

CATALAN INSTITUTE OF ONCOLOGY EXPERIENCE IN IORT BREAST CANCER

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Objectives and purposes

The main purpose of this study was the evaluation of ipsilateral breast tumour recurrences in patients diagnosed with breast cancer and treated by conservative surgery and IORT. The secondary purposes were to evaluate survival and assess the side effects associated with Intraoperative Radiotherapy (IORT).

Material and methods

From 2014 to 2023 at Catalan Institute of Oncology 265 patients were treated with IORT immediately after surgery. IORT was delivered as exclusive treatment in 100 patients and in 165 patients it was followed by External Beam Radiotherapy (EBRT) when high risk factors were associated. A single dose of 20 Gy was prescribed to the surface of the applicator using a 50 kV X-ray source (Intrabeam® or Xofter®). Side effects were graded according to the RTOG-EORTC criteria.

Outcomes

After surgery 4% of all patients presented wound infection, hematoma or seroma that required antibiotics and 4,5% required an aspiration. Fibrosis was not observed in 83.3% of the patients (58% IORT vs 25,3% IORT followed by EBRT). The most common late side effect was fibrosis grade 1 in the 83% of patients (34% IORT and 49% IORT followed by EBRT). Three patients developed local recurrences (2 treated with IORT in the same quadrant and 1 treated with IORT followed by EBRT in a different quadrant). The local recurrence rate for the entire cohort was 1.1% (2% IORT group and 1.2 % IORT followed by EBRT group). Nineteen patients died, and among those, three died due to breast cancer (2 patients treated with IORT and 1 patient treated with IORT and EBRT) and 93% of patients were alive and free of disease. The global median follow-up of was 52 months and the global median-age was 64 years (range 39-91).

Conclusions

The local recurrence rate of breast cancer after IORT was low and comparable with that reported in the literature. At the moment of the analysis 92% patients were alive and free of disease without or with low grade side effects from surgery and IORT. Our results confirm that IORT is a feasible and effective treatment in well-selected patients.