Outcomes Improving for Young Women With Breast Cancer

Breast cancer recurrence and death among women who underwent breast-sparing surgery have decreased since the mid-1990s.

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The prognosis for women with breast cancer under age 40 who were treated with breast-conserving surgery and radiation therapy have improved since 1997, according to a recent report in the British Journal of Surgery.

The greatest improvement was seen after 2005, when doctors began classifying breast cancer by genetic subtype, allowing for more effective targeted therapy.

“Prognosis of young women undergoing conservative treatment is constantly improving year by year. These data might be helpful to reduce the number of unnecessary mastectomies in young women, which is still too high,” lead study author Oreste Gentilini, MD, of the European Institute of Oncology in Milan, said in a press release issued by the journal publisher.

Gentilini and his colleagues conducted a study of how breast cancer prognosis has evolved over time among young women. Breast cancer usually strikes older women, and younger women tend to have more aggressive cancer with poorer prognosis.

This retrospective analysis included 1,331 women under age 40 with early-stage invasive breast cancer at a single center in Italy. Two thirds were between 35 and 39 years old, but about 10 percent were under 30. About half had some lymph node involvement. They were treated with breast-conserving surgery and whole-breast radiation therapy followed by various medication regimens.

Breast-conserving surgery aims to remove the cancer and a margin of surrounding normal tissue in the breast rather than the entire breast (mastectomy). A recent meta-analysis including more than 22,000 young breast cancer patients showed that breast-conserving surgery plus radiation therapy offered survival rates similar to those of mastectomy.

The study participants were divided into three groups based on their date of breast cancer diagnosis: 1997 to 2002 (524 patients), 2003 to 2005 (350 patients) and 2006 to 2010 (457 patients).

The women were followed for a median of just over nine years. During this period, the researchers observed 114 cases of local (in the same breast) breast cancer recurrence, 138 deaths from any cause and 289 breast-cancer-related events of any kind (which included local or distant recurrences and breast-cancer-related deaths).

The local recurrence rate for those diagnosed during 1997 to 2002 was 1.42 per 100 person-years, indicating more than one case among 100 women followed for one year. This fell to 0.85 per 100 person-years for women diagnosed during 2003 to 2005 and to 0.48 per 100 person-years for those diagnosed during 2005 to 2010, meaning about one case among 200 women followed for a year.

Looking at all breast-cancer-related events, the risk fell from 3.01 cases per 100 person-years for women diagnosed during 1997 to 2002, to 2.52 and 2.07 cases per 100 person-years, respectively, for those diagnosed during 2003 to 2005 and 2006 to 2010.

The risk of death from any cause decreased by more than half. Deaths dropped from 1.59 per 100 person-years for women diagnosed during 1997 to 2002, to 1.22 per 100 person-years for those diagnosed during 2003 to 2005 and 0.64 per 100 person-years for those diagnosed during 2006 to 2010.

Each additional passing year was associated with a decreasing risk of local cancer recurrence (a 7 percent drop), breast-cancer-related events and death from any cause in a multivariate analysis that took multiple factors into account. Larger tumor size and more lymph node involvement were also significantly associated with a higher risk of breast-cancer-related events and death.

The researchers noted that the most dramatic improvement was seen after 2005, when the classification of breast cancer by genetic subtype and the use of targeted therapy were implemented in routine clinical practice. This kind of treatment is often more effective and better tolerated than traditional chemotherapy, which kills not only cancer cells but also rapidly dividing healthy cells throughout the body.

Breast cancer is classified according to the kind of receptors it expresses. A majority of breast tumors carry hormone receptors for estrogen or progesterone, and treatment usually includes hormone-blocking medications. Other tumors express a receptor called HER2 (human epidermal growth factor receptor 2). This type of cancer can be treated with drugs that target HER2, such as Herceptin (trastuzumab). Triple-negative breast cancer doesn't express any of these receptors and is more difficult to treat.

Over time, the proportion of women treated with hormone therapy rose while the proportion treated with traditional chemotherapy fell. Starting around 2003, there was a sharp increase in the proportion of patients receiving Herceptin.

Among women with HER2-positive cancer, the risk of breast-cancer-related events and death started to decline only after the introduction of Herceptin. However, outcomes also improved over time among women who were not HER2-positive, suggesting that classification of breast cancer

subtypes led to more appropriate tailored treatment for all patients.

Based on these findings, the study authors concluded, “In the past two decades, both local control and overall prognosis have improved significantly in young women” with breast cancer who undergo breast-conserving surgery.

They recommended that “whenever technically feasible, and after thorough preoperative evaluation,” breast-conserving surgery should be the “first option” for young women with breast cancer who do not have increased genetic risk for aggressive disease.

To read the study abstract, click here.

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