Emerging trends in radiation therapy for women over 70 with early stage breast cancer

June 2 2011

Patterns of radiation usage in breast conserving therapy for women 70 years and older with stage I breast cancer are changing: more women are opting for radioactive implants and those with estrogen positive tumors are opting out of radiation therapy, according to an abstract being presented at the American Society of Clinical Oncology annual meeting in Chicago by Thomas Jefferson University Hospital researchers on Saturday, June 4. The abstract (#6094) received an ASCO Merit Award.

In another abstract (#1037), the researchers report that women with estrogen negative tumors were 91 percent more likely to die from breast cancer if they did not receive radiation therapy after a lumpectomy.

Given the relatively recent developments in radiation therapy (i.e., an increased use of brachytherapy and external beams) and data supporting the idea that radiation isn't necessary for women with estrogen positive tumors, researchers wanted to see how actual practice patterns were impacted.

Researchers found that there was a modest increase in the percentage of women with estrogen receptor positive cancers who did not get radiation therapy starting around 2004, and increasing use of radioactive implants, such the MammoSite, Contura, Savi or similar devices, since 2002.

There was also a corresponding drop in women who received external beam radiation, according to Xinglei Shen, M.D., a resident in the Department of Radiation Oncology at Thomas Jefferson University.
Hospital. "Among women with estrogen receptor negative cancers, there was not the same increase in frequency of women who did not get radiation, but there was an increased use of radioactive implants," he said.

The consequence of those findings was determining what impact omitting radiation has on survival. While there is data that the omission of radiation therapy in women with estrogen receptor positive tumors who receive endocrine therapy, such as Tamoxifen, is not associated with a survival difference, limited data exists for estrogen receptor negative tumors in older women who undergo breast conservation.

"From the randomized trial data, we know that women with estrogen receptor positive stage I breast cancer have no detriment to survival by avoiding radiation, as long as they took Tamoxifen," Dr. Shen said. "However, it is unknown if this would be the case in women with estrogen receptor negative cancer."

Dr. Shen worked with Jefferson Medical College student Andrzej Wojcieszynski to examine survival in these women, and found that they were 91 percent more likely to die from breast cancer if they did not receive radiation therapy after a lumpectomy. (Abstract #1037).

"We have to be cautious when interpreting survival data from the SEER because of potential confounding variables, such as the health of the patients and use of chemotherapy," Dr. Shen said. "However, these data do raise hypotheses for future study."

"Our conclusion is that adjuvant radiation therapy after lumpectomy reduces breast cancer mortality in women over 70 with stage I, estrogen receptor negative breast cancers, and that radiation is currently underutilized in these women," said Wojcieszynski.