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Analysis shows increased use of HF-WBI for patients with early-stage breast cancer

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The use of hypofractionated whole-breast irradiation (HF-WBI) for patients with early-stage breast cancer increased 17.4 percent from 2004 to 2011, and patients are more likely to receive HF-WBI compared to conventionally fractionated whole-breast irradiation (CF-WBI) when they are treated at an academic center or live ≥50 miles away from a cancer center, according to a study published in the December 1, 2014 issue of the *International Journal of Radiation Oncology • Biology • Physics* (*Red Journal*), the official scientific journal of the American Society for Radiation Oncology (ASTRO).

An analysis of randomized trials demonstrated that patients with early-stage breast cancer who are treated with breast-conserving surgery and adjuvant whole-breast irradiation have improved survival and a lower risk of tumor recurrence compared to patients who are not treated with radiation therapy. Patients are commonly treated with CF-WBI; however, several recent randomized trials have confirmed that patients treated with HF-WBI have similar disease-free and overall survival rates as those treated with CF-WBI. CF-WBI delivers a total dose of 45-50 Gy in 25-28 daily fractions of 1.8-2.0 Gy over five to six weeks, while HF-WBI uses a shorter treatment course and a lower total dose and number of fractions, delivering a total dose of 39-42.5 Gy in 13-16 daily fractions of 2.5-3.2 Gy over three to five weeks.

This study, "Adoption of Hypofractionated Whole-Breast Irradiation for Early-Stage Breast Cancer: A National Cancer Data Base Analysis," is a retrospective review of 113,267 early-stage breast cancer patients in the

National Cancer Data Base (NCDB) from 2004 to 2011 who were treated with radiation therapy and were eligible to receive HF-WBI, and examines the use of HF-WBI compared to CF-WBI and the factors, including facility type and patient's distance from the radiation treatment center, that influenced which type of WBI the patient received.

The NCDB, a joint program of the American College of Surgeons' Commission on Cancer and the American Cancer Society established in 1989, is a nationwide, facility-based data set that contains retrospective data on 70 percent of all newly diagnosed cancers in the United States.

The study identified data from early-stage breast cancer patients included in the NDCB from 2004 to 2011 who received adjuvant WBI and who were eligible to receive HF-WBI according to current guidelines and randomized trials. Eligible patients were age 50 or older at the time of diagnosis; had a first and only diagnosis of breast cancer; had pathologic stage T1-2 N0 breast cancer, based on the American Joint Committee on Cancer TNM staging classification; were treated with breast-conserving surgery; and did not receive chemotherapy. In this study, HF-WBI was defined as a fraction dose of ≥2.2 Gy and ≤4.0 Gy, and CF-WBI was defined was a fraction dose >1.5 Gy and