal carcinoma *in situ* (DCIS) and of downward stage-shifting within invasive tumours in mammographic screening [1]. In an elegant analysis they conclude that, compared with downward stage-shifting of invasive tumours, detection of DCIS only plays a small part in saving lives by mammographic screening. In their discussion, they argue that higher detection rates of DCIS might result in a greater mortality reduction. However, in a table summarising the figures of eight trials, they show that a negative correlation between the percentage of DCIS cases and the size of the mortality reduction is more likely than a positive one. It would have been helpful if the authors could have handed the readers some possible explanations for this counterintuitive finding.

The percentage of DCIS appears to be strongly related to the time interval between subsequent screening mammograms. In the Swedish Two-County trial, where a screening interval of 33 months was applied, the risk of being diagnosed with DCIS was 8% [1]. In the Netherlands, where women of 50–75 years of age are invited for mammographic screening every 2 years, the proportion of DCIS in this age group was 12.4% in 1998 [2]. In the United States, where screening activities are less well organised and the intervals between subsequent mammograms tend to be much shorter, in 2000 19.5% of all newly-diagnosed breast cancers were DCIS [3]. International variation in screening mammography interpretations is another explanation for variations in the percentage of DCIS. In a recent comparison of community-based screening programmes from around the world, wide ranges were noted for the percentage of mammograms judged to be abnormal (1.2%–15%), for the positive predictive value of a positive mammogram (3.4%–48.7%) and for the percentage diagnosed with DCIS (4.3–68.1%) [4]. In our view, the lack of a positive association between the percentage of DCIS and the observed mortality reduction by screening can be largely attributed to the overdiagnosis of well-differentiated, non-progressive DCIS. We realise that this view is not compatible with the conclusion of an accompanying paper of the same group in which it was estimated that on average only 4% of DCIS cases diagnosed at an incidence screen are non-progressive [5]. However, these estimates were largely based on the figures of the Dutch and Swedish screening programmes, which were the only programmes providing information on interval cancers.

Apparently, the Swedish Two-County trial has succeeded in setting up a highly effective screening programme with an acceptable proportion of DCIS. However, this might not be the case in other screening programmes or in places with opportunistic screening activities, which put women at a higher risk of overtreatment and psychological morbidity [6].

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