Helical tomotherapy for breast cancer stage IIIC including internal mammary chain

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Introduction. Radiation therapy is an integral part in the combined treatment of breast cancer. The benefit is well established in terms of both local control and survival endpoints. Helical Tomotherapy has been proposed as an alternative to standard 3D conformal radiotherapy.
Purpose. To evaluate dosimetric characteristics of Helical Tomotherapy for breast cancer radiotherapy.
Methods and materials. Nine patients with histologically proven breast cancer affecting internal mammary chain (clinically and/or histologically confirmed) stage IIIC, were included in this study. CT simulation scans were used to contourn the planning target volumes (PTV) including the chest wall/breast, supraclavicular, axillary, and internal mammary lymph nodes. Dose prescription was 50/50.4, in 25/28 fractions of 2/1.8 Gy, to the PTV and treatment planning objectives were to cover at least 95% of the planning target volume with the 95% isodose. Beamlet entrance and/or exit throughout critical structures was blocked to protect the lungs, heart, and contralateral breast.
Results. Median homogeneity index (maximum dose/prescribed dose) was 1.23 (range 1.05–1.48). Median coverage index (minimum dose/prescribed dose) was 0.72 (range 0.54–0.9) Median V30, V20 and V5 for ipsilateral lung was 16.72% (range 0–26.5%), 30.8% (range 10.62–40%) and 97.6% (range 64.46–100%) respectively. Median V30, V20 and V5 for contralateral lung was 0% (range 0–0.48%), 0.095% (range 0–2.58%) and 49% (range 5.84–92.38%) respectively. Median V30, V20 and V5 for heart was 1.112% (range 0–4.6%), 4% (range 0.025–15.44%) and 96.52% (range 27.3–100%) respectively. Median V20, V10 and V5 for contralateral breast was 0% (range 0–0.37%), 1.25% (range 0.1–11.82%) and 28% (range 15.53–49.4%) respectively.
Conclusion. HT offers acceptable dose distribution. This technique achieves high homogeneity and conformality, and reduces the hot-spots in organs at risk although increasing the low dose areas. However, clinical advantage of using HT in breast cancer is unknown. Further studies of long monitoring period are required.

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Hypofractionated radiation therapy in breast cancer. Experience of a regional department

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Introduction. Breast cancer sensitivity to large fraction size may be enhanced using hypofractionated radiotherapy, thereby shortening overall treatment time. Purpose: To report early outcomes of whole-breast hypofractionation radiation scheme.
Methods and materials. Retrospective institutional review. Eligibility included breast cancer patients treated with hypofractionated radiation therapy after conservative surgery. Node metastases or adjuvant chemotherapy were not exclusion criteria for this analysis. The whole breast volume received 40.05 Gy in 2.47 Gy fractions with a sequential lumpectomy boost to administrate 10–20 Gy in 5–10 fractions.
Results. Between January 2009 and June 2012, 182 patients were treated in our department; median age 65 years. Stage distribution was as follows: TisN0, $n = 31$; T1N0-1, $n = 103$; T2N0-2, $n = 45$; T3N1, $n = 2$ and T4N0 $n = 1$. With a median follow-up of 31 months (range, 7–50 months) the median survival was 32 months (95% confidence interval [CI] 29.2–34.8). Acute National Cancer Institute/Common Toxicity Criteria grade 1, 2 and 3 skin toxicity was observed in 47.2%, 12.1% and 2.1% respectively, and grade 1 lung toxicity only in 1.6%. We observed 1 local relapse and 3 deaths, but only 2 were related to the tumor. Among the patients with ≥2-year follow-up no toxicity higher than grade 2 was observed (Late Effects in Normal Tissues–Subjective, Objective, Management, and Analytic scale).
Conclusions. The hypofractionated radiation schedule employed to whole-breast followed by sequential boost can be safety administered. With current follow-up, the results are encouraging and suggest minimal side effects and excellent local control.

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Hypofractionation in breast cancer. Experience of a single institution

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Introduction. In the last years numerous studies have shown the equivalence between standard and hypofractionated treatment in breast cancer in terms of local control.
Objective. Analyze, in terms of toxicity, the results of our institution in the treatment of patients in a hypofractionated way.
Materials and methods. We have analyzed all the patients treated in our service (from May 2009 to September 2012) following the scheme of the study START B (40.05 Gy/15 fractions). We excluded locally advanced cancers that had required mastectomy

or locorregional treatment. All patients were treated with direct IMRT. Toxicity was analyzed using the scale of Harris and van Limbergen and Common Terminology Criteria for Adverse Events (CTCAE) Versión 4.0.
Results. We have evaluated 301 patients with a mean age of 52 years and a median following time of 15 months (3–39). 97% of the patients received a boost over the tumor bed (91.3% with brachytherapy). 77.4% were infiltrating tumors; 22.6% were DCIS. When finishing the treatment, 75.8% of the patients suffered grade 1 radiodermatitis (fully recovered after a month in 94.1%) and hyperpigmentation was grade 1 in 48.2% patients thirty days after treatment. Chronically, fibrosis appeared in 50% of the patients (48.2%: grade 1 and 1.8%: grade 2) and hyperpigmentation remained grade 1 in 30.9% of patients. No grade 3 or 4 toxicity was reported. We found that final aesthetic result in the evolution critically depends on the state of the breast after surgery and before radiotherapy.
Conclusion. Hypofractionated treatment in breast cancer is safe in terms of toxicity (acute and chronic) and very well tolerated with good cosmetic outcomes. It also provides patients the opportunity to reduce their visits to the hospital and return to their daily lives. Another important issue is the cost savings when compared to conventional treatment.

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Impact of breast radiodermatitis in the quality of life

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Objective. To evaluate the influence of radiation dermatitis in the quality of life of women with breast cancer treated with radiation therapy after conservative surgery.
Material and methods. Observational, prospective longitudinal done at the Department of Radiation Oncology-CHGUV-ERESA between December and June 2012 in 35 patients requiring breast irradiation. Inclusion criteria: Conservative surgery, absence of cognitive impairment and Spanish-speaking. The assessment of quality of life was performed using two validated questionnaires for Spanish, DLQI1 and Skindex-292-3. Three surveys were conducted DLQI (the first and last week of treatment and one month after the end). The Skindex-29 was performed at the end of treatment and at three scales are rated: functional, emotional and symptomatic. All patients followed the protocol radiodermatitis prevention of service.
Results. In the valuation of impaired quality of life on the end of treatment shows that in DLQI: only 3 participants had scores of 10 or higher on a total score of 30, this represents a low influence. When spend a month of the end of treatment, further reduces this influence. The items on pain, burning and itching were the highest. In Skindex-29 only two women had scores of 35 and 38 out of 100 representing a half affectation. In the remaining women, affectation was low or very low.
Conclusions. Contrary to what is concluded in recent publications,[1–5] this study shows a low alteration of the quality of life of women with breast irradiation. These results are highly dependent on Radiation Oncology service where treatment takes place as they depend protocols on the acceptance of treatment and the protocols for prevention and management of radiation dermatitis that are used in each service.

REFERENCES

1. De Tiedra A, Mercadal J, Badía X, Mascaró J, Lozano R. A method to select an instrument for measurement of HR-QOL for cross-cultural adaptation applied to dermatology. *Pharmacoeconomics* 1998;(October):14405–22, 2.
2. Jones-Caballero M, Peñas PF. Calidad de vida en Dermatología. *Actas Dermo sifiliográficas* 2002;**93**(November (8)):481–9.
3. Jones-Caballero M, Peñas P, García-Díez A, Chren M, Badía X. The Spanish version of Skindex-29. An instrument for measuring quality of life in patients with cutaneous diseases. *Medicina Clínica* 2002;**118**(1):5–9.
4. Schnur J, Ouellette S, Dilorenzo T, Green S, Montgomery G. A qualitative analysis of acute skin toxicity among breast cancer radiotherapy patients. *Psycho-Oncology* 2011;**20**(3):260–8.
5. Schnur J, Love B, Scheckner B, Green S, Gabriella A, Montgomery G. A systematic review of patient-rated measures of radiodermatitis in breast cancer radiotherapy. *American Journal of Clinical Oncology* 2011;**34**(5):529–36.

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Impact of focused assessment of breast radiodermatitis

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Introduction. Breast radiodermatitis not always appear uniformly distributed throughout the breast. Throughout the treatment, it is common to see more afectation in some areas than in others.