Some Breast Cancer Patients Can Safely Skip Radiation Therapy

People with noninvasive or early-stage breast cancer had similar outcomes whether they received radiation therapy or not.

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Some people with breast cancer may be able to skip radiation after surgery without increasing their risk for disease progression, according to three studies presented at the recent San Antonio Breast Cancer Symposium (SABCS). Forgoing radiation would reduce both side effects and logistical hassles.

“Although techniques of radiation treatment have improved dramatically, and it is far more efficient and tolerable now than it used to be, patients appreciate having a choice about their treatments,” Reshma Jagsi, MD, of Emory University’s Winship Cancer Institute said in an American Association for Cancer Research news release.

Noninvasive Breast Cancer

One trial looked at the benefits of post-surgery radiation for people with ductal carcinoma in situ (DCIS), a noninvasive type of breast cancer that seldom progresses to invasive disease. Nonetheless, a majority of women with DCIS undergo surgery followed by adjuvant (post-surgery) radiation therapy to reduce the risk of recurrence.

“There is an increasing realization that DCIS carries an unnecessary treatment burden for many women,” Seema Khan, MD, of Northwestern University’s Robert H. Lurie Comprehensive Cancer Center, said in another news release.

The E4112 trial (NCT02352883) is evaluating magnetic resonance imaging (MRI) plus a gene expression profile to guide treatment. Previous results from the study showed that MRI helped identify people who could opt for less intensive breast-conserving surgery instead of a mastectomy. The new analysis aimed to determine whether these patients could also safely skip radiation.

This analysis included 171 patients with DCIS who underwent breast-conserving surgery. The researchers used the Oncotype DX Breast DCIS Score, based on a laboratory test that measures gene expression in tumors. Those with a score below 39 were considered to be at low risk and were eligible to forgo radiation, while those with a higher score were advised to receive it.

After a median five years of follow-up after surgery, 5.5% patients with low risk scores who skipped radiation therapy experienced disease recurrence, compared with 4.8% of those with high risk scores who received radiation, a difference that was not statistically significant.

“Our results indicate that the Oncotype DX Breast DCIS Score was an effective tool to stratify patients for adjuvant radiotherapy following breast-conserving surgery,” Khan said. “Women who skipped radiation based on this score did not experience an excess risk of recurrence in the same breast during the five-year follow-up period. These findings reveal a new approach to guide treatment decisions by determining which patients may benefit from radiotherapy and which patients may safely forego it.”

Stage I Breast Cancer

Breast cancer is classified according to the type of receptors on tumors. A majority of breast tumors carry hormone receptors for estrogen or progesterone (HR-positive), making them susceptible to hormone therapy. Tumors that express a receptor called HER2 can be treated with HER2-blocking drugs. HR-positive/HER2-negative breast cancer is the most common type. Triple-negative breast cancer doesn’t express any of these receptors and is harder to treat.

The IDEA trial (NCT02400190) enrolled people ages 50 to 69 with Stage I HR-positive/HER2-negative breast cancer; 30% were ages 50 to 59, while 70% were 60 to 69. Such patients typically undergo breast-conserving surgery followed by adjuvant radiation and hormone therapy to reduce the risk of recurrence. In recent years, it’s become evident that some people ages 65 and older can safely avoid radiation with a low risk of recurrence, but it was unclear whether this is also the case for younger postmenopausal patients, Jagsi noted.

The researchers used a different gene expression profile, the Oncotype DX Breast Recurrence Score, to determine each participant’s recurrence risk. Scores range from zero to 100, with higher scores indicating a greater risk. Patients with a score of 18 or below were deemed to be at low risk and were eligible to skip radiation after breast-conserving surgery, though they still received standard adjuvant hormone therapy for at least five years.

Of the 186 evaluable patients who skipped radiotherapy, all but two (99%) remained free of recurrence at five years, and all participants were still alive, according to Jagsi. The study results were published simultaneously in the Journal of Clinical Oncology.

“These findings indicate that younger postmenopausal patients with Stage I breast cancer who skip radiotherapy after breast-conserving surgery have a very low risk of disease recurrence within five years,” Jagsi said. “However, five years is an early time point for this population, and longer-term follow-up of this study and others will be essential to determine whether this option can be safely offered to women in this age group.”

Nonmetastatic Breast Cancer

A third study aimed to determine whether people with breast cancer that has spread to regional

lymph nodes but not elsewhere in the body can safely skip radiation. Such patients may receive neoadjuvant, or presurgery, chemotherapy, which in some cases completely eradicates cancer from the lymph nodes. But there is no established standard of care for how these patients should be treated after surgery.

The NRG Oncology/NSABP B-51/RTOG 1304 trial (NCT01872975) aimed to determine whether people who received neoadjuvant chemotherapy could safely forgo regional nodal irradiation (RNI), a type of radiotherapy that targets lymph nodes near the breast. People with lymph node–positive breast cancer typically undergo chest wall radiation plus RNI after a mastectomy or whole breast radiation plus RNI after breast-conserving surgery. In contrast, those with lymph node–negative disease are eligible to omit post-surgery RNI.

“There is an active debate on whether these patients should be treated as patients with lymph node–positive disease (which is how they were diagnosed) or as patients with lymph node–negative disease (which is how they present at the time of surgery),” said Eleftherios Mamounas, MD, of the Orlando Health Cancer Institute. “Some patients may prefer to skip RNI to avoid complications associated with the treatment, such as pain, fatigue, lymphedema and its impact on breast reconstruction. Therefore, it is important to evaluate whether this treatment can be safely omitted in this patient population.”

This analysis included 1,556 people with lymph node–positive nonmetastatic breast cancer whose lymph nodes were found to be cancer-free after neoadjuvant chemotherapy. Those who underwent mastectomy received chest wall irradiation, while those who underwent breast-conserving surgery received whole breast irradiation. In addition, they were randomly assigned to receive RNI or not.

Study participants had similar outcomes regardless of whether they received post-surgery RNI, Mamounas reported. Five years after surgery, 92% of patients who skipped RNI and 93% of those who received lymph node radiation did not experience breast cancer recurrence. Overall survival rates were also similar (94% in both groups).

“Our findings suggest that down-staging cancer-positive regional lymph nodes with neoadjuvant chemotherapy can allow some patients to skip adjuvant RNI without adversely affecting oncologic outcomes,” Mamounas said, but follow-up is continuing.

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