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Journals Club

Review of: The incremental contribution of clinical breast examination to invasive cancer detection in a mammography screening programme

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N. Oestreicher, C. D. Lehman, D. J. Seger, D. S. M. Buist, E. White. The incremental contribution of clinical breast examination to invasive cancer detection in a mammography screening programme. ***American Journal of Roentgenology*** 2005; **184**: 428–32.

Abstract of the original article
Objective: The objective of this study was to determine the potential added contribution of clinical breast examination (CBE) to invasive breast cancer detection in a mammography screening programme, by categories of age and breast density.

Subjects and methods: We prospectively followed 61 688 women aged 40 years or older who had undergone at least one screening examination with mammography and CBE between 1 January 1996, and 31 December 2000, for 1 year after their mammogram for invasive cancer. We computed the incremental sensitivity, specificity, and positive predictive value of CBE over mammography alone for combinations of age and breast density (predominantly fatty or dense).

Results: Mammography sensitivity was 78% and combined mammography–CBE sensitivity was 82%, thus CBE detected an additional 4% of invasive cancers. CBE detected a minority of invasive cancers compared with mammography for all age groups and all breast densities. Sensitivity increased from adding CBE to screening mammography for all ages, from 6.8% in women ages 50–59 with dense breasts to 1.8% in women ages 60–69 years with fatty breasts. CBE generally added incrementally more to sensitivity among women with dense breasts. Specificity and positive predictive value declined when CBE was used in conjunction with mammography, and this decrement was more pronounced in women with dense breasts.

Conclusion: CBE had modest incremental benefit to invasive cancer detection over mammography alone in a screening programme, but also led to greater risk of false-positive results. These risks and benefits were greater in women with dense breasts. The balance of risks and benefits must be weighed carefully when evaluating the inclusion of CBE in a screening examination.

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Review

This study had looked at the incremental benefit of adding clinical breast examination (CBE) by trained nurses to mammographic screening. Overall there was a 4% increase in invasive cancer detection by adding CBE. The authors attempt to analyse the potential benefit of adding clinical examination within subgroups defined by mammographic breast density and age. Unfortunately, the number of patients in some of these groups are as low as 15 meaning the potential benefits within these subgroups should be interpreted with caution.

The addition of CBE appeared to have greatest benefit for those with mammographically dense breasts. However this group constituted the patient group who were most harmed by CBE by having a higher rate of false-positive recalls. In particular the positive predictive value of mammography of 44% contrasts with that of CBE of only 8%.

There are two significant problems with the study. Firstly, is that the women under the age of 50 included in the study were selected on the basis of increased risk. It is known that risk factors for breast cancer may have an effect on breast density meaning that any potential benefit of clinical examination in this subgroup may not be generalized to all women aged 40–49. More seriously, the authors have failed to raise the problem that increased cancer detection does not necessarily mean an increase in lives saved. No prognostic information on the additional cancers detected by CBE are given. It may be that the tumours detected by clinical examination alone were large and node positive and therefore have no additional benefit to the patient in terms of reducing breast cancer mortality. On the other hand if the lesions were small and node negative the incremental benefit on reducing breast cancer mortality may be greater than the 4% increase in overall cancer detection. Despite the shortcomings, this article has data which will help women make informed choices about the benefit and harm that might arise from choosing to have CBE in addition to screening mammography.

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