and good tolerability. Preclinical and clinical data show that withdrawal of VEGFR inhibitors may be associated with a rapid tumor growth. We therefore conducted a retrospective analysis in patients who had discontinued trial treatment for progression of disease (PD) and who received a new treatment, in order to evaluate time to progression (TTP), progression free survival (PFS) and overall survival (OS) to the subsequent therapy.
Patients and Methods: Of the 46 patients enrolled in the phase II trial, 44 discontinued trial treatment: 41 for PD, 1 for an adverse event and 2 for personal decision. Two patients are still receiving trial treatment. Thirty-nine patients received a new therapy after progression: chemotherapy and hormonotherapy in 23 (59%) and 9 (23%) respectively, 3 (8%) received both and 4 (10%) were not evaluable. One patient had a rapid progression of disease and died and one was lost to follow up.
Results: Thirty of the 35 (85.7%) evaluable patients had a PD. Median TTP was 106 days, as compared to 229 days after treatment with bevacizumab. PFS at 6 months was 31% (95% CI: 16−46). Sixteen patients died with a median survival of 323 days, and a 6 months OS of 85% (95% CI: 67−93). We evaluated the correlation between serum PDGF-RB, Ve-CAD and circulating endothelial cells, measured at PD after bevacizumab, with TTP and OS: patients with levels of these markers lower than the median value achieved a significantly better TTP and OS with the subsequent treatment.
Conclusions: Though the mechanisms of resistance to bevacizumab are not well defined it is possible that resistance to bevacizumab results in relative resistance to subsequent therapies. Alternatively, rebound increases in VEGF on discontinuation of bevacizumab could result in a more aggressive disease. Much remains to be learned about biologic agents, in particular new trials need to establish whether these therapies should be continued at PD.

5095 POSTER

Elevated circulating estradiol levels are associated with a less aggressive tumour phenotype in postmenopausal breast cancer patients

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Background: It is difficult to correlate circulating hormone levels in premenopausal breast cancer patients with the biology of the tumors, due to physiological fluctuations in menstruating women. This difficulty is overcome in postmenopausal patients, since in them sex hormone levels tend to be constant over time.
Materials and Methods: Circulating hormone levels were measured in 161 previously untreated postmenopausal breast cancer patients within 72 hours of their planned surgery. The obtained hormone levels were correlated with tumor size, histological and nuclear grade, axillary nodal status, DNA-ploidy and Ki67-, c-erb-B2-, p53, Bax-, VEGF- and Nup88-expression.
Results: The only statistically significant correlations found between circulating hormone levels and all tested variables were an inverse one between estradiol and the expression of the apoptosis-associated *Bax* gene ($p = 0.009$), and again an inverse correlation between estradiol and the expression of c-erb-B2 ($p = 0.04$). When comparing hormone levels with each other, a significant correlation between estradiol and progesterone ($p < 0.0001$), an inverse one between estradiol and FSH ($p = 0.04$) and a direct one between LH and prolactin ($p = 0.001$) were found.
Conclusion: Although higher circulating estradiol levels have been repeatedly correlated with an elevated incidence of breast cancer, it appears that in postmenopausal breast cancer patients the tumors thus induced show a biologically less aggressive phenotype.

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The discordance between hormonal receptor status and c-erb b2 in primary and metastatic breast cancer

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Background: Metastatic breast cancer is one of the most common cause of death from cancer in women. the choice of the best treatment for breast cancer depends on several factors including the patient's age, performance status, menopausal status, as well as tumor size, tumor grade, lymph node involvement, hormonal receptor status, and c-erb b2 status.
The aim of this study was to determine the discordance between hormonal receptor status and c-erbb2 status in primary and metastatic breast cancer.
Materials and Methods: 38 patients with primary breast cancer who developed metastases on follow-up were enrolled into the study. the estrogen receptor (er), progesterone receptor (pr) and c-erb b2 status of the metastases were determined immunohistochemically and compared with the primary breast cancer. Positive hormone receptor status was defined as >5% immunohistochemical staining of tumor cells. c-erbb2 positivity was defined by cytoplasmic membrane staining of 2+ or 3+ intensity. 2+ intensity was assessed by fish or sish techniques.
Results: Variation of er status between primary and metastatic breast cancer was determined in 12 of the 38 (31%) patients and, variation of pr status was shown in 18 of the 38 (47%) patients. 6 cerb b2 negative primary breast cancer became immunohistochemical 3+ in metastatic cancer during follow up.
Conclusions: c erb b2 status is important in the management of metastatic breast cancer. the biological behaviour of primary breast cancer can vary in its metastases. in these metastases, a repeat biopsy may show the new features of the tumor. c erb b2-positive patients should be treated with trastuzumab-based therapy if no contraindications.

5097 POSTER

Poor response to systemic chemotherapy in metaplastic carcinoma of breast

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Background: Metaplastic carcinoma of the breast cancer (MCB) is a rare subtype of breast cancer, for which only anecdotal reports are available regarding its response to systemic chemotherapy.
Aim: To characterize chemotherapy response of MCB patients in a retrospective single-institute study.
Method: We retrospectively reviewed the records of the MCB patients diagnosed at National Taiwan University Hospital (NTUH) between Jan. 1988 and Aug. 2008. The patient-tumor characteristics, treatment modalities, treatment effect, and survival were studied.
Results: 39 MCB patients were identified from 7352 breast tumor patients undergoing biopsy or operation at NTUH. Initial bulky disease (T3−4) was found in 23 patients (56.4%). Expression of estrogen receptor and progesterone receptor were 10.2% and 20.5%, respectively. Nine patients (23.1%) underwent neoadjuvant chemotherapybefore surgery. The regimens included cyclophosphamide/epirubicin/fluorouracil, paclitaxel/cisplatin, vinorelbine/fluorouracil/leucovorin, capecitabine, docetaxel/capecitabine/cisplatin, and docetaxel/epirubicin/cyclophosphamide. Eight of them (89%) experienced disease progression. The response in one patient was not evaluable. Twelve MCB patients (30.8%) developed metastatic disease as initial presentation or during follow-up after primary treatment. Among them, 10 patients received chemotherapy. Only 2 patients (20%) had partial response, all the other 8 patients (80%) had progressive disease. All of the patients with metastatic diseases died of their diseases (3 year survival = 0%). The median survival after metastasis was only 11.3 months (range: 2.73−34.9 months).
Conclusion: MCB had poor response to systemic chemotherapy, either in neoadjuvant setting for locally advanced disease or in salvage setting for metastatic disease.
Key words: Metaplastic carcinoma, neoadjuvant chemotherapy, salvage chemotherapy

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Clinical outcomes and breast cancer subtypes in patients with brain metastases

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Background: Breast cancer is the second most common cause of brain metastasis. The aim of this study was to investigate clinical outcome by breast cancer subtypes in patients with brain metastases.
Materials and Methods: The authors retrospectively evaluated clinical data from 66 patients who had been diagnosed with breast cancer and brain metastasis between 2000 and 2009. Estrogen receptor (ER), progesterone receptor (PR), and human epidermal growth receptor-2 (HER2) statuses were tested by immunohistochemical staining. Four survival time intervals were compared according to the subtype (luminal, HER2+, triple negative (TN)): initial diagnosis to distant metastases, distant metastasis to brain metastasis, brain metastasis to death, and overall diagnosis to death.