A multicenter, observational study was therefore designed to correlate different treatment strategies and techniques with clinical outcome.
Material and methods: All patients irradiated during 1997 to the breast after conservative surgery in each of 12 participating Centers were included in the study, yielding a total of 1620 cases. However, 4 Centers were not able to update the follow-up after 2001, and all their cases were excluded from the present analysis, based on the remaining 1176 patients treated in 8 Centers. Relevant baseline patients' characteristics were the following: age was 25–50 years (y) in 32%, 51–65 y in 44%, and 66–80 y in 24% of cases; pT-stage was T1a in 3%, T1b in 21%, T1c in 54% and T2 in 19% of cases; pN-stage was N0 in 71%, N+(1–3) in 21%, and N+(> 3) in 8% of cases; estrogen and progesterone receptor status was positive in 68% and 53% of cases, respectively. Surgical procedure was quadrantectomy in 97% of patients, with axillary dissection performed in 96% of cases. Adjuvant chemotherapy alone was given to 24%, chemotherapy and hormonal treatment to 11%, and hormonal treatment alone to 38% of the patients, while 27% of patients received no adjuvant medical treatment. Median interval from surgery to RT was 57 days; CT- or external contour-based 2-D treatment planning was performed in 89% of patients; total ICRU dose to the whole breast was 50 Gy in 85% of cases; a boost dose was given in 60% of cases (dose range, 5–18 Gy); total dose to tumor bed was 50 Gy in 31% and 60 Gy in 54% of cases; median RT duration was 42 days.
Results: With a median follow-up of 6.2 y (range, 0.2–8.2 y) disease-free, overall and disease-specific survival rates at 5 years are 90%, 95% and 96%, respectively; local, regional and distant control rates at 5 years are 98%, 99% and 92%, respectively (see Table). Factors significantly predicting for decreased disease-free survival in a multivariate analysis were high pN-stage ($p < 0.001$), lack of adjuvant treatment ($p = 0.001$), high grade ($p = 0.004$), high pT-stage ($p = 0.009$), multifocality ($p = 0.039$), and pre-menopausal status ($p = 0.043$). Factors that significantly predicted for decreased local control were younger age ($p = 0.005$), lack of adjuvant treatment ($p = 0.009$) and high pN stage ($p = 0.03$).

	3 year	5 year	7 year
Disease-free survival	94%	90%	85%
Overall survival	97%	95%	92%
Disease-specific survival	98%	96%	94%
Local control	99%	98%	95%
Regional control	99%	99%	98%
Distant control	95%	92%	90%

Conclusions: In a multicenter, population-based setting, conservative surgery followed by RT was associated with excellent rates of local-regional control and disease-specific survival. Despite several differences in radiotherapy techniques, clinical outcome was comparable between Centers. Patient age, tumor-related factors and adjuvant treatment were significant predictors for both survival and local control.

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Left breast irradiation in breast conservative cancer treatment: analysis of doses in V20 in lung and heart

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Introduction: In the last few years, the incidence of breast cancer is increasing progressively. Simultaneously, the used of breast conservative treatments and new more cardiotoxic chemotherapy regimens are widely used in this group of patients. The risk of cardiac and pulmonary complications increases as the volume of and the dose to these structures increases. We analyzed the V20 dose to lung and heart using a CT treatment planning.
Material and methods: We analyzed 42 left side breast cancer patients, treated with breast conservative treatment and radiotherapy. We treated regional nodes (supraclavicular and axillary nodes) in 6 patients. All the structures (whole breast, tumor bed, lung and heart) were identifying using CT treatment planning, and 1 cm slices were taken through the whole breast. All the patients were treated with an isocentric technique with opposite tangential fields, and wedge filters, with photons of 4 MV in 30 patients and with 6 MV in 12 patients. All the patients received whole breast radiation therapy for a total dose of 50 Gy in 200 cGy daily, followed by a boost to the tumor bed. Chemotherapy was administered in 24 patients (57%), and this treatment was concurrently in 5 patients.
Results: The treatment planning system in 3D used were a Theraplan plus Median V20 dose in lung were 6.20 cGy (range 0–21.4) and median dose in heart were 1.35 cGy (range 0–5.4). None of the patients presented any clinical cardiac or pulmonary toxicity (no fibrosis, edema or cardiac failure), included patients with concurrent chemotherapy. We analyze the factors that influence in these results, like technique of simulation, determination of target volume and selection of treatment planning.
Conclusion:
- The CT treatment planning in 3D in left breast cancer is a method that achieve an homogeneous doses in the target volume and simultaneously can accurately preserve the risk organs like heart and lung.
- In our series, the dose of radiation that achieves the cardiac muscle is very low, That's why the secondary effects and late toxicity are very rare and without any clinical repercussion.

We need more studies to demonstrate that we can use concurrent chemoradiotherapy treatments in breast cancer without increased the risk of cardiac or pulmonary toxicity

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Results and prognostics factors in patients with breast cancer treated with adjuvant radiotherapy after mastectomy

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Objective: To resrospectively evaluate the efficacy of the treatment and possible prognostic factors in patients treated with adjuvant radiotherapy after mastectomy.
Materials and methods: Between January 1994 and December 2001, 899 patients with a diagnosis of breast cancer were treated with adjuvant radiotherapy after mastectomy in Hacettepe University, Faculty of Medicine, Dept. of Radiation Oncology. Radiotherapy was routinely applied to patients with positive surgical margin, skin-fascia invasion, tumor size of more than 4 cm, more than 3 lymph node (LN) metastasis and incomplete axillary dissection (< 10 LN). Chest wall ± periferic lymphatics were irradiated with conventional daily fractionation to a total dose of 46–50 Gy.
Results: The median age was 47 years (range, 19–85 years). Seven hundred sixty (85%) patients had modified radical mastectomy, 74 (8%) had radical mastectomy, 65 (7%) had simple mastectomy before radiotherapy. Median follow up was 62 months (range, 4–136 months). The actuarial overall 5-year survival (OS) was 82%, whereas the actuarial 5-year disease-free survival (DFS), loco-regional relapse free survival (LRRFS), and distant metastasis-free survival (DMFS) rates were 67%, 90%, and 74%, respectively.
Univariate analysis for OS revealed significance for tumor size (⩽5 cm vs. >5 cm, $p < 0.0001$), number of metastatic LN (0 vs. 1–3 vs. >4 LN, $p < 0.0001$), percent positive nodal involvement ([metastatic nodes/total nodes removed] × 100;0% vs. ⩽25% vs. 26–50% vs. >50%), AJCC 2002 stage ($p < 0.0001$), surgical margin status (negative vs. positive, $p = 0.02$), surgery type ($p < 0.0001$), neoadjuvant chemotherapy (present vs. absent, $p < 0.001$), adjuvant hormonotherapy (present vs. absent, $p = 0.008$) and grade (grade I vs. grade II vs. grade III/IV, $p = 0.05$). For DFS number of metastatic LN ($p < 0.0001$), percent positive nodal involvement ($p < 0.0001$), AJCC 2002 stage ($p < 0.0001$), surgical margin status ($p = 0.04$), vascular invasion (present vs. absent, $p = 0.007$), perinodal fat tissue invasion (present vs. absent, $p = 0.004$), neoadjuvant chemotherapy (present vs. absent, $p = 0.0001$), adjuvant chemotherapy (present vs. absent, $p = 0.05$) and surgery type ($p = 0.0006$).
Multivariate analysis revealed importance for grade, tumor diameter, percent positive nodal involvement, hormonal treatment, and surgical margin status in OS. Age (⩽40 years vs. >40 years), grade, percent positive nodal involvement, neoadjuvant chemotherapy and stage were found to be significant for DFS.
Conclusions: In this study, we have revealed percent positive nodal involvement as a poor prognostic factor for all survival in end points and found the worst prognosis for patients having more than 50% nodal involvement. It seems that percent positive nodal involvement instead of crude number of metastatic LN more informative for prognosis.

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Breast cancer in the US, UK, France, and Germany: whom do patients see and how do they get medical information?

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Background: Breast cancer is the No. 1 cancer in women, and the No. 2 cause for death due to cancer. However, it is unknown if country-specific consultation patterns exist for these patients and how these patients obtain medical information.
Materials and methods: A comprehensive, cross-sectional survey of adults ⩾18 years in the US, UK, France, and Germany was conducted in May-June 2004. Patients were drawn from nationally representative Internet panels through Harris Interactive (US, Europe). Invitations were sent to a