

Screening Has Little Impact on Breast Cancer Deaths

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Medscape Medical News
August 3, 2011

<http://mp.medscape.com/cgi-bin1/DM/t/hDQqh0VOSOo0D1D0FpjA0Er&uac=113400DT>

Screening has been successful in reducing deaths from cervical cancer and colorectal cancer, but not breast cancer, according to the authors of a new European study [published online](#) July 28 in *BMJ*.

Better treatment and improved healthcare-delivery systems are more likely to have led to reduced deaths from breast cancer than routine screening with mammography, lead author Philippe Autier, MD, from the International Prevention Research Institute, Lyon, France, told *Medscape Medical News*.

"Deaths from breast cancer are decreasing in North America, Australia, and most Nordic and western European countries, but it is difficult to tell whether this decrease is due to early detection from screening and early treatment, or whether it is due to better healthcare, he said. "We think it's due to better care."

However, his views are hotly contested by mammography experts in the United States.

Trends in Mortality

Dr. Autier and colleagues note that deaths from cervical cancer decreased substantially in Iceland and Finland after nationwide screening programs were initiated in the 1960s. However, in neighboring Norway, where screening programs were delayed, the reduction in mortality did not become apparent until many years later.

The team decided to see if something similar happened with breast cancer. Their hypothesis was that the reduction in mortality in countries that implemented mammography screening early would appear before the reduction in similar countries that started screening later.

To test this hypothesis, Dr. Autier and his team compared trends in breast cancer mortality in 3 pairs of neighboring European countries. In each pair, mammography had been introduced in one of the countries in or around 1990, but was not introduced in the other country until some years later. The pairs examined were Northern Ireland (United Kingdom) vs the Republic of Ireland, the Netherlands vs Belgium and Flanders, and Sweden vs Norway.

The researchers analyzed data from the World Health Organization (WHO) mortality database on cause of death from 1980 to 2006, as well as data sources on risk factors for breast cancer death, mammography screening, and cancer treatment.

They found that although there was a considerable gap between the introduction of mammography screening in the paired countries, breast cancer mortality was fairly similar.

For example, a nationwide mammography program was introduced in Northern Ireland around 1990, but it was not introduced until 2000 in the Republic of Ireland. The WHO data showed that breast cancer mortality was reduced by 29% in Northern Ireland and by 26% in the Republic of Ireland from 1980 to 2006.

In the second group, mammography was introduced in the Netherlands in 1989, in Belgium in 2001, and in Flanders in 2002/03. The WHO data showed that breast cancer mortality decreased by 25% in the Netherlands, by 20% in Belgium, and by 25% in Flanders from 1980 to 2006.

In the third pair of countries, mammography was introduced in Sweden in 1986 and in Norway in 1996. The WHO data show that breast cancer mortality decreased by 16% in Sweden and by 24% in Norway from 1980 to 2006.

Dr. Autier emphasized that "after 1989, the breast cancer mortality in these countries were comparable, despite a 10- to 15-year difference in the implementation of mammography screening."

The decline in mortality started between 1991 and 1996 in Norway, Belgium, the Republic of Ireland, Northern Ireland, and the Netherlands. In Sweden, breast cancer deaths started to decline in 1972, and the mortality from breast cancer has remained stable in that country over time. The reduction after 1989 was modest, compared with other European countries, he noted.

These downward trends in mortality started before or shortly after the implementation of mammography screening. The greatest reductions were in women 40 to 49 years of age, regardless of the availability of screening in this age group.

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These pairs of countries are very alike. They have the same access to care, the same demographic structure, and often the same language. The fact that we don't see any difference in mortality over time is a sure sign that mammography did not work very well," Dr. Autier said.

He added that these results were unexpected.

It looks like mammography really doesn't do the job.

"We were surprised. We thought there might not be that strong an effect of mammography, but that we would see something. But we barely saw anything," he said. "The main message is that we really have to work out what is going on with mammography screening in our population. We have plenty of data that screening for colorectal cancer and cervical cancer is worthwhile, but for breast cancer, it looks like mammography really doesn't do the job."

Bemused and Frustrated

These views are hotly contested by the American College of Radiology (ACR), which immediately issued a statement declaring that "the conclusions of the *BMJ* study authors have little bearing on, or resemblance to, screening in the United States. Improvements in therapy have, likely, played a role in the decrease in breast cancer deaths, but therapy cannot cure advanced cancers. Early detection via mammography is clearly the major reason for the decrease in deaths in the United States."

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Carol Lee, MD, a spokesperson for the Breast Commission of the ACR and a radiologist in private practice in New York City, told *Medscape Medical News* that she is "frustrated and bemused by continuing attempts to disprove what we've proved over and over again."

Dr. Lee said: "We have a number of randomized controlled trials involving a half a million women over the course of many years that showed that screening with mammography results in decreased mortality from breast cancer. We've observed this in this country."

The study had a number of limitations, she added.

"Just because counties are adjacent to each other, it does not necessarily mean that their breast cancer incidence is comparable. They didn't take that into account," Dr. Lee said. "They assumed that screening started all of a sudden in the areas that began a screening program, but this did not happen. In fact, it took a while to implement. They also included breast cancer deaths among

cases that were diagnosed before the advent of screening in the screening groups, so there were just a lot of different designs and problems."

Difficult to Compare European and American Screening



Stamatia Destounis, MD, from the University of Rochester Medical Center in New York, noted that it is difficult to compare screening programs in Europe and the United States.

"In our country, in the 1980s, after the initiation of screening mammography, the incidence of breast cancer increased and, within 5 to 7 years, predictably, breast cancer deaths decreased," she told *Medscape Medical News*.

"Although breast cancer treatment is certainly important, it doesn't cure advanced breast cancer, and the best method of long-term survival after a diagnosis of breast cancer is the early detection of small highly treatable tumors. It is most important to start screening at age 40 to identify tumors early when they are most treatable," Dr. Destounis said.

Dr. Autier countered that the randomized trials that have found a benefit for mammography have been criticized for years because they are flawed.

For breast cancer, the benefit is still controversial.

"Our data give some support to the criticisms of these trials.... A Canadian trial did not show any benefit; in contrast, we know that screening for cervical cancer works very well. It is the same for colorectal cancer. But for breast cancer, the benefit is still controversial," he said.

Benefit is Controversial



Weighing in with his opinion, John Keen, MD, attending radiologist at Cook County John H. Stroger Hospital in Chicago, Illinois, supported Dr. Autier's assertion that the benefit of mammography is controversial.

"As usual, Dr. Lee won't accept the evidence and remains the key mammography marketer for the ACR," he told *Medscape Medical News*.

"I noticed her new line of reasoning — that 'therapy cannot cure advanced cancers.' The problem here is that screening has *not* decreased the incidence of advanced cancer. Screening inherently misses the fast growing and catches the slow growing; hence, screening causes overdiagnosis with little mortality benefit," he explained.

"Overdiagnosis of small screen-detected tumors that would never become clinically evident results in overtreatment with drugs and needless radiation, which can cause heart disease and increase future deaths," Dr. Keen added.

"The trials have not shown any overall mortality benefit, nor is there any trial evidence to justify aggressive annual screening. Screening also increases overall mastectomies and lumpectomies because of overdiagnosis. The greatest benefit-to-harm ratio occurs for women in their 60s, which is what radiologists should be telling women."

Dr. Autier, Dr. Destounis, and Dr. Keen have disclosed no relevant financial relationships. Dr. Lee is a spokesperson for the American College of Radiology.