11 courses of intravenous antibiotics, 24 courses of oral antibiotics and 115 inpatient days. The primary recommendation of this audit was to include primary prophylaxis with G-CSF in the FEC-D protocol.

The second audit identified 146 patients, their median age was 49. Primary prophylaxis was administered in 98% of cases. There were 17 episodes of FN, resulting in a FN rate of 11.6%. All of these cases had received prophylactic G-CSF. These episodes resulted in a total of 11 courses of intravenous antibiotics, 8 courses of oral antibiotics and 24 hospital admission days.

Conclusions: Near universal administration of primary G-CSF during FEC-D has been achieved resulting in a clear reduction in FN rate. Hospital admission days have also substantially reduced suggesting a possible financial benefit in addition to an improved patient experience.

References

[1] Ali Z, O'Reilly S, Zahoor T, Scholfield P, Malik Z. Experience of Febrile Neutropenia and secondary G-CSF Prophylaxis During FEC_D Chemotherapy in Merseyside and Chseshire Cancer Network. National Cancer Research Institute Cancer Conference 2008; Abstract B67

Friday, 23 March 2012 12:45–14:00

POSTER SESSION

Ductal and Lobular Carcinoma in Situ

450 Poster discussion

Is There a Different Prognosis Between Infiltrative Carcinoma of the Breast and Infiltrative Recurrences After Ductal Carcinoma in Situ of the Breast?

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Background: Local recurrence after breast-conserving treatment of Ductal Carcinoma In Situ (DCIS) occurs at around 8−20% and half of these local recurrences are invasive carcinoma.

The aim of this study was to compare the prognosis of these invasive recurrences after DCIS with prognosis after treatment of carcinomas that are invasive at diagnosis.

Material and Methods: From 1971 to 2003, we treated 1592 DCIS and 14450 invasive carcinomas (IC) at our institution. Overall, 111 recurrences were observed for DCIS patients, 61 (55%) of which were invasive (IR). We created two groups; the first based on all cases of IR and the second consisting of 2 IC matched to each IR on 3 criteria: age +/− 3 years, period of treatment (+/− 1 year) and cTNM. We compared survival outcomes between the two groups at 5 and 10 years after treatment and investigated prognostic differences.

Results: Clinical characteristics in terms of tumour grade, number of nodes affected and metastatic rates were similar across both groups. Clinical characteristics were similar in both groups as shown in Table 1.

Table 1. cTNM regarding each group

	T0	T1	T2	T3	T4	TX	N0	N>0	M+
IR, n = 61	34.4%	39.3%	13.1%	0.0%	1.6%	11.5%	72.1%	27.9%	13.1%
IC, n = 122	31.1%	41.8%	13.1%	0.8%	13.1%	0.0%	69.7%	29.5%	13.1%

Differences were observed in the types of treatment offered across groups: IR were more often treated by mastectomy (47.5% vs. 9.8%) and less frequently by radiotherapy than in the IC group (15% vs. 40% respectively). Chemotherapy was more systematically performed in the IC group than in the IR group (35.2% vs. 17%, p = 0.008).

There were no differences between overall survival rates across groups at 5 and 10 years (86.8% and 77.4% in the IR group vs. 89.7% and 76.6% in the IC group, p = 0.627).

Conclusions: Our results indicate that despite differences in treatment, such as twice the rate of chemotherapy for carcinoma that are invasive at diagnosis compared to invasive carcinoma occurring as recurrence after DCIS, both of these types of invasive carcinoma have the same outcomes in terms of survival.

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Underestimation Rate of Invasive Malignancy in Atypical Lobular Hyperplasia (ALH) and Lobular in Situ Carcinoma (LCIS)

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Background: The management of atypical lobular hyperplasia (ALH) and lobular in situ carcinoma (LCIS)discovered on breast biopsies is still controversial.

Some authors do not recommend surgical excision, and up to one third of the patients in the literature undergo radiological follow up.

The aim of this study was to assess the risk of invasive malignancy when ALH and LCIS are diagnosed on breast biopsy.

Methods: All cases of ALH and LCIS diagnosed by percutaneous biopsy at Saint-Louis hospital, (Paris, France), between January 2000 and January 2011 were identified from the computerized database of pathological reports.

Patients' characteristics, clinical, radiological patterns and subsequent management and outcome were collected from medical records.

Cases with an invasive lesion coexisting with ALH and LCIS and patients with missing pathological data after biopsy were excluded from the study.

Results: One hundred and seven pathological reports were identified, and 87 medical records were available for analysis, (ALH, n = 45, LCIS n = 46).

69 lesions were diagnosed by vacuum assisted biopsy (79.3%) and 18 by core needle biopsy (20.7%).

67 lesions (77%) (ALH n = 25 LCIS n = 42) were further managed by excision, either by lumpectomy (n = 53, 79%) or by mastectomy (n = 14, 21%). An invasive cancer (4 lobular, 3 ductal and 1 undetermined) was found in 8 of the 67 excision-based specimens, leading to an under-estimation rate of the biopsy of 11.9% for excised specimens (14.3% for CLIS and 8% for ALH).

Five patients were lost to follow-up. After a mean follow-up of 39 months, 2 additional ipsilateral (3.2%) and 3 controlateral (4.8%) invasive cancers were diagnosed.

20 lesions were managed by observation (ALH=18 and LCIS=2). After a mean follow-up of 40 months, 3 ipsilateral (15%) and 2 controlateral (10%) invasive malignancies were diagnosed.

Conclusion: Given the significant rate of under-estimation of invasive malignancy, we recommend to excise both atypical lobular hyperplasia and lobular in situ carcinoma when discovered on core biopsies.

Predictive factors of under-estimation should be investigated and validated before this attitude can give way to radiological follow-up.

Despite surgery, the risk of cancer remains high. The early diagnosis after biopsy suggests that multifocal or bilateral lesions pre-existed and that a meticulous local assessment is necessary.

MRI could be a useful tool regarding this issue.

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Development and Validation of Nomogram to Predict Postoperative Invasive Component in Ductal Carcinoma in Situ at Core Needle Biopsy

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Background: This study was to develop and validate nomogram to predict underestimation of DCIS at breast core needle biopsy.

Material and Methods: We developed a nomogram using previous reported meta-analysis study about DCIS underestimation. The factors related DCIS underestimation was palpability (OR = 3.87), size more than 2 cm (OR = 2.28), mammographic mass (OR = 1.83), 14 g automated vs. 11 g vacuum assisted (OR = 1.85), histological high grade (OR = 1.79). We developed web-based nomogram using a linear regression model with intercept calibration. To validate the nomogram, we used a retrospective data from January 2003 to September 2011. The accuracy of the nomogram was validated by comparing expected value with observed value assuming Poisson distribution and Hosmer-Lemeshow test. The discrimination was validated by ROC curve analysis.

Results: The developed nomogram was posted at the website (http://user.dankook.ac.kr/~surgery/dcis/dcis-dku.htm). In the total sixty cases of DCIS cases diagnosed by core needle biopsy, twenty-nine cases (48.3%) were finally confirmed to have invasive component. The expected number of underestimation was not significantly different to the observed number according to the related factors. Also, the expected number was not significantly different to the observed number by the Hosmer-Lemeshow

test. In the ROC curve analysis, the AUC was 0.823 (95% CI 0.720–0.926, p < 0.001).

Conclusions: We developed and validated a web-based nomogram to predict post-operative invasive component in pre-operative DCIS in core biopsy. This tool will be helpful about decision to do a sentinel node biopsy in first operation of DCIS in core biopsy.

453 Poster

Comparison of Clinicopathologic Features of Invasive Lobular Carcinoma of the Breast with or Without Associated Lobular Carcinoma In-situ

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Background: In breast cancer, invasive ductal carcinoma (IDC) with co-existing ductal carcinoma in-situ may be characterized by clinicopathologic and immunohistochemical features distinct from pure IDC, suggesting different biology and carcinogenesis. On the other hand, invasive lobular carcinoma (ILC) is believed to arise through linear histological progression, via lobular carcinoma in situ (LCIS), and ILC with concomitant LCIS (ILC-LCIS). However, comparison of pure ILC versus ILC-LCIS has not been reported.

Material and Methods: We analyzed a consecutive cohort of ILC patients undergoing upfront surgery in a tertiary referral center in Hong Kong between August 2001 and August 2011. Clinicopathologic features and immunohistochemical expression profiles of pure ILC were compared against those of the invasive component of ILC-LCIS, adjusting for invasive tumor size.

Results: A total of 144 patients were included in the analysis. All were female; median age was 50 (range 34−82). ILC-LCIS was associated with a smaller tumor size than pure ILC (p = 0.004). After adjusting for invasive tumor size, there was no statistically significant difference between pure ILC and ILC-LCIS, in terms of tumor grade (p = 0.600), lymphovascular infiltration (p = 0.831), lymph node status (p = 0.332), and expression profile of ER (p = 0.457), PR (p = 0.290), HER2 (p = 0.137) and Ki67 (p = 0.831).

Conclusion: Clinicopathologic features and immunohistochemical expression profiles were similar in size-adjusted pure ILC and ILC-LCIS. This supports the hypothesized linear model of carcinogenesis in ILC.

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Long-term Survival of Women with Carcinoma in Situ in Relation to HMG-CoA Reductase Expression

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Introduction: The rate-limiting enzyme in the mevalonate pathway, 3-hydroxy-3-methylglutharyl-coenzyme A reductase (HMG-CoAR) was recently identified in invasive breast cancer demonstrating a prognostic value, and, in tamoxifen treated patients, even a predictive value. Moreover, HMG-CoAR is the target for cholesterol lowering therapy with statins, and thus being a potential predictive marker for statin therapy in e.g. early breast cancer. Consequently, the expression and the prognostic value of HMG-CoAR should be evaluated in DCIS in parallel to former HMG-CoAR studies on invasive breast cancer.

Aim: The aim of this study was to examine the protein expression of HMG-CoAR in DCIS in relation to established pathological parameters and long-term survival data in a cohort of 458 DCIS patients.

Methods: The population-based cohort for this study, include women diagnosed with a primary DCIS between 1986 and 2004. Cytoplasmic staining of HMG-CoAR was assessed according to the staining intensity in the cytoplasm (negative, weak, moderate, strong) using tissue micro-arrays. The patients were followed until April 2008 and events were recorded as local /contralateral/general recurrence and death. For statistical analysis the Cox regression proportional hazards models were used to estimate the impact of HMG-CoAR expression on recurrence free survival (RFS) and overall survival (OS) in both uni- and multivariate analysis, adjusted for potential confounders.

Preliminary Results: In contradiction to invasive breast cancer, HMG-CoAR expression in DCIS was not statistically correlated to other tumor-specific characteristics (estrogen receptor, progesterone receptor, and HER2 status). Preliminary survival data with follow-up until April 2008 demonstrated 76 events of local recurrence (42 cases with in situ and 34 cases with invasive recurrence). Current data showed no statistical significant prognostic value with regard to HMG-CoAR. Updated results based on survival data with follow-up until October 2011 will be presented.

Discussion: Interestingly, this study on HMG-CoAR in DCIS could not demonstrate the prognostic value previously described in invasive breast cancer indicating differences in tumor biology. However, the number of events are currently few due to limited follw-up time, motivating the ongoing studies on recent survival data. If the preliminary results are confirmed, the potential differences in HMG-CoAR should be taken into considerations in future studies on statin therapy as preventional therapy.

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Postoperative Upstaging and Sentinel Lymph Node Metastasis in Patients with Ductal Carcinoma in Situ Diagnosed by Needle Biopsy

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Background: There is discordance between diagnosis of ductal carcinoma in situ(DCIS) by needle biopsy and postoperative pathological findings. The role of sentinel lymph node biopsy(SLNB) in patients with DCIS by needle biopsy is still controversial.

Material and Methods: We retrospectively analyzed 129 patients diagnosed with DCIS by needle biopsy who underwent surgery and SLNB in our institution from April 2007 to September 2011.

Results: Forty two (32.6%) of 129 patients were diagnosed with invasive cancer after operation. In univariate analysis, existence of ultrasonographic lesion, density on mammography (MMG), distortion on MMG, absence of microcalcification on MMG were correlated with postoperative upstaging. Nuclear grade, comedo necrosis and size of lesion on magnetic resonance imaging were not associated with the risk of upstaging. In multivariate analysis, ultrasonographic lesion was significant predictive factor of invasion(odds ratio (OR), 3.084; p = 0.016). All patients received SLNB procedure but sentinel lymph node (SLN) was not detected in one case. Five of 128 (3.9%) patients had positive SLNs and all of them had invasive component in their primary lesions. In univariate analysis, density on MMG (OR, 12.966; p = 0.005) and microcalcification on MMG (OR, 0.153; p = 0.024) were significantly associated with the risk of SLN metastasis. Four (12.1%) of 33 patients with density on MMG and 3(13.0%) of 23 patients without microcalcification had positive SLNs.

Conclusion: Postoperative upstaging in patients with initial diagnosis of DCIS was significantly correlated with the existence of ultrasonographic lesion. SLN metastasis was associated with density on MMG and absence of microcalcification on MMG. SLNB should be considered in patients with DCIS who have these predictive factors of invasive cancer.

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Open Controversies and Guidelines of the European Institute of Oncology (IEO, Milan) On the Management of Ductal Intraepithelial Neoplasia (DIN)

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Background: DIN is the new acronym (corresponding to ductal intraepithelial neoplasia) that replaces the traditional definition of ductal carcinoma in situ (DCIS) of the breast. Its incidence has increased in the last years, mainly due to the widespread use of mammography screening. Some aspect of DIN management are still controversial due to the heterogeneity of its clinical presentation and of its biological and pathological characteristics. The aim of this study is to describe not only the more widespread theoretical concepts on DIN but also the differences in the practical applications of the theory between different countries, different oncology specialists and different cancer centres.

Material and Methods: We analyzed papers related to the international multicentric-randomized trials and retrospective studies published in literature between 1993 and 2010; abstracts and reports from MEDLINE and other sources were identified. Our guidelines for surgery, radiotherapy (RT) and for sistemic treatment are based on the analysis of 4.350 DIN