

Cancer causes & control

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Received: 18 January 2011 / Accepted: 20 May 2011 / Published online: 3 June 2011
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We would like to submit this brief manuscript as a letter for publication in CCC.

Lowery et al. [1] sought to document the incidence of breast cancer during the year following a negative mammogram so as to “facilitate identification of high-risk women who may benefit from increased surveillance.” For women as a whole and for subgroups defined by demographic and clinical characteristics, they wished to accomplish the important goal of providing “information about the true burden of breast cancer.”

The authors approached this task by enumerating the 208,667 women in the Denver Metropolitan Area who took part in a mammography screening program during 1994–2001 and ascertaining in them (by linkage to records of the Central Colorado Cancer Registry through the end of 2002) breast cancers that were diagnosed during the year following their last negative screening mammogram. Appropriately, “screening examinations performed after a documented diagnosis of breast cancer were excluded.”

Our concern is that the choice to restrict the ascertainment of interval breast cancer to the year after the *last* negative screening exam has resulted in a distortion of the absolute incidence of interval cancer. Lowery et al. express the incidence of interval cancer as cases per 10,000 negative women. However, for any woman whose last screening mammogram was negative, the incidence of interval cancer

after any of her prior negative screening mammograms could only have been zero.

Given that many women in this study population had two or more screening mammograms during the 8-year period, the failure to consider the incidence of interval breast cancer after *all* negative screens, and not just the most recent one, has led to an inflated estimate of risk. If, for example, women taking part in the program had an average of two exams, the incidence of interval breast cancer during the 1-year period following a negative screen would be exactly half of the observed incidence of 29.5 per 10,000. It is possible as well that failure to capture the cohort’s entire experience has led to some bias in the relative incidence of interval cancer across demographic and clinical subgroups of women to the extent that the number of screening mammograms prior to the last negative one differed from one subgroup to the next.

The choice of screening interval is heavily influenced by the frequency of the condition for which rescreening is being considered. We suggest that additional analyses of the data from the Denver Metropolitan Area will need to be done before the experience of that population can contribute to our understanding of the magnitude of the incidence of breast cancer following a negative screening mammogram.

Reference

1. Lowery JT, Byers T, Johansson JE et al (2011) Complementary approaches to assessing risk factors for interval breast cancer. *Cancer Causes Control* 22:23–31

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