S18. Is Mammography Screening for Breast Cancer Really Not Justifiable?

Anthony B. Miller

Division of Clinical Epidemiology, Deutsches Krebsforschungszentrum, Heidelberg, Germany

In their Cochrane review, Olsen and Gotzsche, 2001, suggested that randomization was inadequate in achieving balance between the groups in at least three of the Swedish mammography screening trials. Although many have disputed their findings and analyses, it is notable that none of the investigators associated with the Swedish trails have refuted their suggestions with data. The problem is particularly acute for the Two county trial, as that was the largest, had the greatest degree of benefit overall, and has been influential in influencing policy in many countries.

The Swedish two county trial was cluster randomized, involving 133,967 women distributed in only 45 clusters. A special analysis by Nixon et al, 2000, contributes to the debate, however, as when they analysed the data by clusters, using appropriate techniques, they found that fixed effects, and a variety of random effects models show a strong degree of agreement and yield a significant 29% or 30% reduction in breast cancer mortality. Further, the heterogeneity among clusters and strata was relatively small.

This does not solve the problems with this trial, however. Comparison of survival of breast cancers in the two County and Canadian trials show that outcome was similar in the screened groups in the Canadian and Swedish trials, but far worse in the controls in the two-county trial. There is evidence that adjuvant chemotherapy or hormone therapy was not used in the Swedish trial, but was used in the Canadian, raising the possibility that this difference in the use of effective therapy was the main reason for the poorer outcome in Swedish controls than Canadian. Further, this must mean that the survival experienced by the women with breast cancer in the Swedish controls, and used as a basis for a number of analyses of the benefit expected from breast screening, is not the current expectation. This must have some impact, perhaps a major impact, on the estimated benefits that are likely to be derived from breast screening.

The Canadian trial shows that in spite of good sensitivity of the screen, which led to the expected detection by mammography of an excess of small, node-negative breast cancers, there was no benefit in reduction in breast cancer mortality over that achieved by annual breast physical examination screening. The HIP trial in the 1960s had much inferior cancer detection to that from modern mammography, but found a similar order of mortality reduction as in the Two-county trial, suggesting, as does the Canadian trial, that much if not all of the benefit is achieved by good breast physical examinations. This must mean that the benefit from breast screening derives, not from the early detection of impalpable cancers, but from the early detection of relatively advanced palpable lesions. These, with a 1.5 year mean sojourn time, can be detected either by skilled breast physical examinations or by modern mammography.

So my answer to the question posed is "No, but only providing that women have access to skilled breast physical examinations."