

# Hypofractionated radiotherapy was safe, effective for early breast cancer treatment at 10-year follow-up

December 7 2012

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Appropriately dosed hypofractionated radiotherapy was gentle on healthy tissues and effective in controlling local-regional early breast cancer, according to 10-year follow-up results from the U.K.

Standardization of Breast Radiotherapy Trials (START), presented at the 2012 CTRC-AACR San Antonio Breast Cancer Symposium.

"Long-term follow-up confirms that a lower total dose of radiation in fewer, slightly larger fractions delivered over a shorter treatment time is at least as safe and effective as standard five-week schedules of curative [radiotherapy](#) in women with early breast cancer," said John Yarnold, M.B.B.S., professor of [clinical oncology](#) at The Institute of Cancer Research in London and honorary consultant at The Royal Marsden NHS Foundation Trust.

Between 1999 and 2002, 4,451 women with completely excised [invasive breast cancer](#) were recruited to either the START A or START B randomized controlled trials. In START A, researchers compared 50 Gy of postsurgery radiotherapy given in 25 fractions for five weeks versus 41.6 Gy or 39 Gy in 13 fractions for five weeks. In START B, they compared 50 Gy in 25 fractions for five weeks versus 40 Gy in 15 fractions for three weeks.

Data revealed 139 local-regional tumor [relapses](#) among the 2,236 women in START A who were followed for an average of 9.3 years and 95 local-

regional relapses in the 2,215 women in START B, followed for an average of 9.9 years.

The 10-year local-regional [relapse rates](#) for START A were 7.4 percent after 50 Gy, 6.3 percent after 41.6 Gy and 8.8 percent after 39 Gy. In previously published data from START B, the 10-year local-regional relapse rate was 5.5 percent after 50 Gy and 4.3 percent after 40 Gy.

"These long-term data from the START A trial confirm the findings of our earlier results that [breast cancer](#) is, on average, as sensitive to the [radiation dose](#) of each fraction as the dose-limiting normal tissues of the breast area and that this effect persists for at least 10 years," Yarnold said.

However, a five-week, 13-fraction schedule does not offer shortened overall treatment times. "Hence, we also designed the START B trial, a pragmatic comparison of three-week and standard five-week schedules, testing for noninferiority," said Yarnold. "The 15-fraction schedule is definitely gentler on the healthy tissues, and these long-term data confirm our earlier findings that it appears noninferior in terms of tumor control—a very favorable result."

The three-week, 15-fraction schedule is now the standard of care in the United Kingdom and is becoming increasingly more common in other countries, according to Yarnold. Future research is focused on the molecular mechanisms that determine fraction size sensitivity, which may lead to individualization of fraction size.

"It is likely that some breast cancers are more or less sensitive than others," Yarnold said. "We are also testing a one-week schedule of whole breast radiotherapy against our new three-week standard in the U.K. FAST-Forward Trial."

Provided by American Association for Cancer Research

Citation: Hypofractionated radiotherapy was safe, effective for early breast cancer treatment at 10-year follow-up (2012, December 7) retrieved 18 April 2024 from <https://medicalxpress.com/news/2012-12-hypofractionated-radiotherapy-safe-effective-early.html>

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