

Web-Based Tool Helps Predict Breast Ca Return

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PHILADELPHIA — A new Web-based tool may accurately predict the 10-year risk of local breast cancer recurrence in women who have had breast-conserving surgery, Dr. Mona Sanghani said at the annual meeting of the American Society for Therapeutic Radiology and Oncology.

The tool, named IBTR! for "Ipsilateral Breast Tumor Recurrence" calculates an evidence-based estimate of the 10-year ipsilateral breast tumor recurrence risk with and without the addition of whole breast radiation therapy. Online users at <http://tufts-nemc.org/ibtr> are asked to enter patient-specific data, including patient age, tumor size, tumor grade, margin status, presence of lymphovascular invasion, and use of chemotherapy and tamoxifen.

The model assumes that all pathologic specimens have been microscopically as-

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essed with hematoxylin and eosin staining of serial sections, and it is presumed that patients who are node positive (with the exception of micrometastatic lymph node disease) will receive chemotherapy. The tool indicates

that the program is not intended for use in the postmastectomy setting, and is not meant to address patients with multicentric disease or with in situ-only disease.

The program is intended for use by health professionals to guide medical decision making regarding the use of radiation therapy in patients who have undergone breast-conserving surgery and appropriate axillary evaluation.

According to Dr. Sanghani, lead author of the report and an oncology resident at Tufts-New England Medical Center in Boston, a large database was not available to calculate local recurrence estimates across all the prognostic factors, so the model was constructed using published studies of breast-conserving surgery, both with and without radiation therapy.

The first step was to establish the baseline local recurrence (LR) rates in the overall breast-conserving therapy population. This was done by reviewing 11 randomized trials and constructing a random effects model, which yielded an LR rate of 7% in patients receiving breast-conserving surgery plus radiotherapy, and an LR of 24% for patients receiving breast-conserving surgery alone. "This was with an average data follow-up of 9-10 years," Dr. Sanghani said.

The second step was to identify the important prognostic factors for local recurrence. Although the researchers had preferred to adhere to data from randomized clinical trials comparing breast-conserving therapy (BCT) alone versus BCT plus radiotherapy, they did not sufficiently address multiple risk factors (for example, margin

status and lymphovascular invasion). So they included published single-institution data when necessary to compensate for gaps in the data. After this, they computed the approximate best estimate relative risk (RR) ratio for each prognostic factor. "After all these estimates were made, in an iterative fashion, we tested these RR ratios in the model against variations in all the other risk factors to ensure that the output for the model was clinically sound," Dr. Sanghani said. "The model is constructed so that the

RR for each prognostic factor independently modulates the baseline LR rate of 7% and 24%."

Risk factors included in the model are patient age, margin status, lymphovascular invasion, use of tamoxifen, use of chemotherapy, tumor size, and tumor grade. Factors which were excluded because they did not have a sufficiently strong effect on local recurrence rates in the trials were lymph node status, estrogen- and progesterone-receptor status,

presence of an extensive intraductal component, and histology.

"Our tool provides physicians with information regarding the risk of breast cancer returning in the same breast for any individual patient, which can then help them evaluate the potential benefit of additional treatments needed to cure the cancer, including radiation therapy," said Dr. Sanghani. She cautioned that the tool needs to be validated by independent clinical data before it is widely used. ■

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