

Long-lasting benefit of radiotherapy for localized breast cancer confirmed in study

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A study confirms the long-lasting benefit of radiotherapy for localized breast cancer, and reports importance of tamoxifen for reducing recurrence.

Women with the most common type of non-invasive [breast cancer](#) known as ductal [carcinoma](#) in situ (DCIS) are significantly less likely to develop invasive disease if they are given radiotherapy after surgery, and the effect is long lasting, according to the long-term results of the UK, Australia, and New Zealand (UK/ANZ) DCIS trial, published Online First in [The Lancet Oncology](#) on Wednesday 8 December. Moreover, treatment with tamoxifen significantly reduces the likelihood of local cancer returning after surgery.

DCIS refers to cancer in the milk ducts of the breast, and now represents around 20 - 25 per cent of screen detected breast cancers. The introduction of the UK National Health Service Breast Screening Program has led to a substantial increase in the diagnosis of DCIS over the past two decades. Standard treatments after breast-conserving surgery include radiotherapy and hormone therapy. Survival following treatment is about 98 per cent, but the risk of local recurrence and a new cancer in the opposite breast is high.

The UK/ANZ DCIS trial was designed to establish whether additional treatment with tamoxifen, or radiotherapy, or both tamoxifen and radiotherapy could reduce the likelihood of cancer returning after surgery to completely remove DCIS. Between May 1990 and August

1998, 1701 women from the UK, Australia, and New Zealand were enrolled.

In 2003, initial results (median follow-up 4.4 years) suggested that radiotherapy reduced new invasive and local recurrences by about half, but no significant effects were noted with tamoxifen treatment.

In this study, Professor Jack Cuzick from Cancer Research UK and Barts and The London School of Medicine and Dentistry, and colleagues report the long-term follow-up (median 12.7 years) of women from the UK/ANZ DCIS trial.

Radiotherapy after surgery reduced the relative risk of new invasive cancer in the same breast by almost 70 per cent and decreased recurrent DCIS in the same breast by over 60 per cent, corresponding to an absolute 10-year reduction in local cancer recurrences of 12.3 per cent. Treatment with radiotherapy had no effect on cancer risk in the other breast.

Treatment with tamoxifen significantly reduced all new breast events, corresponding to an absolute 10-year reduction of 6.5 per cent. Tamoxifen lowered the relative risk of recurrence in the same breast by around 30 per cent (an absolute 10-year reduction of 3.9 per cent) and decreased the risk of new cancer in the other breast by over 65 per cent (an absolute 10-year reduction of 2.3 per cent). However, tamoxifen had no effect on invasive cancer in the same breast as the initial DCIS, and seemed to have no added benefit in patients who were given radiotherapy.

The authors say: "This updated analysis confirms the long-term beneficial effect of radiotherapy and reports a benefit for tamoxifen in reducing local and contralateral new breast events for women with DCIS treated by complete local excision."

They conclude: "This trial emphasises the importance of [radiotherapy](#) in high-grade [more quickly growing and more likely to spread] DCIS and also suggests a role for [tamoxifen](#) primarily for new contralateral disease."

Provided by Queen Mary, University of London

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