Cosmesis Outcomes After Pre-Operative Radiation Boost for Early Breast Cancer

S. Mamidanna, M. Patel, K. Patel, R. Noziere, N. Ohri, A. Grann, D. Toppmeyer, S. Kumar, B. Haffty
Rutgers Cancer Institute of New Jersey, RWJ Barnabas Health

Introduction

Breast cosmesis is an important outcome for women after breast conservation surgery (BCS). Conventionally, radiation therapy (RT) is given after BCS, often includes a boost to the lumpectomy cavity. However, recent phase 2 trial, patients received a preoperative RT boost of 13.32 Gy in 4 fractions, followed by BCS & postop whole breast RT 36.63 Gy in 11 fractions. Hypothesis: There may be an improvement in patient- and physician-reported cosmesis when the pre-op boost is given.

Methods and Materials

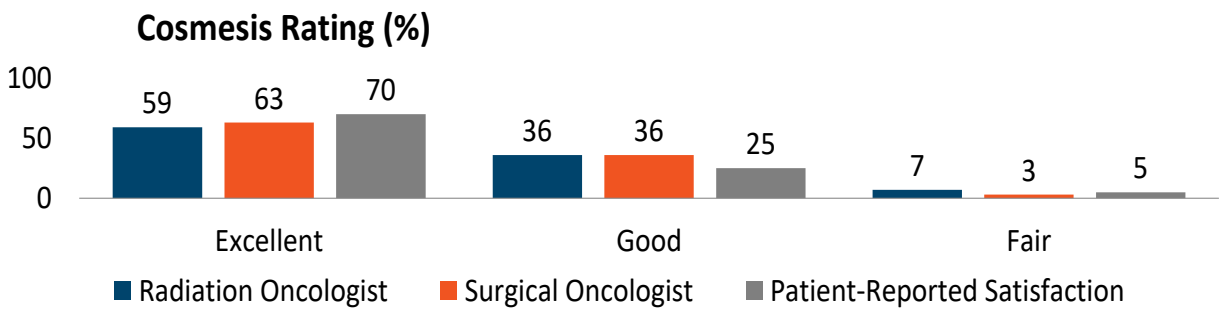
Single institutional cross-sectional study evaluating patients enrolled in the preoperative boost and available for post-treatment analysis. Standardized photographs of patients taken after completion of adjuvant whole breast RT & cosmesis evaluated using standardized scoring systems. Physician-rated cosmesis assessment performed by a radiation oncologist and surgical oncologist using 4-point Harvard cosmesis scale. Patient-reported outcomes were captured by the Breast Cancer Treatment Outcome Scale (BCTOS) questionnaire at 6-month intervals.

Results

Photographs of 27 patients taken and assessed.

- Median age 68 years
- 22% of the patients had ductal carcinoma in situ (DCIS) and median tumor size of 6.5 mm
- 78% had invasive pathology and median tumor size of 9.5 mm
- Median time from adjuvant RT completion to photographic assessment was 2.5 years
- 14% of patients had bilateral oncoplastic reduction at the time of BCS

Perceived differences by patients between the affected breast and contralateral breast were minimal at 1 year (median [IQR] BCTOS score 22 [20-26], with lowest possible score of 17,highest score of 68, and higher scores indicating greater differences.
Inter-rater agreement between radiation and surgical oncologists for cosmetic outcome was assessed using weighted Cohen's kappa. The kappa value was 0.691 (95% CI: 0.42-0.96), indicating substantial agreement.
Rating of cosmesis post-RT by radiation oncologist was: 59% excellent, 36% good, and 7% fair, and surgical oncologist assessment was: 63% excellent, 36% good, and 3% fair. None of the assessed patients had poor cosmetic outcomes



Conclusion

In this prospective phase 2 clinical trial, administering the radiation boost pre-operatively, analysis of physician and patient-reported outcomes demonstrated an overall positive experience and acceptable cosmesis for trial participants.
This may facilitate in the decision-making process for patients who have early breast cancer suitable for breast-conserving surgery and are considering various treatment options with RT.
Further randomized trials will be required to compare the long-term effectiveness of pre-operative compared to post-operative boost approach.

References

Yehia ZA, Sherwani Z, Chakraborty M, Ohri N, Grann A, Eladoumikdachi F, Kowzun M, Kumar S, Potdevin L, Blackwood M, Toppmeyer D, Haffty BG. First Results of the Primary Outcome of a Phase 2 Prospective Clinical Trial to Assess the Feasibility of Preoperative Radiation Boost in Patients With Breast Cancer. Int J Radiat Oncol Biol Phys. 2025 Feb 1;121(2):333-340. doi: 10.1016/j.ijrobp.2024.08.043. Epub 2024 Sep 4.

Contact
Mihir Patel
Rutgers Cancer Institute of New Jersey
Email: m.patel0407@rutgers.edu
Phone: (732) 964-8902

© Poster Template by Genigraphics® 1.800.790.4001 www.genigraphics.com