

10-year follow-up showed benefit of adding radiotherapy to local excision for ductal carcinoma in situ

Bijker N, Meijnen P, Peterse JL, et al. Breast-conserving treatment with or without radiotherapy in ductal carcinoma-in-situ: ten-year results of European Organisation for Research and Treatment of Cancer randomized phase III trial 10853—a study by the EORTC Breast Cancer Cooperative Group and EORTC Radiotherapy Group. *J Clin Oncol.* 2006;24:3381-7.

Clinical impact ratings: Oncology ★★★★★☆

QUESTION

In patients with ductal carcinoma in situ (DCIS), is local excision plus radiotherapy better than local excision alone?

METHODS

Design: Randomized controlled trial (European Organisation for Research and Treatment of Cancer [EORTC] 10853 study).

Allocation: Concealed.*

Blinding: Unblinded.*

Follow-up period: Median 10.5 years.

Setting: {46 centers in 13 countries.}†

Patients: 1010 women (mean age 53 y) with DCIS of the breast. Patients with lesions up to 5 cm in diameter and no evidence of invasion or Paget disease were eligible. {Exclusion criteria were age > 70 years, pregnancy, past or concomitant malignant disease (except basal-cell carcinoma of the skin or cone-biopsied cervical carcinoma in situ), World Health Organization performance status ≥

2, or mental condition or social situation precluding long-term follow-up.}†

Intervention: Radiotherapy (50 Gy in 25 fractions to the whole breast) ($n = 507$) or no further treatment ($n = 503$) after complete local excision.

Outcomes: Invasive local recurrence and DCIS local recurrence. Secondary outcomes were metastasis, death, and contralateral breast cancer.

Patient follow-up: 85% (intention-to-treat analysis).

MAIN RESULTS

Local recurrence-free survival at 10 years was higher in patients who received local excision plus radiotherapy than in those who received local excision alone (85% vs 74%; hazard ratio [HR] 0.53, 95% CI 0.40 to 0.70). Radiotherapy conferred similar benefits on freedom from invasive recurrences (92% vs 87%; HR 0.58, CI 0.39 to 0.86) and from DCIS recurrences (93% vs 86%; HR 0.52,

CI 0.34 to 0.77). The addition of radiotherapy did not affect metastasis-free survival (96% vs 96%; HR 1.14, CI 0.63 to 2.08), overall survival (95% vs 95%; HR 1.18, CI 0.70 to 1.96), or freedom from contralateral breast cancer (92% vs 96%; HR 1.41, CI 0.87 to 2.30).

CONCLUSION

In patients with ductal carcinoma in situ, radiotherapy after complete local excision reduced the risk for local recurrence over 10 years of follow-up.

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*See Glossary.

†Julien JP, Bijker N, Fentiman IS, et al. *Lancet.* 2000;355:528-33.

COMMENTARY

The aim of surgical treatment for DCIS, a precursor to invasive ductal carcinoma, is to prevent local recurrences, particularly invasive ones, by ensuring the tumor's complete excision with the best possible cosmetic outcome. Mastectomy and breast-conserving therapy for DCIS have not been compared in randomized trials. However, their equivalent effects on survival and the successful application of breast-conserving therapy for invasive cancer have led to a decline in the use of mastectomy for DCIS.

After local excision for DCIS, women are at risk for local recurrences, about half of which are invasive. 3 large randomized trials have compared whole breast radiotherapy with observation after local excision for DCIS: the EORTC 10853 trial, the National Surgical Adjuvant Breast and Bowel Project (NSABP) B-17 trial (1), and the United Kingdom Coordinating Committee on Cancer Research (UKCCCR) trial (2). Radiotherapy consistently reduced both invasive and DCIS local recurrence rates by 40% to 60%. These results underpin recommendations that whole breast radiotherapy should be the standard of care after local excision for DCIS.

An unresolved question is whether this applies equally to all women with DCIS. Retrospective data suggest that radiotherapy may not substantially improve recurrence rates after complete local excision in selected women with small, low-grade DCISs. The omission of radio-

therapy in this selected group of women is being investigated in ongoing randomized trials.

In the NSABP B-24 trial, the addition of tamoxifen to radiotherapy further improved the local recurrence rates after local excision (3). The benefit was confined to estrogen receptor-positive disease. However, this finding was not confirmed in the UKCCCR trial (2). Ongoing randomized trials are evaluating the effects of tamoxifen and newer endocrine agents, the aromatase inhibitors, in DCIS.

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References

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