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Cosmetic changes are equivalent after WBI vs PBI for women with early stage breast cancer

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Results from the Quality of Life substudy of the NRG Oncology clinical trial NSABP B-39/RTOG 0413 indicate that women rated post-lumpectomy partial breast irradiation (PBI) as equivalent to whole breast irradiation (WBI) in terms of cosmetic outcomes and satisfaction from baseline to three years following radiotherapy treatment. Treating physicians from the accruing site rated PBI as inferior to WBI while physicians who performed central review of digital photos blinded to treatment arm and time-point rated cosmetic outcome from PBI equivalent to WBI. These results were presented at the annual meeting of the American Society for Radiation Oncology (ASTRO) during the Plenary Session.

The initial results of this phase III trial were reported at the San Antonio Breast Cancer Symposium in 2018 and indicated that, although outcomes were close, PBI was not considered equivalent to WBI because the hazard ratio between treatment arms fell short of meeting statistical equivalence at 10 years following treatment. Due to the small differences in ipsilateral breast tumor recurrence (IBTR) rates of less than 1% between trial arms, researchers determined that PBI treatment could still be beneficial for a portion of breast cancer patients undergoing lumpectomy for breast conservation.

"It is crucial that we provide breast cancer patients with the most up-to-date information possible as they are facing decisions about radiation

treatment options for breast-conservation. Partial breast irradiation delivered over several days has the potential to reduce the time commitment, burden and healthcare costs associated with WBI. For those breast cancer patients that PBI and WBI result in similar cancer control, the appearance of the breast after treatment may be the key factor in selecting the radiation method they will pursue after lumpectomy. This affects thousands of breast cancer patients annually," stated Julia R. White, MD, of the Ohio State University Comprehensive Cancer Center and the lead author of the NRG-NSABP B-39/RTOG 0413 manuscript. "This substudy of NSABP B-39/RTOG 0413 was intended to address these questions regarding cosmetic outcome from PBI and WBI to inform patients and providers who are facing decisions about which radiotherapy method to choose following breast conserving surgery"

NRG Oncology's Quality of Life substudy of NSABP B-39/RTOG 0413 was designed to determine patient reported outcomes, and the focus this analysis is the cosmetic outcome between PBI and WBI treatments. Women were analyzed separately depending on whether they received chemotherapy or if they did not receive chemotherapy as a part of their treatment; with the primary focus of this presentation on the outcome of chemotherapy use groups combined. Of the 900 women that were analyzed from this trial, 420 of the women received chemotherapy and 480 women did not receive chemotherapy. Cosmetic outcome was measured by patient-rated global cosmetic score (GCS) and satisfaction, physician-rated GCS, and digital photos of the breasts, all collected from baseline through 1 year, and then 3 years following radiotherapy. The digital photos documenting cosmetic outcome at each time point were scored for GCS by central physician review blinded to treatment, breast treated, chemotherapy use, and time points.

The change in the Global Cosmetic Score over time in the PBI and WBI groups was examined using longitudinal mixed models controlling for

chemo use (yes vs no), race (white vs. not white), age (continuous), axillary dissection (yes vs no), and the treatment by time point interaction. The patient-rated GCS, in the entire group, PBI was equivalent to WBI in cosmetic outcomes. From the Physicians at the accruing site rating GCS, PBI was worse than WBI at 36 months but change in GCS over time were equivalent. Cosmetic outcomes based on GCS rated by central review of digital photos by physicians blinded to treatment arm and time point indicated that PBI and WBI were equivalent.

More information: White JR et al. (2019, September) Cosmetic Outcome from Post Lumpectomy Whole Breast Irradiation (WBI) Versus Partial Breast Irradiation (PBI) on the NRG Oncology NSABP B-39/RTOG 0413 Phase III Clinical Trial. Paper presented at the annual meeting of the American Society for Radiation Oncology, Chicago, IL.

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