

37-Accelerated partial breast irradiation using 3D conformal radiation therapy versus whole breast irradiation in patients with early breast cancer.

Authors: M. Elebrashi, A. Gaballah, N. Gobran, K. Abdelhakeem, M. Moawad, Clinical Oncology and Nuclear Medicine Faculty of medicine, Ain Shams University

Abstract

Purpose/Objective(s):

Accelerated partial breast irradiation (APBI) is an approach that treats only the lumpectomy bed plus 1-2 cm margin rather than the whole breast. By increasing the radiation fraction size and decreasing the target volume. APBI may be as effective as whole breast treatment, allowing shorter treatment courses and reducing side effects. Comparing APBI vs whole breast irradiation (WBI) helps us to evaluate the efficacy, toxicity and cosmetic outcome after breast conserving treatment (BCT) with APBI using 3D conformal external beam radiation therapy (EBRT).

Materials/Methods:

This is a phase III prospective randomized clinical trial including 62 women with early stage breast cancer, 31 of them received APBI using EBRT with a regimen of 4 Gy/ fraction, BID, 9 fractions /one week to a total dose of 36 Gy while the other 31 received conventional WBI during the period between August 2015 to December 2016, with a median follow up period of 18 months The patients' age ranged between 45 to 83 years with mean age 65.59 ± 8.01 years. 59.6% of our cases (37 patients) of all the study cases had left sided breast cancer, while 21 patients (40.4%) had right sided breast cancer. Most of our cases 72.5 % of all the cases were Invasive ductal carcinoma, most of the patients (67.7%) were GII, with a median tumor size of 0.90 (0.1-2.70), only 4.8% were classified as T2. Data were analyzed with SPSS version 21. The normality of data was first tested with one-sample Kolmogorov-Smirnov test.

Results:

The median follow up period for all patients was of 18 months, our results showed that there was no significant difference between the two study groups as regards cosmetic outcome, excellent cosmetic outcome was found in 7 patients in each group, good outcome in 17 in the APBI group vs 19 patients in the whole breast irradiation group, so we had 84% with good to excellent cosmetic outcome in the APBI group, fair in 4 vs 6 patients, while poor cosmetic outcome in 1 patient in each group, only 3.2% of the patients had grade 3 toxicities. There was no significant difference between the two study groups regarding local recurrence. There was a significant difference in the heart mean dose between the two groups, it was much less in the APBI group ($P=0.008$). Other factors as age, tumor pathology and type of systemic treatment were not significant

Conclusion:

These data are consistent with the fact that breast cancer and the dose-limiting normal tissues respond similarly to change in radiotherapy fraction size. The study regimen of 36 Gy in 9 fractions was similar to the control regimen of 50 Gy in 25 fractions in terms of Loco-regional tumor control, skin toxicities, breast cosmetic outcome.