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New Data on Mammography Survival Benefit at Ages 40 to 49 Should End Debate, Expert Says



Zosia Chustecka

October 1, 2010 — New data from a large Swedish study show that mammography screening in women aged 40 to 49 years results in a much greater reduction in mortality from breast cancer than has been previously reported.

"This huge study from Sweden should end any debate" over the benefits of regular mammography screening in this age group, said a leading expert on mammography, Daniel Kopans, MD, professor of radiology at Harvard Medical School in Boston, Massachusetts, who was approached for comment. Beginning mammography at age 50 "has never had any scientific basis and should be dropped," he said.

The issue leapt into headlines late last year, when the US Preventive Services Task Force (USPSTF) **recommended against** regular screening mammography in women 40 to 49 years, in direct contrast to the recommendations from other American authorities. At the time, top mammography experts, including Dr. Kopans, **expressed outrage** at this recommendation, saying that it would lead to lives being lost to breast cancer.

The experts also question the calculation of benefit by the USPSTF, which estimated a 15% reduction in breast cancer mortality from mammography in women 39 to 49 years of age.

The new data from Sweden found a 26% reduction in breast cancer mortality among the women in the 40 to 49 year age group who were invited for screening, and a 29% reduction in those who actually underwent the screening (not all those who were invited participated).

"This is bigger and better than has been seen in other studies," said Jennifer Obel, MD, from the NorthShore University Health System in Evanston, Illinois.

The new data were outlined by Håkan Jonsson, PhD, associate professor of cancer epidemiology at Umeå University in Sweden, at an American Society of Clinical Oncology (ASCO) presscast for the upcoming Breast Cancer Symposium. The study was published online September 29 in *Cancer*. Dr. Obel was moderating the presscast, and is on the ASCO Communications Committee.

True-to-Life Study

The Swedish data on women 40 to 49 years represents the "largest epidemiological study of mammography in this age group," Dr. Jonsson told reporters. There were more than 1 million women involved, with an average follow-up of 16 years.

"While this was not a randomized controlled trial, it captured a real-life experience of mammography in this age group . . . [because] of a unique confluence of events," said Dr. Obel.

It came about because of differences in counties in Sweden, Dr. Jonsson explained. When Sweden introduced a nationwide mammography program in 1986, it targeted women 50 to 69 years of age, but it was left up to individual counties to decide whether or not to also invite women 40 to 49 years to be screened.

About half of the counties did so and half did not (the control group). The invitations to screening were issued every 2 years, so from the ages of 40 to 49 years, these women would have undergone about 5 rounds of screening, Dr. Jonsson explained.

During the follow-up period, from 1986 and 2005, there were 619 deaths from breast cancer among the women who had been invited for screening, and 1205 deaths in the control group.

The rate ratio was 0.74 (95% confidence interval [CI], 0.66 - 0.83) for women invited to be screened (i.e., 26% reduction), and 0.71 (95% CI, 0.62 - 0.80) for women who were actually screened (29% reduction).

Dr. Jonsson contrasted these findings with data considered by the USPSTF, which found 448 deaths from breast cancer in the screened group and 625 in the control group, and a 15% reduction in mortality. When asked about the differences between the 2 findings, he said the USSPTF data were based on a meta-analysis of 8 randomized clinical trials, but many of those trials were old, having been conducted more than 20 years ago.

The Swedish data are robust and are "far superior" to the computer models that the USSPTF used, Dr. Kopans explained. They offer "direct proof that the benefit is almost twice as high as the estimate used by the USSPTF," he added.

Mammography in Women 40 to 49 Years of Age

"In this large study, mammography screening for women aged 40 to 49 is clearly shown to be efficient for reducing breast cancer mortality," Dr. Jonsson concluded. The researchers estimated that the number of women that had to be invited to be screened in the 40 to 49 year age group to save 1 life was 1252.

"This study adds to our knowledge of the performance of mammography in this age group," Dr. Obel said. "Many women aged 40 to 49 want unambiguous recommendations," she noted, but the optimum use of this screening continues to be discussed among experts in the field. She recommended that women in this age group discuss the risks and benefits with their doctor to decide "what is best for them individually."

Currently in the United States, most organizations recommend yearly mammograms beginning at age 40, including the American Cancer Society, the National Comprehensive Cancer Network, the American Medical Association, the American College of Surgeons, and the American College of Obstetricians and Gynecologists.

It is only the USSPTF that does not recommend regular mammography in the 40 to 49 year age group, but recommends screening every 2 years for women 50 to 74 years of age. But there are other countries that also use the age of 50 as the threshold at which to begin mammography screening, such as the United Kingdom.

Dr. Kopans is adamant that the age of 50 as a threshold is scientifically unsupportable, and has no biologic basis. "Data have been used inappropriately to make it appear as if something changes abruptly at the age of 50, when the data, actually, do not show any sudden changes in the parameters of screening at the age of 50, or any other age."

Another expert approached for comment was also in favor of starting mammography at the age of 40. "Virtually all studies that have evaluated, in a scientifically rigorous way, the effectiveness of mammography have shown a benefit in breast cancer mortality in the younger women," said Mark Pearlman, MD, from the University of Michigan in Ann Arbor, who holds the only breast disease fellowship in obstetrics and gynecology in the United States.

The difference with older women is that more breast cancer is detected, so the numbers needed to screen become smaller, he explained. For instance, in the data from the USSPTF, the number needed to screen to detect a single case of breast cancer was 1900 in women aged 40 to 49 and 1300 in women aged 50 to 74, he explained. A similar difference would be expected in the numbers needed to screen to save a life from breast cancer.

Although the same amount of screening will save more lives in the older age group than in the younger age group, Dr. Pearlman emphasized that in younger women, screening "saves more years of life." If you analyze the data in terms of life-years saved, then screening in younger women is actually more efficient than in older women, he added.

While careful not to imply that the life of a younger woman is more valuable than the life of an older woman, he suggested that the implications are different, because younger women are more likely to be mothers and to be managing the lives of several others. "This takes us out of the scientific arena and into socioethical areas" Dr. Pearlman said, "but we need to be aware as a society of the implications of not screening a woman in her 40s."

Strong Support for Starting at Age 40

The new study also drew a strong reactions from the American College of Radiology and several other bodies, all of which support starting screening with mammography at age 40 years.

The American College of Radiology describes the new Swedish data a "landmark" study and said they "confirm that the use of the age of 50 as a threshold for breast cancer screening is scientifically unfounded. Women should begin getting annual mammograms at age 40."

"This study, which looked at the performance of screening mammography as it is actually used, rather than relying on mathematical modeling, shows without a doubt that mammography decreases deaths from breast cancer in women aged 40-49 by nearly one third," said Carol H. Lee, MD, chair of the American College of Radiology Breast Imaging Commission, in a statement. "There is no excuse not to recommend that average risk women begin annual screening mammography at age 40."

The debate is now over

Voicing a similar opinion in the same press release was Phil Evans, MD, president of the Society of Breast Imaging. "This study shows that annual mammograms for women 40 and over result in a tremendously significant reduction in the breast cancer death

rate," he said. "The age of 50 is an artificial threshold that has no basis in scientific fact. The debate is now over."

A third voice in the same release expressed the same strong opinion.

"It is now time to stop confusing women with conflicting information. Mammography is a lifesaver for women in their 40s," said Gail Lebovic, MD, breast surgeon and president of the American Society of Breast Disease. "What providers need to do now is uniformly confirm for women that they need to start getting annual mammograms beginning at age 40 and work to build on the ability of mammography to detect cancer early, when it is most treatable."

In reaction to the reactions that the debate is ended, the American Cancer Society suggested that discussions should continue. Otis Brawley, MD, chief medical officer from the ACS, said in a statement released to *Medscape Medical News*, "This has become an incredibly polarized debate. The focus of our discussion really should be how to improve screening technologies so that we prevent as many of the more than 40,000 breast cancer deaths in the US every year as we can. While even the USPSTF says screening women in their 40s is a viable option, and the American Cancer Society says it's effective enough that every woman should be screened starting at age 40, none of us should be completely satisfied. We must support research to find better screening and diagnostic tools and better treatments that would make this current discussion a footnote in cancer history."

The fourth annual Breast Cancer Symposium is cosponsored by the American Society of Breast Disease, the American Society of Breast Surgeons, the American Society of Clinical Oncology, the American Society of Radiation Oncology, the National Consortium of Breast Centers, the Society of Surgical Oncology, and the Susan G. Komen for the Cure.

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