from Group1 (for all $p < 0.001$). Group 2 did not differ from Group 3 ($p = 0.61$). Both BRCA1 ($n = 49$) and BRCA2 ($n = 51$) mutation carriers from the combined Group 2 and 3 ($n = 100$) demonstrated higher serum TK1 activity than healthy women from Group 1 (for all $p < 0.001$). There was no difference in TK1 activity between BRCA1 and BRCA2 mutation carriers ($p = 0.57$). Higher TK1 activity was found in BC patients with BRCA1/2 mutation from Group 5, compared to those without the mutation from Group 4 ($p = 0.002$). The area under the TK1 ROC curve ($\pm$ standard error) in the model considering Group 1 vs. combined Group 2 and 3 was 0.73 ± 0.03. The optimal cut-off value corresponded to 30 Du/L of TK1 activity and supplied a sensitivity of 63.3% and specificity of 77.5% for identifying BRCA1/2 mutation carriers.
Conclusions: BRCA1/2 mutation carriage is significantly associated with elevated serum TK1 activity both in healthy women and in patients with breast cancer.

1463 POSTER

CA19-9 in Combination With Abdominal CT Scan for Diagnosis of Mass-forming Intrahepatic Cholangiocarcinoma

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Background: Cholangiocarcinoma (CCA) is one of the most important cancer in Thailand. The diagnosis of CCA with pathology is widely accepted. Unfortunately, tissue diagnosis of mass-forming intrahepatic cholangiocarcinoma is difficult to perform according to tumour site, risk of procedure and accessibility. The aims of this study are assessing the diagnostic utility of CA19-9 for mass-forming cholangiocarcinoma in combination with CT scan of the liver.
Methods: The medical records of patients with the diagnosis of cholangiocarcinoma (CCA) and hepatocellular carcinoma (HCC) during January 2005 to December 2009 were reviewed. Each case was checked for pathology and CT scan report performed at Maharaj Nakorn Chiang Mai Hospital and excluded each case with either report from other hospitals. Demographic data, clinical manifestation, laboratory results including CA19-9 and CT scan of the liver were carefully examined in order to established the diagnostic utility in mass-forming CCA without pathological diagnosis.
Results: 79 CCA patients and 66 HCC patients were included in CA19-9 cut off levels analysis. 31 CCA patients and 44 HCC patients were included in CT scan characteristics evaluation and scoring according to Chiang Mai CT score for CCA. Chaing Mai CT score for CCA consists of 3 features which are thin/thick rim enhancement at periphery on arterial phase, capsular retraction and dilated bile duct peripheral to tumour giving score 1, 4, and 2 respectively. The specificity of CA19-9 value 500 U/mL in diagnosing CCA was 95.5% with sensitivity 50.6%, PPV 91.8% and likelihood ratio of positive(LR+) 11.24. The CT score greater than 2 demonstrates PPV of more than 90% in diagnosis of CCA. The CA19-9 level of 140 U/mL in combination with CT score 2 demonstrated LR+ as high as 57.09.
Conclusion: CA19-9 level combined with Chiang Mai CT score for CCA are good diagnostic tool for diagnosis of mass-forming cholangiocarcinoma with high specificity, high positive predictive value and high likelihood ratio of positive.

1464 POSTER

Comparison of HER-2 and Hormone Receptor (HR) Status Between Primary Breast Cancer and Corresponding Distant Metastatic Sites With Double Check Assessment

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Background: Although the vast majority of breast cancer carcinoma maintains the same biological features at relapse, recent studies suggested that some lesions may have a change in HER2 and HR status during tumour progression. As such, it may be advisable to biopsy metastatic disease for optimal treatment planning.
Aim: To compare HER2 and HR status of metastatic breast cancer with those of the original tumour with simultaneously double check assessment to reduce analytical procedures errors.
Methods: From 2008 to 2010, 118 patients with biopsy proven relapses were identified. HER-2 analysis was performed in both primary and metastasis material. Results were interpreted as hercepTest® guideline's. Discordant cases were evaluated by fluorescence *in situ* hybridization (FISH) too. ER and PR were also screened by IHC analyses.
Results: 118 primary breast cancer tumours and their corresponding distant metastasis were analyzed. Among paired primary/metastatic tumours, we found 13 discordant cases, 8 in ER or PR, 4 in HER 2 showed discordance by IHQ and FISH and1 case in both parameters.
Results are summarized in Table 1.

Table 1: Discordant cases with double check assessment

Primary tumour	ER	PR	HER2	Metastatic site	ER	PR	HER2
1	+	+	0	cervical node	+	−	0
2	+	+	0	Pleura	+	−	0
3	+	+	0	Lung	+	−	0
4	+	+	0	Pleura	−	−	0
5	+	+	0	Ovary	−	+	0
6	+	+	0	peritoneum	−	−	0
7	+	−	0	Bone	+	+	0
8	+	+	0	Skin	−	−	0
9	−	−	1+	Supraclavicular node	−	−	2+
10	+	+	1+	Supraclavicular node	+	+	3+
11	+	+	2+	Liver	+	+	0
12	+	−	0	Liver	−	−	3+
13	+	−	3+	Bone	−	−	0

Conclusions: 13/118 (11%) of relapsed tumours had changes in HER2 or ER or PR status. with double check evaluation The tendency showed a lost in HR and a gain in HER 2 positivity This study suggests that biopsies of relapsed/metastatic breast cancers should be performed, in concordance with largest series recommendations previously published.

Oral Presentations (Mon, 26 Sep, 14:45−16:25)
Radiotherapy

2000 ORAL

Prognostic Value of Metabolic Response Assessed by 18F-FDG PET During Radiotherapy for Cervix and Head and Neck Carcinoma

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Background: Sequential FDG-PET/CT performed during the course of radiotherapy has been poorly explored and may be an early surrogate of patient outcome. The aim of this study was to analyze metabolic changes during radiotherapy at 40 Gy and its prognostic impact in cervix and head and neck cancer (HNC) patients (pts).
Materials and Methods: This prospective study included 2 populations:
a. HNC: 22 pts. Stages were: II (23%), III (27%) and IV (50%). Primitive tumour sites were: 11 oropharynx, 5 hypopharynx, 1 cavum and 6 larynx. Treatment was: external beam radiation therapy (EBRT) (70 Gy) with concurrent cetuximab.
b. Cervical cancer: 35 pts. FIGO stages were: IB2: 4, IIA: 5, IIB: 11, IIIA: 2, IIIB: 1, IV: 2. Treatment was: EBRT (46 Gy) with concurrent chemotherapy (Cisplatinum), followed by brachytherapy $\pm$ Surgery.

All pts were evaluated by FDG PET: before treatment (PET1), during EBRT at 40 Gy (PET2), and after the end of RT (PET3). Following FDG-PET parameters were analyzed: maximal standardized uptake value (SUVmax) and metabolic tumour volume (MTV). MTV was segmented: by fixed threshold of all voxels >2.5 of SUV for HNC and by a threshold of 40% of SUVmax for cervix cancer. The predictive values of these parameters (as continuous variable or with cut-off values defined by ROC analysis) were searched (Cox model and log rank) for disease free survival (DFS).
Results: Median follow-up was 15 months (3−31) in HNC and 17 months (3−36) in cervix cancer. The 2-year DFS rates were: 53% and 72%, for HNC and cervix cancer, respectively.
– **At PET1**: no metabolic parameter was significant on DFS.
– **At PET2**: SUVmax and MTV were correlated with DFS in univariate analysis ($p < 0.05$) for cervix and HNC. SUVmax >8 for HNC decreased DFS (RR = 3.1, 95% CI: 0.9–10.5, $p = 0.05$). SUVmax >6.3 for cervix cancer (mean value of SUVmax at PET 2) decreased DFS ($p = 0.01$).