Mastectomy and Breast-Conserving Therapy Confer Equivalent Outcomes in Young Women With Early-Stage Breast Cancer

A recent study has shown that mastectomy and breast-conserving therapy (BCT) consisting of lumpectomy and radiotherapy (RT) have equivalent survival outcomes for young women with early-stage breast cancer (Clin Breast Cancer [published online ahead of print April 2, 2015]. doi: 10.1016/j.clbc.2015.03.012).

“Our study, along with prior data, provides convincing evidence that BCT is a safe and effective alternative for patients with early-stage breast cancer, even in patients under the age of 40,” says lead author Jason Ye, MD, chief resident of radiation oncology at Weill Cornell Medical Center in New York City. “This is in contrast to the current trend of an increase in the rate of mastectomies.”

Multiple previous randomized trials have demonstrated that BCT and mastectomy confer equivalent survival outcomes in women with early-stage breast cancer. However, it has been questioned whether these results apply to women aged younger than 40 years because few young women were included in these trials and other studies have shown young women to have a greater risk of having aggressive disease and a higher rate of local recurrence.

Dr. Ye and his colleagues investigated whether the 2 approaches to the treatment of early-stage breast cancer were in fact equivalent in the population of young patients with breast cancer by using data from the National Cancer Institute’s Surveillance, Epidemiology, and End Results (SEER) database. Only patients aged younger than 40 years with stage I or II breast cancer who were treated between 1998 and 2003 were included.

Investigators identified 3249 women who underwent BCT (lumpectomy and external beam RT) and 2627 women who were treated with mastectomy with no RT. These 2 groups were similar with regard to age distribution, follow-up time, race, and the presence of estrogen receptor (ER)-positive disease, but those undergoing BCT were significantly more likely to have a smaller tumor and negative lymph nodes than those undergoing a mastectomy alone. On multivariate analysis, women with stage II disease (compared with stage I) and those with ER-negative status (compared with ER-positive disease) were found to have a higher risk of breast cancer-specific mortality.

The BCT group had a 10-year breast cancer-specific survival (BCSS) rate of 87.7% and an overall survival (OS) rate of 85.9% compared with rates of 85.4% and 83.5%, respectively, in the mastectomy-only group ($P=.009$ and .01, respectively, for BCSS and OS). In an analysis of patients from both treatment groups combined, those aged 35 to 39 years had significantly better 10-year BCSS and OS rates (88% and 84%, respectively) compared with patients aged 20 to 34 years (86% and 82%, respectively). When stratified by stage of disease (I, IIA, and IIB), there were no differences noted with regard to BCSS, OS, or non-BCSS between the 2 treatment groups.

When the patients were stratified by disease stage and age, the only KEY POINTS

- The survival of patients aged younger than 40 years with early-stage breast cancer did not appear to be affected regardless of whether they chose to undergo mastectomy or lumpectomy with RT.
- Patients should be educated that mastectomy does not represent a more effective approach to treating breast cancer compared with BCT.
group among whom a difference in treatment (BCT vs mastectomy without RT) was found to influence survival was those patients aged 20 to 34 years with stage IIB disease. In this group of patients, those undergoing mastectomy only had a significantly inferior 10-year BCSS and OS rate versus the BCT group ($P = .004$ and .002 for BCSS and OS, respectively).

When stratified by ER status, the BCSS rate was significantly better for BCT compared with mastectomy for the ER-negative and ER-positive subgroups. Furthermore, there were no differences in non-BCSS noted among any of the age, stage, and ER subgroups.

Monica Morrow, MD, chief of breast surgery at Memorial Sloan Kettering Cancer Center in New York City, believes the study methodology and findings are sound. “Younger patients have more unfavorable tumor characteristics than older patients, but when comparing like to like, outcomes are the same as shown here and in many prior studies,” Dr. Morrow says. “Rates of local recurrence after BCT have been decreasing steadily and are now equal to rates of local recurrence after mastectomy in the majority of patients. This is not appreciated by many patients, causing them to believe mastectomy is safer. This is not true, except in BRCA mutation carriers who have a high risk of second primary cancers,” she says.

Implications
The results of this study indicated that with a median follow-up of 10 years, patients aged younger than 40 years with early-stage breast cancer have similar or better survival when treated with BCT versus mastectomy with no RT. This finding was maintained for the overall sample and in subgroups divided by ER status, age, and stage of disease.

These findings are of interest because there is a trend in the United States for young women to undergo a mastectomy over BCT. A recent registry study of women with breast cancer who were aged younger than 46 years demonstrated that between 2003 and 2010, treatment with lumpectomy decreased from 61% to 49%, whereas the rate of bilateral mastectomy increased from 9% to 24%, and the unilateral mastectomy rate remained steady (J Am Coll Surg. 2014;219:19-28).

The authors of the current study state that barriers to receiving RT may be a factor driving young women to undergo a mastectomy because it is disruptive to go to daily RT for 6 weeks, as well as the fear of needing repeated surgery. In addition, the authors note that studies have implicated that women perceive mastectomy as being more aggressive therapy (J Clin Oncol. 2005;23:5526-5533). The authors expressed concern about the trend favoring mastectomy in younger women because no survival benefit has been demonstrated and mastectomy has been associated with a poorer quality of life.

Limitations of the current study include the ability to only analyze survival and not the true incidence of disease recurrence. In addition, the SEER database lacks information regarding the systemic treatment administered as well as pathological details such as lymphovascular invasion, which could affect outcomes if found to be different between groups. Another issue not addressed in the current study is whether RT causes any long-term toxicity. There were no differences observed with regard to secondary cancers or cardiac issues between groups, but this study was not designed to examine this question and longer follow-up would be needed.

“Despite limitations, the strength of a SEER study is in its large sample size, which often can overcome some selection bias and differences in baseline characteristics of the patients,” says Dr. Ye. “Most importantly, this study represents the current national outcome and gives a sense of how the patients are actually doing in daily practice outside of rigorously controlled randomized trial settings.”

Prospective studies of BCT versus mastectomy in young women would be ideal, but in the absence of those data, the current study, along with multiple other reports, did not demonstrate better outcomes with mastectomy or BCT.

“The data are robust enough to assure young women equivalence in outcomes between the surgical approaches,” says Dr. Morrow.