

**Conclusions.** Hyperfractionated radiotherapy achieves high loco-regional control rates, irrespective of reduced survival caused by metastatic progression. After a long follow-up period of our study, late toxicity observed in cases treated in early times were related to biological characteristics of intrinsic radiosensitivity as initial damage DSB and constitutive gene pathways.

<http://dx.doi.org/10.1016/j.rpor.2013.03.723>

#### **Hypofractionated radiotherapy for early breast cancer: Results of CROASA group**

A. Serradilla<sup>1</sup>, J. Gómez<sup>1</sup>, A. Ristori<sup>2</sup>, D. Rivas<sup>3</sup>, E. López<sup>4</sup>, J. Begara<sup>1</sup>, A. Lazo<sup>3</sup>, C. Fernández<sup>3</sup>, A. Bezares<sup>3</sup>, R. Jiménez<sup>1</sup>, P. Moreno<sup>1</sup>, A. Domínguez<sup>1</sup>, A. Sacchetti<sup>1</sup>

<sup>1</sup>Clinica CROASA, Málaga, Oncología Radioterápica, Spain

<sup>2</sup>Clinica Radon, Algeciras (Cádiz), Oncología Radioterápica, Spain

<sup>3</sup>Clinica Oncosur, Cabra (Córdoba), Oncología Radioterápica, Spain

<sup>4</sup>Clinica Oncosur, Granada, Oncología Radioterápica, Spain



**Introduction.** Breast-conserving surgery followed by whole breast irradiation is a standard treatment of early breast cancer. The application of postoperative radiotherapy reduces by two-thirds the risk of 10-years local recurrence and increase the rate of 10-years survival by 5%. There are radiobiological reasons justifying the use of hypofractionation in breast cancer. Since the  $\alpha/\beta$  value of breast cancer has been estimated around 4 Gy, high fraction doses may be more efficient. However, these doses may also increase the frequency and severity of side effects in normal tissues.

**Objectives.** According to the results published of four phase III trials that compared standard treatment versus hypofractionated treatments, since 2008 we started in our centers, a hypofractionation protocol in patients with early breast cancer. The purpose of the study is to communicate the preliminary results.

**Materials and methods.** 578 patients with breast cancer were treated between 2008 and 2011 by hypofractionation regimen and an additional hypofractionated boost to the tumor bed in those patients at high risk of local recurrence.

**Results.** With a maximum follow up of 52 months, the median age of the patients was: 57 years (25–87). Tumor size (TNM): In situ: 10% (56 patients), T1: 69%, T2: 20%, T3: 1% surgery of the axilla was lymphadenectomy in 25% and sentinel node biopsy in 70%; positive axillary nodes were found in 15%. The median prescribed dose to the whole breast was 42.56 Gy, with a fractionation of 2.66 Gy. Median additional boost administered was 7.98 Gy. Acute skin reactions (toxicity criteria RTOG): G0: 28%, G1: 56%, G2: 10%, G3: 2%, there was no G4 toxicity. There were no acute adverse cosmetic results (assessed in agreement with the Harvard criteria).

**Conclusions.** The explored hypofractionated radiotherapeutic approach for early breast cancer seems to be feasible providing consistent clinical results with excellent short-to-medium-term toxicity profile.

<http://dx.doi.org/10.1016/j.rpor.2013.03.724>

#### **Hypofractionated radiotherapy in the conservative treatment of breast cancer**

I. Linares Galiana, R. del Moral Ávila, J. Expósito Hernández, P. Vargas Arrabal, M. Gentil Jiménez, M. Tovar Martín  
Hospital Universitario Virgen de las Nieves, Oncología Radioterápica, Spain



**Introduction.** The scheme of standard radiotherapy for breast cancer treatment involves a high total dose in 25 fractions. However, a decrease in the total dose, together with an increase in the dose per fraction (hypofractionation) is discussed to be at least as effective as standard treatment.

**Objective.** To analyze the results in local control, acute and late toxicity and cosmetic outcome in patients treated with hypofractionated radiation therapy after conservative surgery for breast cancer in our center.

**Materials and methods.** A retrospective analysis of all women diagnosed with breast cancer and treated with breast-conserving surgery followed by hypofractionated scheme from 2006 to 2011. Total dose on mammary gland: 42.4–2.65 Gy/fraction, for a total of 16 sessions with concomitant boost to 7.7 Gy (0.48 Gy/fraction). We included patients treated with chemotherapy, hormonal therapy and trastuzumab.

**Results.** We have treated 143 women with hypofractionated scheme. After a median follow up of 30 months, the local recurrence rate was 0%, only 2.2% experienced nodal relapse, one patient developed a contralateral breast cancer and 7.4% had distant metastases. There was no acute toxicity in 28.4% of cases, being the most frequent grade 1 radiodermatitis (61.1%). Regarding late toxicity, this was not observed in 65.6%, being grade 1 fibrosis in the treated area the most common. The aesthetic result was good or excellent in 90% of patients treated. At the end of the study, 88.1% remained alive without disease, 5.2% alive with disease, 3% exitus due to tumor and 3.7% were died due to other causes.

**Conclusion.** The hypofractionated scheme after conservative surgery in breast cancer provides a good control of the disease without causing excessive toxicity and providing good aesthetic results. Similar results to standard treatment can be obtained with a significant reduction in overall treatment time.

<http://dx.doi.org/10.1016/j.rpor.2013.03.725>