Screen-Detected Breast Ca Has Better Outcome

BY MICHELE G. SULLIVAN
Mid-Atlantic Bureau

Women whose breast cancers were detected by screening mammography were 53% less likely to die of breast cancer over a 10- to 15-year period than those whose cancers were detected symptomatically, Donald Berry, Ph.D., and his colleagues have reported.

The study of more than 150,000 women doesn't mean that screening mammography is beneficial, however, Dr. Berry told this newspaper. The real reason behind the survival shift, he said, is that mammography picks up tumors that grow more slowly and are less biologically lethal than those discovered symptomatically.

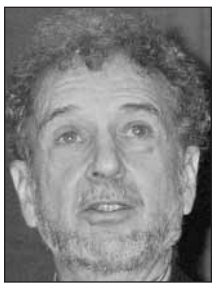
Dr. Berry, chairman of the department of biostatistics and applied mathematics at the University of Texas, Houston, and his coinvestigators examined survival outcomes in three large North American breast cancer screening trials containing about 152,000 women: the breast cancer screening trial of the Health Insurance Plan of Greater New York (HIP) and two Canadian National Breast Screening Studies (CNBSS-1 and CNBSS-2).

The HIP screening was carried out in the 1960s, while both CNBSS trials were conducted in the 1980s. Follow-up ranged from 15 to 20 years (J. Natl. Cancer Inst. 2005;97:1195-203).

The researchers looked at the occurrence of screen-detected cancers, cancers detected in control groups (no screening mammography), and interval/incident cancers (cancers detected either less than 1 year or more than 1 year after the last negative screen).

There was a clear shift toward earlier stage cancers in the screening groups. In the HIP trial, 76% of screen-detected cancers were stage I, compared with 51% of interval/incident cancers and 49% of cancers in the control group. Control subjects and women who failed to attend their screenings had the highest percentage of stage III/IV cancers—14% and 22%, respectively.

In the CNBSS-1, 55% of screen-tested cancers, 40% of interval/incident cancers, and 47% of cancers in the control group were stage I. In the CNBSS-2, 62% of the screen-detected cancers, 44% of the interval/incident cancers, and 47% of the cancers in the control group were stage I. In both trials, the highest percentage of stage III/IV cancers occurred in the interval/incident group (about 20%).



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DR. BERRY

Tumor sizes were smaller in the screening groups in all three studies; there was a significantly higher proportion of negative lymph nodes among women with screen-detected cancers in all three studies.

These characteristics reflect lead-time bias, Dr. Berry said, and he adjusted the analysis to compensate for this. However, even after adjustment for tumor characteristics, women whose cancers were detected by screening had the longest survival time. The relative risk of breast cancer death was 53% greater for women with interval/incident cancers and 36% greater for those in the control group with cancer, than were those for women with screen-detected cancers.

The survival advantage seems to arise from the mammogram's tendency to detect less aggressive tumors, he said. "Cancers found via screening include a higher proportion of slowly growing tumors, some of which might never be found by other means." Paradoxically, this "overdiagnosis bias" means that the study cannot answer the question of whether screening mammography is beneficial.

"In addition to detecting the lethal tumors, screening also detects some [tumors] of the nonlethal variety," Dr. Berry said. Some women with screen-detected nonlethal tumors may receive unnecessary surgery or other treatment, he said.

The investigators noted several limitations of the study. Since all women were screened in either the 1960s and the 1980s, the trials not only used less sophisticated mammographic techniques, but they also did not reflect tumor grading with modern biomarkers or the improved treatment techniques that are available today. ■