than other subclasses; and gene signatures based in estrogen-related genes or proliferation are better to identify this BC subclass. Cheang et al genetically evaluated 144 luminal ER-positive HER2-negative tumours by IHC; they found a ki67 cutoff value of 13.25% to differentiate B from A subclasses. No differentiation for PR status was done.
Luminal B subgroup is usually defined as ki67 >13 if ER positive, as well as HER2+ or PR negative. The target of this abstract is to evaluate behavior of different Luminal B subsets.
Materials and Methods: We reviewed early BC cases evaluated at Hospital 12 de Octubre between 1995 and 2007 and selected 710 initially operated Luminal B BC. We divided this group in 4 subsets as shown in table 1 and analyzed their clinical- pathologic features and outcomes. Additionally, we evaluated the prognostic behavior of lowering the ki67 cutoff in the ER+PR+HER2− group (820 pts).
Results: Median Ki67 value for the ER+PR− group was 17%. ki67 cutoff at 14% discerns two groups of different prognosis inside the Luminal group (extracting HER2+ and RP−); and comparison of ki67 cutoff between 14 vs 11% found overlapped CI (Median: 6.31 (5.99–6.62) vs 6.49 (6.21–6.78). The table presents different characteristics and prognosis based on molecular features (statistical comparisons exclude ER−PR+ subgroup).

Variables	HER2+ER+	HER2−		
		ER+PR−	ER−PR+	ER+PR+ ki67 > 13
Cases	189	126	10	385
Ductal (p = 0.002)	173 (91.5%)	98 (77.8%)	10 (100%)	314 (81.5%)
III (p = 0.03)	41%	47%	40%	34.1%
Lobular	5.3%	17.5%	0	14%
Median age (p = 0.0021)	53.49	60.29	49.68	57.7
Median ER	85%	83%	0%	90%
Median PR	60%	0%	45%	80%
Median ki67	20%	17%	12.5%	20%
DFS (p = 0.001)	8.21	6.55	9.40	5.67
OS	8.7	7.22	10.53	6.4
Recurrences total (%)	52 (27.5%)	32 (25.4%)	2 (20%)	81 (21%)
LocoRegional	9 (17.3%)	3 (9.4%)	0	15 (18.5%)
Bone	6 (11.5%)	14 (43.8%)	0	25 (30.9%)
Visceral (p = 0.04)	34 (65.4%)	11 (34.4%)	0	36 (44.4%)

Conclusions: Exclusion of ER+/PR−/HER2− subgroup from the Cheang study could have led to a reduction in mean Ki 67 level as the recommended cutoff value. Subsets inside Luminal B subclass according to HER2, ER, PR and ki67 have different features and behaviors. Luminal Ki67 cutoff should be evaluated excluding RP− group.

5114 POSTER

Clinical and Histopathological Tumour Characteristics in Patients With Invasive Breast Carcinoma Receiving Metformin

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Background and Aims: Epidemiological studies show that metformin treatment is associated with a reduction in cancer risk. Metformin may exhibit inhibitory effects on cancer cells by inhibiting mTOR signaling pathway. Therefore, it is possible that metformin has also an impact on tumour extension and progression in breast carcinoma (BC) patients. The aim of our retrospective study was to examine if the patients with BC and diabetes mellitus (DM) receiving metformin have lower tumour stage in comparison to patients not receiving metformin.
Patients and Methods: A chart review of 171 patients (mean age 67.4; range 38−93 years) with invasive BC and DM was performed. They were surgically treated at our institute from 2006–2010. Data on clinical and histopathology factors (age, BMI, tumour diameter, TNM tumour stage, number of metastatic lymph nodes, presence of estrogen and progesterone receptors, HER-2 status) were collected. Statistical analysis of these factors (i.e. comparison of metformin group vs. no metformin group) was performed by contingence tables and non-parametric tests.
Results: DM type 1 and DM type 2 was present in 38 and 133 cases, respectively. Altogether 91 patients (mean age 66.3; range 51−88 years) were on metformin, while 80 (mean age 68.6; range 38−93 years) were not receiving metformin. Patients on metformin were younger than patients not receiving metformin ($p < 0.05$). No statistical difference between the study groups (metformin vs. no metformin) were found in TNM stage (T1: 47% vs. 42.5%; T2: 38% vs. 27.5%; T3: 4% vs. 6%; T4: 10% vs. 24%, p = 0.071; N0: 58% vs. 49%, N1 42% vs. 51%, p = 0.21; M0: 97% vs. 97.5%, M1 3% vs. 2.5%, respectively). However, patients on metformin had lower proportion of T3 or T4 tumours than patients who were not receiving metformin (14% vs. 30%; p = 0.013). Axillary lymphadenectomy was performed in patients on metformin and in patients not receiving metformin in 46% and 62% (p = 0.039), respectively. Tumour size (2.5 cm vs. 2.8 cm; p = 0.36), tumour histology, tumour grade, mean number of metastatic lymph nodes (2.4 vs. 2.7; p = 0.23), hormone receptor status or HER-2 status did not show any statistical difference between both study groups.
Conclusion: Our patients with BC and DM on metformin have lower proportion of T3 or T4 tumours in comparison to patients not receiving metformin.

5115 POSTER

Neo-adjuvant Chemotherapy in Breast Cancer; the Possibility of Response Evaluation and Prediction of Response Treatment Using the Internal Mammary Vessels on MR Mammography

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Background: From a previous study in our institute is known that the vascular surfaces of internal mammary artery (IMA) and internal mammary veins (IMV) relate to the the breast with cancer compared to the contralateral side. This difference was not observed in healthy controls. This study investigates the possibility whether the surface of the internal mammary vessels on MR mammography performed on a 1.5T MRI allows evaluation of the effects of neo-adjuvant chemotherapy on the tumour mass and predictions response in breast cancer patients.
Materials and Methods: Eight patients whom received neo-adjuvant chemotherapy underwent a MR mammography before, after 3 and after 6 chemotherapy cycles. Measurements were made on a transverse T2w sequence (scanning parameters: slice thickness 1 mm, field-of-view $280 \times 338 \times 190$ mm, matrix 352). Surface of both the IMA and IMV was determined on the side of the tumour and contralateral, particularly on the second and third intercostal space. The reader was blinded for all clinical data. Differences in vessel surface between the three MR mammography were analyzed using a linear mixed model.
Results: Mean tumour size was 5.6 cm (2.1−9.3) before starting neo-adjuvant chemotherapy. After 6 chemotherapy cycles mean tumour size was 2.1 cm (0.0−4.5). The surface of the IMA and IMV decreases in the present of tumours responding to neo-adjuvant chemotherapy. Probably because of the size of the study population a trend but no significant relation exists (p = 0.245). Furthermore the data suggest a delay in vessel surface decrease compared to the decrease of tumour size.
Conclusion: These data suggests a relation between decreasing tumour and decreasing vascular surface as response on chemotherapy. Future research is warranted to proof whether the vascular surface could be a supplementary parameter in the assessment of the response evaluation and prediction of response treatment on MR mammography.

5116 POSTER

Evidence of No Benefit for Extensive Axillary Dissection in Lymph Node-positive Early Breast Cancer Treated With Adjuvant Radiation

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Background: Axillary dissection (AD) in breast cancer (BC) has extensively demonstrated no survival benefit over sentinel node dissection when no ganglionar involvement is found. Recently, a randomized phase III trial (The American College of Surgeons Oncology Group Z0011) found similar results when sentinel node was positive in a sample of 891 T1-T2 BC patients (pN1-N2 in most of the cases) that complemented treatment with adjuvant radiation and standard systemic drugs. Some critics were that the sample size was not the initially planned and that results of this trial changes both oncologists mental paradigms and treatment of a large group of BC patients.
The target of this abstract is to test in a retrospective way the usefulness of extensive AD in a population similar to Z0011 trial.
Materials and Methods: We reviewed BC cases diagnosed at Hospital 12 de Octubre between 1995 and 2007 and selected 337 initially operated T 1−2 N1−2 patients that received adjuvant radiation and standard systemic treatment. We evaluated if number extracted lymph nodes (over or under the median; or in the upper or lower tertile) had a prognostic value.
Results: Median follow up was 7.85 y. Median extracted lymph nodes was 14 and the mean disease free survival (DFS) under or over it were 7.02