fluorescence and chromogenic in situ hybridisation and immunohistochemistry.
Results: We observed that at the genetic level, lesions from the same patient displayed remarkably similar patterns of genetic aberrations (Spearman's correlations 0.55−0.89; $p < 0.00001$). All CLLs, low grade DCIS, LN and their matching invasive carcinoma harboured gain/amplification of 1q31−32 and loss of 16q12, 16q21 and 16q23. In addition to the aberrations found in CCLs, in situ and matching invasive components displayed additional genetic aberrations at 16 p13.3, 13q34, 20q13.33, 11q13.1-q14.1, 17q25.3, 19 p13.3, 7 p22.2, 8q24.3, 9q34.3, 14q32.33, 5 p15.33 and 10q25.3 and losses on 10q22, 8 p, 11q24−25, 15q11.2, 17 p11.2, 9 p11.2 and Xq. Amplification of cyclin D1 was detected by CISH in ILCs and their matching LN and FEA lesions.
Conclusion: Our results provide strong circumstantial evidence to suggest that CCLs are the earliest morphologically identifiable non-obligate precursors of more advanced lesions in the LNGBN family and that that loss of 16q and gain 1q are the earliest genetic changes in this family of lesions that lead to the activation of the 'luminal' pathway.

5176 POSTER

Can we use age-dependent changes of enzymes activity in benign disease as poor prognostic factors?

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Background: Mastopathy – benign disease of a breast, developed by a hyperplasia (by pathological growth) of a tissue gland. Risk factors for breast cancer are age, hormones level modification of the females and benign disease, such as mastopathy. It is known the direct interaction between metabolism of thymidine – precursor of DNA and rate of proliferation processes. Thus, as marker of proliferation was choosed any enzymes of thymidine exchange – thymidine kinase (TK) and thymidine phosphorylase (TP). Moreover TK correspond to the index of cellular proliferation.
The aim – to compare activity of TK and TP in blood serum of healthy women, patients with mastopathy and breast cancer from I to IV stages.
Materials and Methods: Blood serum of healthy persons, patients with mastopathy and patients with cancer of mammary gland. Age of surveyed groups 40−60 years. The activity of TK was defined by radioisotop method, TP – spectrophotometrically.

Table. TK and TP activity healthy women and women with pathology

Diagnosis	Healthy women	Mastopathy	Breast cancer			
			$T_1N_0M_0$	$T_2N_0M_0$	$T_3N_1M_0$	$T_4N_2M_x$
	n = 16	n = 32	n = 17	n = 22	n = 52	n = 39
Thymidine kinase (nMol/mg*h)	3.14±0.55	3.58±0.29	3.82±0.01	3.98±0.03	4.28±0.28	4.94±0.14
Thymidine phosphorilase (nMol/mg*h)	23.76±2.30	17.82±2.0	19.80±0.66	18.48±1.01	15.18±1.98	9.90±0.70

$p < 0.05$

Results: In comparison with healthy group (table), the level of TP activity was reduced at mastopathy. Upon $T_1N_0M_0$ the activity is TP is lower than normal (like mastopathy), but TK activity was enhanced that can be responsible for some increase in DNA biosynthesis in case of such pathology. The obtained dates about the increase of TK activity and decrease of TP activity at a mammary gland cancer according to a stage of cancer. This shift (simultaneously increasing of TK and decreasing of TP) indicates about more intensively proceeding processes of a proliferation at tumour pathology.
Conclusions: Thus, a similar metabolic displacement during mastopathy and breast cancer may be one of the endogenous factors of malignancy. The biochemical test of determination of TK and TP activity in blood serum of patients with mastopathy, we propose to use in early diagnostic of breast cancer.

5177 POSTER

Intraoperative ultrasound guided occult lesion localization in early stage breast cancer surgery

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Objective: Different methods are used in detecting non-palpable breast lesions. We present our experience in intraoperative ultrasound guided occult lesion localization in early breast cancer surgery.
Methods: Retrospective analysis of clinical, surgical, pathological and oncological data on 168 patients with non-palpable breast cancer lesions treated in University Surgical Hospital Split, Croatia, within five years time period. 88 (52%) patients had their lesions preoperatively labelled with blue-dye or hook wire, and intraoperative ultrasound hand-held probe was used in localizing occult breast lesion in other 80 (48%) patients. Definitive surgical and adjuvant treatment was carried out due to pathological findings.
Results: All the patients had their non-palpable breast lesion detected and surgically removed under local or general anesthesia. Tissue specimen obtained using intraoeprative hand-held ultrasound probe was easier to localize and surgically assessed. In the same time such tissue specimen was much more accurate to temporary and definitive pathological findings. Operative time was shortened using intraoperative US but without statistically singnificance. There were no intraoperative or postoperative complications due to detection method used.
Conclusions: Intraoperative ultrasound guided breast surgery allows detecting of occult early breast cancer lesions with high accuracy and safety.

5178 POSTER

Is mammographic breast density a breast cancer risk factor in women with BRCA mutations?

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Background: Increased mammographic breast density is well-recognized as a breast cancer risk factor in the general population. However, it is unclear whether it is a risk factor in women with *BRCA* mutations. We present the results of a correlative study investigating the relationship between breast density and breast cancer incidence in women with *BRCA* mutations.
Methods: The study population consisted of women ages 25 to 65 with *BRCA1* or *BRCA2* mutations enrolled in a single-centre high-risk breast cancer screening trial of annual breast mammography, MRI, and ultrasound, and semiannual clinical breast examination. Using a computer-aided technique (Cumulus), quantitative percentage density (PD) was measured for each participant on her first study mammogram by a single investigator blinded to the clinical outcome. For women with prior breast cancer, the contralateral breast was used for density measurement.
Results: Between 11/97 and 03/08, 462 women (mean age at first study mammogram = 44; 245 with *BRCA1* mutations and 217 with *BRCA2* mutations) were screened and 50 breast cancers were diagnosed (33 invasive ductal, 1 invasive lobular, 1 microinvasive, 3 DCIS with microinvasion, 12 DCIS only). Density was not measured in 40 women of whom 4 developed cancer (2 invasive ductal, 1 invasive lobular, 1 DCIS) because the baseline mammogram could not be digitized or located. Mean PD (± SD) for the 376 women who did not develop breast cancer was 34% (23) compared to 31% (21) for 46 women who developed cancer ($p = 0.51$, two-sample Wilcoxon rank sum test). Logistic regression model of breast cancer incidence and PD revealed an odds ratio of 0.99 (± 0.01) for a 1-unit increase in PD ($p = 0.44$).
Age-adjusted odds ratio for a 1-unit increase in PD was 1.00 (±0.01, $p = 0.83$). Results were similar when *BRCA1* and *BRCA2* mutation carriers were analyzed separately, as well as when women who developed DCIS without invasion were excluded from the analysis.
Conclusions: Increased mammographic breast density is not associated with higher breast cancer incidence in women with *BRCA* mutations. Therefore, breast density should not be considered a factor for these women in decision-making regarding prophylactic surgery or chemoprevention.

5179 POSTER

"Competition on Clinical Mass Spectrometry Based Proteomic Diagnosis" based on serum protein profiling for the detection of breast cancer

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Background: Detection of breast cancer at early stage can increase a patient's five-year disease-free survival rate. Mammography is currently the gold standard for screening purposes. This method is non-invasive and highly specific but low sensitivities have been reported. Especially for younger women with a familial or genetic predisposition mammography