Materials and Methods: Between 2008 and early 2009, 34 patients with T1−2N0M0 breast cancer were randomised into two groups. Group A (n = 17) received standard radiotherapy with 50 Gy/25f/5w plus boost 10 Gy/5f/1w to tumor bed and Group B (n = 17) 43.2 Gy/16f/22 d plus boost 8.1 Gy/3f/3 d. All patients were tested using spirometry and gas diffusion tests on D0 (before RT), during RT (on D7 and D21) and after completion of RT at 3, 6, 9, 12 months. High resolution CT scans were performed at 6, 9, 12 months after completion of RT. Respiratory symptoms were recorded.
Results: Preliminary results are shown in the table.

Follow-up time (at present)	Treatment group	Uncomplicated	Complicated	Total
6 months	Group-A	7	1	8
	Group-B	2	4	6
	Total	9	5	14
9 months	Group-A	3	1	4
	Group-B	3	1	4
	Total	6	2	8
12 months	Group-A	2	0	2
	Group-B	1	0	1
	Total	3	0	3

The percentance of incidence of radiation-induced pneumonitis for the two treatment groups, is directly derived from the data of the table: **i) Group-A:** 12.5% (6-month follow up) and 25% (9-month follow up), and **ii) Group-B:** 66.7% (6-month follow-up) and 25% (9-month follow-up).
Conclusions: The preliminary results indicate an increase in the incidence of radiation-induced pneumonitis for the patients of group-B (hypofractionated RT regimen) over that for the patients of group-A (conventional fractionation). However, this is an ongoing study and for statistically confident conclusions an investigation of late effects on a larger number of patients is necessary.

5128 POSTER

Optimal radiation field in pathological N0-N1 patients treated with neoadjuvant chemotherapy followed by surgery for locally-advanced breast cancer

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Background: To investigate the treatment results and evaluate the necessity to irradiate the supraclavicular lymph node region (SCN) in pathological N0-N1 patients treated with neoadjuvant chemotherapy followed by surgery and radiotherapy (RT) for locally advanced breast cancer.
Material and Methods: Between 1996 and 2006, 115 patients with initial tumor size >5 cm or clinically positive lymph nodes were treated with neoadjuvant chemotherapy followed by surgery and radiotherapy. Among these patients, we retrospectively reviewed 57 patients with pathological N0 or N1. All patients received anthracycline based neoadjuvant chemotherapy. Thirty patients were treated with modified radical mastectomy and 27 patients with breast conserving surgery. The pathological tumor stage was T0 or Tis in 21%; T1 in 33%: T2 in 28%: T3 in 16% and T4 in 2% of patients. The pathological lymph node stage was N0 in 47% and N1 in 53%. Adjuvant RT was given to all patients; 37 patients to chest wall or breast and supraclavicular area (SCNRT+ group) and 20 patients only to chest wall or breast (SCNRT− group).
Results: Locoregional failure free survival (LRFFS), distant metastasis free survival (DMFS), disease free survival (DFS) and overall survival (OS) at 5 years were 92%, 83.2%, 81.4% and 87.7%, respectively. Pathological tumor stage and hormone treatment were statistically significant factors for DMFS, DFS and OS on multivariate analysis ($p < 0.05$). Radiation field to include supraclavicular area or not did not seem to be any relationship with LRFFS, DMFS, DFS and OS. In pN0 and pN1 patients, 5-year DFS was 86.6% and 68.8% in SCNRT+ group, compared with 80.8% and 100% in SCNRT− group, respectively ($p = 0.9794$, $p = 0.0713$).
Conclusions: In patients with pathological N0 or N1 after neoadjuvant chemotherapy followed by surgery, we might dispense radiotherapy to SCN and give only to chest wall or breast in selected patients according to pathological tumor stage.

5129 POSTER

Surfactant protein D as a serological marker of lung inflammation in breast cancer patients under radiation treatment

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Background: Surfactant protein D (SP-D), a potential specific marker of lung disease, and C-reactive protein (CRP), an established inflammatory marker, are evaluated to assess radiation-induced lung inflammation in breast cancer patients.
Material and Methods: SP-D and CRP levels were measured prospectively by ELISA in 40 patients with primary breast cancer, aged 29−71 years, and 20 healthy controls. Serum samples were collected prior to initiation, during, and at completion of radiation therapy and throughout a follow-up period of 7 months (90, 140 and 240 days after the initiation).
Results: According to their median SP-D and CRP serum levels, patients were categorized into three groups. Regarding SP-D, patients of the first group exhibited levels within normal range compared to healthy controls (<110 ng/ml) at all time points. Patients within the second group exhibited increased levels at the end of radiation therapy and during follow-up (At the end: 123.57 ng/ml, Follow-up: 90th day: 113.86 ng/ml, 140th day: 116.22 ng/ml), whereas patients of the third group expressed highest levels, above normal range, at all time points. Considering CRP, serum levels were within normal range at all time points for patients of the first and second group compared to healthy controls (114.2–3832.6 ng/ml) whereas increased levels (4946.2 ng/ml) were observed only prior to radiation therapy for the patients of the third group. No disease progression was observed according to clinical evaluation and tumor marker measurements (CEA and CA 15−3).
Conclusions: Increased levels of SP-D and CRP prior to radiotherapy, in the patients of the third group, indicate the presence of an inflammatory condition not associated with radiation treatment. The sustained elevated SP-D expression at all time points suggests that this molecule may be a more sensitive marker of lung inflammation than CRP. Regarding patients of the second group, the increased SP-D serum expression at the end of radiotherapy and during follow-up may be suggestive of radiation-induced lung inflammation. However, CRP does not appear to reflect these effects since no corresponding increase was detected. Concluding SP-D seems to be indicative of lung inflammation in breast cancer patients under radiation therapy, serving as a specific noninvasive serological marker.

5130 POSTER

Short-term outcome of prospective trial for Japanese breast cancer patients treated with accelerated partial breast irradiation using 3D Conformal Radiotherapy

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Purpose: We present our clinical trial utilizing 3D-conformal radiation therapy (3D-CRT) to deliver accelerated partial breast irradiation (APBI) in patients with early-stage breast cancer treated with breast conserving therapy.
Methods and Materials: Between Janualy 2008 and March 2009, 51 patients with Stage 0−2 breast cancer were enrolled at National Cancer Center Hospital, Japan, institutional review board-approved. Eligibility criteria included pathological tumor size <3 cm, invasive ductal and lobular histologies as well as ductal carcinoma in situ, lumpectomy with negative surgical margins, $\leqslant$3 positive axillary nodes, unifocal lesion, and written patients consent. Patients receiving chemotherapy before operation were excluded. The clinical target volume consisted of the lumpectomy cavity with surgical clips plus a 10 mm margin; the planning target volume (PTV) was calculated from the CTV using uniform 3-D expansions. The prescribed dose was 38.5 Gy in 10 fractions given over 2 weeks. All patients were treated once a day.
Results: The median follow-up after radiotherapy was 248 days (range, 35–456). The clinical stage distribution was as follows: 0 in 7 patients, 1 in 33, and 2 in 20. The median tumor size was 16 mm (range, 5−30 mm). The median age was 58 year (range, 32−79). 15 patients underwent chemotherapy before entering trial. Adverse event information according to CTCAE V3.0 is presented in table. No local or distant recurrences developed.
Conclusion: 3D-CRT for APBI is feasible for Japanese breast cancer patients in short follow up. Additional follow-up will be needed to assess the long-term feaibility and efficacy of APBI using 3D-CRT.