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Shorter Course of Radiation Effective and Safe For Some Women with Early-Stage Breast Cancer

Giving radiation therapy in fewer but larger doses may be an alternative to standard radiation therapy for some women with early-stage breast cancer. A trial testing this approach, called hypofractionated radiation therapy, has found that the regimen tested did not increase long-term toxicities and resulted in rates of survival and local recurrence similar to those seen with standard radiation therapy. The study ¹, which was published in the February 11 New England Journal of Medicine, had the longest follow-up results of any study to date of hypofractionated radiation therapy for breast cancer.

Breast-conserving surgery (BCS) plus adjuvant radiation therapy has been firmly established as a safe alternative to full mastectomy for most women with early-stage breast cancer. The radiation therapy part of that regimen is vital, as long-term data have shown ² that it greatly reduces the risk of tumor recurrence. However, almost a third of women in North America do not get radiation therapy after BCS.

The reasons for this lack of adherence to treatment standards are numerous and complicated, but they include the fact that a standard course of radiation therapy requires 33 treatments spread out over 6 weeks, a significant added burden for many patients who have already undergone surgery and may be starting hormone therapy or chemotherapy. Because hypofractionated radiation therapy must be less burdensome than standard radiation therapy, some oncologists believe the finding could have an immediate impact on breast cancer care in the United States.

Renewing an Old Idea

Starting in 1993, researchers coordinated by the Ontario Clinical Oncology Group randomly assigned 1,234 women with early-stage breast cancer that had not spread to nearby lymph nodes to receive either the international standard radiation dose - 50 Gy of whole-breast radiation given in 25 fractions over 5 weeks - or a hypofractionated radiation schedule - 42.5 Gy of whole-breast radiation given in 16 fractions over 3 weeks. Patients received hormone therapy, chemotherapy or both as deemed necessary by their doctors.

Ten years after treatment, the incidence of local recurrence (recurrence in the same breast) was 7.5 percent in the standard radiation therapy group and 7.4 percent in the hypofractionated radiation group. The probability of survival at 10 years was also virtually identical: 84.4 percent in the standard radiation therapy group and 84.6 percent in the hypofractionated group.

Careful Application Required

As radiation oncologists look to incorporate these results into their practice, Dr. Bhadrasain Vikram, chief of the Clinical Radiation Oncology Branch in NCI's Division of Cancer Treatment and Diagnosis ³, cautioned that "it is important to understand that these

results cannot be extrapolated beyond the women who were eligible for this study - that is, women who had negative surgical margins and did not need radiation to their axillary lymph nodes."

But for whole-breast radiation in women who fit the study criteria, "it's very confirmatory data, showing this works," said Dr. Julia White, chair of the Radiation Therapy Oncology Group 4 breast committee and professor of radiation oncology at the Medical College of Wisconsin. "I think this will influence practice in the United States, in certain patients, and I think the women who would benefit the most are those for whom (a standard course of radiation therapy) is the most burdensome. Those are the women traveling a long way to get radiation and who might choose mastectomy." (Sharon Reynolds, National Cancer Institute)

1 <http://www.ncbi.nlm.nih.gov/pubmed/20147717>

2 <http://www.cancer.gov/clinicaltrials/results/postsurgical-radiation0106>

3 <http://www.dctd.cancer.gov>

4 <http://www.rtog.org>

Common Osteoporosis Drugs Are Associated With a Decrease in Risk of Breast Cancer

Women who take some types of bone-building drugs used to prevent and treat osteoporosis may be at lower risk of breast cancer. A study found that women who used bisphosphonate drugs, such as Fosamax, Boniva and Zomita, for more than two years had a nearly 40 percent reduction in risk as compared to those who did not. The National Cancer Institute funded the study, which was conducted in collaboration with researchers at the University of Wisconsin Carbone Comprehensive Cancer Center.

This large study provides new evidence that the use of bisphosphonates is associated with a potentially important reduction in breast cancer risk. The protective effect was observed only among women who were not obese. "Obese women may have elevated estrogen levels, so underlying hormones may influence the ability of bisphosphonates to reduce breast cancer risk."

The study involved nearly 6,000 Wisconsin women, aged 20 to 69. Half had been diagnosed with invasive breast cancer and for comparison purposes, half had not. The women were interviewed about their bone health, their history of fractures, whether they had been diagnosed with osteoporosis and their history of bisphosphonate use.

Breast cancer risk factors such as first-degree family history of the disease, age at first birth, postmenopausal hormone use and body mass index were accounted for in the analysis. "Because we were able to account for important cofounders, these findings may reflect real benefits due to the anti-tumor mechanisms of these medications," the author wrote.

(Fred Hutchinson Cancer Research Center, British Journal of Cancer, BJC)

