Breast

Ten-Year Results of FAST: A Randomised Controlled Trial of 5-Fraction Whole-Breast Radiotherapy for Early Breast Cancer

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PURPOSE

Previous studies of hypofractionated adjuvant whole-breast radiotherapy for early breast cancer established a 15- or 16-fraction (fr) regimen as standard. The FAST Trial (CRUKE/04/015) evaluated normal tissue effects (NTE) and disease outcomes after five-fr regimens. Ten-year results are presented.

METHODS

Women ≥ 50 years of age with low-risk invasive breast carcinoma (pT1-2 pN0) were randomly assigned to 50 Gy/25 fr (five weeks) or 30 or 28.5 Gy in five once-weekly fr of 6.0 or 5.7 Gy. The primary end point was change in photographic breast appearance at two and five years; secondary end points were physician assessments of NTE and local tumor control. Odds ratios (ORs) from longitudinal analyses compared regimens.

RESULTS

A total of 915 women were recruited from 18 UK centers (2004-2007). Five-year photographs were available for 615/862 (71%) eligible patients. ORs for change in photographic breast appearance were 1.64 (95% CI, 1.08 to 2.49; P = .019) for 30 Gy and 1.10 (95% CI, 0.70 to 1.71; P = .686) for 28.5 Gy versus 50 Gy. α/β estimate for photographic end point was 2.7 Gy (95% CI, 1.5 to 3.9 Gy), giving a 5-fr schedule of 28 Gy (95% CI, 26 to 30 Gy) estimated to be isoeffective with 50 Gy/25 fr. ORs for any moderate/marked physician-assessed breast NTE (shrinkage, induration, telangiectasia, edema) were 2.12 (95% CI, 1.55 to 2.89; P < .001) for 30 Gy and 1.22 (95% CI, 0.87 to 1.72; P = .248) for 28.5 Gy versus 50 Gy. With 9.9 years median follow-up, 11 ipsilateral breast cancer events (50 Gy: 3; 30 Gy: 4; 28.5 Gy: 4) and 96 deaths (50 Gy: 30; 30 Gy: 33; 28.5 Gy: 33) have occurred.

CONCLUSION

At 10 years, there was no significant difference in NTE rates after 28.5 Gy/5 fr compared with 50 Gy/25 fr, but NTE were higher after 30 Gy/5 fr. Results confirm the published 3-year findings that a once-weekly 5-fr schedule of whole-breast radiotherapy can be identified that appears to be radiobiologically comparable for NTE to a conventionally fractionated regimen.