

Response to: “Counterpoint re: ‘Mammography screening—sticking to the science’”

The Editor
Current Oncology
24 July 2015

Dr. Steven Narod suggests that the increased hazard ratio associated with being in the mammography arm of the CNBSS [Canadian National Breast Screening Study] in the prevalence (initial) screening round results from cancers that ultimately would be lethal being detected earlier in that arm because of the lead time provided by mammography¹. Well, that's one explanation. However, his estimate of the number of such cancers depends on an estimate of the amount of overdiagnosis. Such a calculation requires several assumptions to be made on the basis of very limited information about the behaviour of women after screening in the CNBSS was completed and would be subject to considerable uncertainty.

Although it is conceivable that increased lead time provided by mammography screening could cause incurable cancers to be detected in the first screening round rather than in a subsequent year by the woman herself, this explanation implies that those lethal cancers would not yet have been detectable by palpation on the prevalence screen. Applying Occam's Razor, the CNBSS data point directly to a far simpler explanation. On the prevalence screen, 19 poor-prognosis cancers, of which 17 were palpable, were found in the mammography arm of the trial, and only 5 such cancers appeared in the control arm. The odds of that distribution occurring by chance are 3 in 1000. In other words, *highly unlikely* compared with the more reasonable explanation that randomization had been compromised, possibly because the women received clinical breast examination before official registration into the open-book randomization. Being palpable, those

cancers were not found earlier because of lead time, but rather because they were prevalent cancers that had been developing over time before the study began and were already sufficiently advanced at the time of the prevalence screen that any benefit from detection by screening was precluded. This simpler explanation is further supported by the fact that no other trial of breast cancer screening experienced such a disproportionate imbalance of advanced breast cancers in the screening arm compared with the control group.

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CONFLICT OF INTEREST DISCLOSURES

I have read and understood *Current Oncology's* policy on disclosing conflicts of interest, and I declare the following interests: I am a founder and shareholder of Matakina Technology, a company that develops and markets algorithms for quantification of breast density. My institution receives funding for collaborative research in digital breast tomosynthesis and contrast-enhanced mammography from GE Healthcare and for research in cancer biomarker multiplexing from GE Global Research Center, in which I am an investigator.

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REFERENCES

1. Narod SA. Counterpoint re: “Mammography screening—sticking to the science.” *Curr Oncol* 2015;22:177.