



# READ IT BEFORE YOUR PATIENTS

## Breast

### Partial breast irradiation versus whole Breast irradiation for early breast cancer patients in a randomised phase III trial: The Danish breast cancer group partial breast irradiation trial

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#### PURPOSE

On the basis of low risk of local recurrence in elderly patients with breast cancer after conservative surgery followed by whole breast irradiation (WBI), the Danish Breast Cancer Group initiated the noninferiority external-beam partial breast irradiation (PBI) trial (ClinicalTrials.gov identifier: NCT00892814). We hypothesised that PBI was noninferior to WBI regarding breast induration.

#### METHODS

Patients operated with breast conservation for relatively low-risk breast cancer were randomly assigned to WBI versus PBI, and all had 40 Gy/15 fractions. The primary end point was three-year grade 2.0-3.0 breast induration.

#### RESULTS

In total, 865 evaluable patients (434 WBI and 431 PBI) were enrolled between 2009 and 2016. Median follow-up was 5.0 years (morbidity) and 7.6 years (locoregional recurrence). The three-year rate of induration was 9.7% for WBI and 5.1% for PBI,  $P = .014$ . Large breast size was significantly associated with induration with a three-year incidence of 13% (WBI) and 6% (PBI) for large-breasted patients versus 6% (WBI) and 5% (PBI) for small-breasted patients. PBI showed no increased risk of dyspigmentation, telangiectasia, oedema, or pain, and patient satisfaction was high. Letrozole and smoking did not increase the risk of radiation-associated morbidity. Sixteen patients had a locoregional recurrence (six WBI and 10 PBI),  $P = .28$ , 20 patients had a contralateral breast cancer, and eight patients had distant failure (five WBI and three PBI). A nonbreast second cancer was detected in 73 patients (8.4%), and there was no difference between groups.

#### CONCLUSION

External-beam PBI for patients with low-risk breast cancer was noninferior to WBI in terms of breast induration. Large breast size was a risk factor for radiation-associated induration. Few recurrences were detected and unrelated to PBI.