

patients treated at the European Institute of Oncology in Milan between June 1994 and December 2009.

Results: The main goal of surgical treatment for women with DIN is breast conservative surgery (BCS); mastectomy is still indicated in large lesions, masses or microcalcification, in about 30% of cases. RT after BCS is indicated in selective cases, mainly depending on grading of the tumour. Medical treatment is proposed in estrogen receptors-positive patients. There are significant differences in the practical applications of the theory, in particular regarding the indications of sentinel lymph node biopsy, the definition and identification of low-risk DIN subgroups patient, which can avoid RT and tamoxifen and the identification of alternative drugs for adjuvant medical therapy.

Conclusion: New large trials are necessary to define the best management of DIN patients, because nowadays it still remains complex and controversial.

457

Poster

Clinical Differences Exist Between DCIS with Low and High Ki67 Expression

D. Sabadell¹, M. Vernet-Tomas¹, F. Plancarte¹, A. Rodriguez Arana¹, I. Collet¹, J.M. Corominas¹, M. Segura¹, J. Solsona¹, R. Carreras².

¹Hospital del Mar, Breast Functional Unit, Barcelona, Spain; ²Hospital del Mar, Obstetrics and Gynecology Department, Barcelona, Spain

Background: molecular characteristics as Ki67 expression could define different DCIS subtypes. The aim of this study was to establish clinical differences between DCIS expressing low Ki67 levels and DCIS expressing high Ki67 levels.

Material and Methods: we reviewed all DCIS treated in our institution between January 1993 and June 2011 (N = 256). Two groups were defined upon Ki67 expression: low expression group (expression in 14% of cells or less) and high expression group (expression in 15% of cells or more). Data on patient's age, menopause, breast cancer family history, breast symptoms, breast exploration, multicentric/multifocal disease and tumour size were collected. Microsoft Access and PASW statistics 18 were used to store and analyze data. Chi2, Fisher's exact test and Student T were applied when necessary.

Results: data on Ki67 expression were obtained in 79 patients. Patients in the high expression group were significantly younger (median±SD, 55.64±10.22 vs 60.68±11.43, p=0.05). More women in the high expression group were premenopausal (40% vs 26.7%), had a breast cancer family history (47.4% vs 24.1%) and presented a multifocal/multicentric disease (6.5% vs 2.1%), even though these differences were not significant. A similar percentage of patients in each group presented with breast symptoms (13% in the low expression group and 13.3% in the high expression group). A higher percentage of patients in the low expression group presented a positive clinical breast exploration (22.9% vs 12.9%) even though this difference was not significant. Tumour size tended to be bigger in the high expression group (median 27.70 vs 16.6 mm), but this difference was neither significant.

Conclusions: DCIS with a high Ki67 expression presents at a younger age than DCIS with low Ki67 expression. The study should include more patients for conclusive findings, but the group of high Ki67 expression showed a tendency to affect more frequently premenopausal patients and patients with a breast cancer family history. These high Ki67 expressing tumours also tended to present more frequently as a multifocal/multicentric disease and more extensive tumours.

Friday, 23 March 2012

12:45–14:00

POSTER SESSION

Radiotherapy

458

Poster discussion

Re-irradiation Plus Hyperthermia for Recurrent Breast Cancer in Previously Irradiated Area; Size Matters

S. Oldenborg¹, V. Griesdoorn¹, Y. Kusumanto¹, R. van Os¹, S.B. Oei², J.L.M. Venselaar², J. Crezee¹, P.J. Zum Vörde Sive Vörding¹, C.C.E. Koning¹, G. van Tienhoven¹. ¹Academic Medical Center, Dept. of Radiation Oncology, Amsterdam, The Netherlands; ²Institute Verbeeten, Dept. of Radiation Oncology, Tilburg, The Netherlands

Background: Treatment options for patients with locoregional recurrent breast cancer in previously irradiated area are limited. Five hundred and

eighty-three patients were treated with re-irradiation and hyperthermia (re-RT/HT) in the AMC (n = 456) and the BVI (n = 127) from January 1982 till January 2006. Response, locoregional control and toxicity were analysed as well as prognostic factors.

Materials and Methods: All patients received extensive previous treatments, including surgery, chemotherapy and irradiation to a median dose of 50 Gy with or without boost. Median interval between initial treatment and re-RT-HT was 50 months (range 3–469).

The median age was 57 years at start of re-RT/HT. The estimated tumour size was >10 cm in 60% of patients. The maximum measurable tumor size was 50 cm. Distant metastases were present in 38% and 74% had experienced 1–14 recurrence episodes, prior to the re-RT-HT. Re-RT consisted typically of 8x4 Gy, twice a week (AMC) or 12x3 Gy, four times a week, (BVI). Superficial hyperthermia was added once/twice a week using 434MHz CFMA antennas. Aim temperature: 41–43°C for one hour. Twenty-two percent of patients received additional chemotherapy and 30% additional hormone therapy.

Results: Overall clinical response rate (50% cCR+ 32% cPR) was 82%. The infield 3-year local control (LC) rate was 20%. Tumor size, interval, previous recurrences, contralateral disease and distant metastases (DM) were important prognostic factors. For patients with isolated locoregional recurrences ≤ 5 cm the 3-year LC rate was 44%. (Table 1).

Median overall survival was 12.5 months. Acute ≥ grade 3 toxicity occurred in 26% of patients. The actuarial late ≥ grade 3 toxicity rate was 28% at 3 years.

Table 1

Tumor size	Isolated			With DM		
	n	cCR (%)	3-y LC (%)	n	cCR (%)	3-y LC (%)
≤ 5 cm	63	81	44	29	52	21
5–10 cm	88	60	24	53	36	20
>10 cm	204	51	15	141	30	10

*Data unknown for 5 patients.

Conclusion: The combination of re-irradiation and hyperthermia results in high response rates despite extensive disease and resistance to previous treatments. Early referral is needed to achieve long term locoregional control. Currently a randomized phase 2 study of RT-HT versus RT-HT and CisDiamineDichloroPlatinum is performed to further improve results.

459

Poster discussion

Pre-operative CT Scan in Breast Conserving Therapy for Determination of the Boost Volume for Radiotherapy

A. Holtmaat¹, M.B. van den Assem¹, J. Visser¹, H.M. Zonderland², G. van Tienhoven¹, K.F. Crama¹, N. Bijker¹. ¹Academisch Medisch Centrum, Radiotherapie, Amsterdam, The Netherlands; ²Academisch Medisch Centrum, Radiologie, Amsterdam, The Netherlands

Background: There is a large interobserver variation of the boost volume delineation on the post-operative (post-op) radiotherapy planning CT scan. The aim of this study was to investigate whether a pre-operative (pre-op) contrast enhanced CT scan (CE-CT) can improve the accuracy of the boost volume delineation.

Material and Methods: Twenty patients with early breast cancer, planned for breast conserving surgery (BCS), underwent a pre-op CE-CT. After BCS a post-op radiotherapy CT scan was made in the same position.

A radiation oncologist and two physician assistants delineated the boost volume on the post-op CT scan (BVpost) without knowledge of the pre-op CE-CT. Minimally one month later the delineation was repeated (BVpre) after matching the pre-op CE-CT with the post-op CT on bony anatomy.

A radiologist delineated the tumour on the pre-op CE-CT, to assess tumour visibility.

Breast contour changes were analyzed.

All delineated boost volumes were measured, the average of BVpre and of BVpost was calculated.

The conformity index (CI = overlapping volume/encompassing volume) was calculated for both BVpre and BVpost, for each patient and for each observer pair (interobserver).

The center of mass distance (COMD) between BVpre and BVpost was calculated for each patient, and each observer pair.

Results: There was agreement on tumour visibility and location between all 4 observers in 19 of 20 patients on the pre-op CE-CT. These 19 patients were analyzed.

In 3 patients the projection of the tumour on the post-op CT scan was partly outside the body contour, due to contour change after surgery.

The mean BVpre (34.7 cc) and BVpost (37.6 cc) were not significantly different.

The interobserver CI showed a significant (p = 0.03) increase from 0.59 to 0.68 when the pre-op CE-CT was used. A significant (p = 0.01) decrease