

# Postmastectomy Radiation May Not Be Needed

## VITALS

**Major Finding:** When the researchers examined the overall locoregional recurrence related to pathologic lymph node status, patients with one to three positive nodes had a 10-year locoregional recurrence rate of 4.3%, compared with 2.1% in patients with negative nodes, a significant difference.

**Data Source:** A study of 1,019 women treated at M.D. Anderson Cancer Center between 1997 and 2002.

**Disclosures:** None was reported.

BY DOUG BRUNK

ST. LOUIS — Locoregional recurrence rates in patients with T1 and T2 breast cancer treated with surgery and adjuvant systemic therapies stand at less than 3%, a rate far lower than the rates of more than 15% reported some decades ago, according to results of a single-center retrospective study.

The findings call into question the routine use of postmastectomy radiotherapy in this population, a practice based on landmark studies completed more than 20 years ago, Dr. Ranjna Sharma said at a symposium sponsored by the Society of Surgical Oncology.

In turn, those studies influenced 2007 guidelines from the National Comprehensive Cancer Network, which “suggested strong consideration of the use of postmastectomy radiation in patients with one to three positive axillary nodes,” said Dr. Sharma, a fellow in surgical oncology at M.D. Anderson Cancer Center, Houston.

“This has resulted in a shift in clinical practice, with more patients receiving radiotherapy and many centers beginning to deny immediate breast reconstruction in patients with early-stage disease,” she said.

Previously reported high rates of locoregional recurrence after mastectomy “may have been due to patients presenting with much more advanced disease, without routine margin control, without adequate axillary surgery, and without modern-day systemic therapies. Therefore, our hypothesis is that patients treated in the present era will have much lower rates of local-regional recurrence,” Dr. Sharma said.

She and her associates performed a retrospective study to determine the risk of locoregional recurrence (LRR) in 1,019 patients with T1 and T2 tumors with 0 and 1-3 positive lymph nodes who had a mastectomy at M.D. Anderson between 1997 and 2002. None of the patients received preoperative chemotherapy or postoperative radiotherapy.

The study’s lead author was Dr. Henry M. Kuerer, a professor in the surgical oncology department at M.D. Anderson. The researchers used the Kaplan-Meier method and the Cox proportional hazards regression model for analysis. The primary outcome was LRR, calculated from the date of initial surgery.

Dr. Sharma reported findings from a

median follow-up of 7.5 years. The median age of study participants was 54 years, and the median number of lymph nodes removed during axillary lymph node dissection was 16. About one-third of patients (32%) received a sentinel lymph node biopsy as their initial nodal staging procedure, and 77% received chemotherapy and/or hormonal therapy. “Patients in the series had very early breast cancer, with 79% having T1 tumors,” Dr. Sharma said.

More than one-quarter of patients (26%) had nodal metastasis, “with the majority having only one node with metastases. Only 2% of the patients in the series had three nodes with metastases,” she reported.

The median time to LRR was 3.8 years.

“There were a total of only 23 local-regional recurrences in this series: 48%

**The findings call into question the routine use of postmastectomy radiotherapy in this population, a practice based on landmark studies completed more than 20 years ago.**

were isolated and 13% occurred before distant metastases development,” she said.

About 40% of LRRs were seen concurrently or after the development of distant metastases.

Slightly more than half (52%) involved the chest wall, and 48% involved the regional nodes alone.

Univariate analysis revealed that LRR was associated with age younger than 40 years, tumor size, positive nodes, higher-stage estrogen receptor-negative tumors, and use of systemic adjuvant therapy.

In a multivariate analysis, the only independent predictor of LRR in this series was age younger than 40 years. The 10-year rate of LRR was 11.1% in patients younger than 40 years and less than 3% for patients older than age 40.

When the researchers examined the overall LRR rate related to pathologic lymph node status, they found that patients with one to three positive nodes had a 10-year LRR rate of 4.3%, compared with 2.1% in patients with negative nodes, a significant difference. However, Dr. Sharma noted, “this rate of locoregional recurrence is still substantially lower than the previously reported rates in series of patients who were treated several decades ago.”

The researchers then examined the risk of LRR in patients with one positive node.

“Interestingly, the 10-year rate of locoregional recurrence of 3.3% was not significantly different from the 2.1% risk



Dr. Ranjna Sharma (left) and Dr. Henry M. Kuerer found low locoregional recurrence rates in T1, T2 breast cancer patients treated with surgery, adjuvants.

of locoregional recurrence in patients with node-negative disease,” Dr. Sharma said. For patients with two positive nodes, the 10-year LRR rate was 7.9%, which was significantly higher than the 2.1% rate of patients with node-negative disease.

Dr. Sharma said that no conclusions could be drawn about the risk of LRR in patients with three positive nodes because “this was a very rare event,” with only 21 patients meeting the criteria.

The 10-year LRR rate among patients with T2 tumors and lymph node metastases was 9.7%, which was significantly higher than the rate of less than 3% for their counterparts with T1 tumors with and without nodal metastases and those with T2 tumors and no nodal metastases.

“Although the 9.7% rate of locoregional recurrence is significantly higher compared with the other groups of patients, it is important to note that at this level of risk, experts have estimated that approximately 100 women would need

to be treated to potentially obtain a survival benefit in one or two patients,” Dr. Sharma said.

She also reported that 25 contralateral breast cancers developed during the study period.

Although the median time to occurrence of contralateral breast cancer was longer than the time to development of LRR (a median of 7.2 years vs. 3.8 years, respectively), there was no significant difference between the rates of a locoregional or a contralateral event between the two groups (5.5% vs. 2.7%, respectively).

This was true for node-negative patients and for patients with one to three positive lymph nodes.

Dr. Sharma acknowledged the potential for bias in the study, including the fact that patients who received neoadjuvant chemotherapy were excluded.

“Those patients likely presented with more advanced disease. That might have altered results if those patients were included.”

## Prospective Trial Is Needed

### MY TAKE

The findings reported at the Society of Surgical Oncology are provocative, and may cause a shift away from a trend to recommend postmastectomy radiation to all women with lymph node-positive breast cancer—even those with one to three involved axillary nodes. Although the report is based on a large number of subjects, it is limited by its retrospective nature and the few local and regional recurrences that did develop.

Even with those limitations, the study finds that certain subsets of patients appear to have a risk of local recurrence (in the absence of postoperative radiation therapy or primary chemotherapy) that is not

unlike the risk in patients with T1 and axillary node-negative disease.

This suggests that the use of postmastectomy radiation therapy may be better directed toward patients with larger primary tumors, those with more than one involved axillary node, and those younger than 40 years at diagnosis. To confirm these findings, a prospective trial of postmastectomy radiation therapy, or not, will be required.



DR. WILLIAM J. GRADISHAR is a professor of medicine at Northwestern University and director of Breast Medical Oncology at the Robert H. Lurie Comprehensive Cancer Center in Chicago.