15-YEAR SURVIVAL AND LOCAL CONTROL UPDATE: EARLY-STAGE BREAST CANCER IOERT

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AIM: To evaluate the results in terms of overall survival (OS) and local control of intraoperative electron radiotherapy (IOERT) delivered by standard linear accelerators or mobile lineal accelerators (LIAC) during breast conservative surgery for early breast cancer (EBC).

PATIENTS AND METHODS: 172 patients were treated from 2009 to 2023. According to results of sentinel lymph nodes biopsy, 110 patients received a single dose of 2100 cGy (N0) and 62 (N+) were treated with an electron boost (1000 cGy) followed by external beam radiotherapy. We used SPSS 29 for descriptive analysis and calculate 10-year OS using Kaplan Meier estimate.

RESULTS: The median age at diagnosis was 68 (42-87). Pathologic stages were I (80%) and II (19,2%). Subtype Luminal A and B were 86% and 13% respectively. Electron energies ranged from 6 MeV (58%) to 12 (8%) MeV. Most frequent applicator diameter used was 5cm (64%) and the most frequent bevel angle was 0º (62.2%). Metallic internal patient-shielding was used in 71% of procedures. Median time for wound healing was less than 15 days in 159 (92.4%) patients. There were no surgical complications in 79.65%. We observed lyponecrosis in 16 patients (9.3%). There were 4 local relapses (3 breast recurrences and 1 axillary) and 3 patients were diagnosed with distant metastasis. With a median follow-up of 84 months, we obtained a 10-year OS of 88% (non-cancer-related death).

CONCLUSIONS: After 15 years of institutional experience, IORT in early-stage breast cancer has shown low toxicity, excellent local control and promising OS outcomes.

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