

Long-Term Outcomes of an International Cooperative Study of Intraoperative Radiotherapy Upfront Boost With Low Energy X-Rays in Breast Cancer

Resultados a largo plazo de un estudio cooperativo internacional de refuerzo inicial de radioterapia intraoperatoria con rayos X de baja energía en el cáncer de mama

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TIPO DE CANCER: Radiodiagnóstico

ABSTRACTO: Purpose: The purpose of this study was to assess the effectivity of upfront kilovoltage intraoperative radiotherapy (IORT) as a boost in high-risk early-stage breast cancer patients from an international pooled cohort. Materials/methods: Patients from four centers in three different countries were retrospectively screened. Those with a minimum 1-year follow-up were included. Cumulative local (LR), regional (RR), and distant metastasis rates (DM) were analyzed. Additionally, the estimated overall survival (OS) was assessed. The Cox regression analysis was performed to identify failure predicting factors. Results: A total of 653 patients from centers in Peru, Spain, and Germany were included. The median follow-up was 55 (12-180) months, and age was 58 (27-86) years. Clinical tumor (T) staging was T1 65.85%, T2 30.17%, and T3 3.98%. Positive margins were found in 7.9% and in-situ component in 20.06%. The median IORT dose was 20 (6-20). The median time from IORT to EBRT was 74.5 (13-364) days. An overall 3.4% (n = 22) of patients developed local recurrence at some point during follow-up. The 12-, 60-, and 120-month cumulative LR were 0.3%, 2.3%, and 7.9%, respectively. After multivariate analysis, only age <50 remained to be a significant prognostic factor for local recurrence (HR 0.19, 95% CI 0.08-0.47; p < 0.05). The 10-year estimated OS was 81.2%. Conclusion: Upfront boost with IORT yields similar local control outcomes to those EBRT-based reports. Results from prospective trials, regarding toxicity, cosmesis, and effectivity are awaited to confirm these findings.