were pure DCIS. The majority showed high grade (64.2% and 69.7% respectively) disease. Lymphovascular invasion was present in 34% and 45% had nodal involvement. 67.4 %, 54.8 % and 27.3% were oestrogen (ER), progesterone (PR) and human epidermal growth factor receptor-2 (HER−2) positive respectively. Adjuvant chemotherapy was administered in 63.5 % of surgically treated patients. Statistically significant univariate factors adversely associated with overall survival were nodal positivity, tumour recurrence, ER negativity and high tumour grade (p < 0.05). 94.3% (132/140) were alive at a median follow up of 29 months (range 7−70 months) and 90.9% (120/132) remained disease-free.

Conclusion: Increased duration of symptoms and T staging at presentation were not found to be significantly associated with an adverse prognosis. Our study suggests factors related to an aggressive tumour biology are predictive of a poor outcome even at a relatively short follow-up period. MRI is useful in pre-operative planning.

59   Poster

The Effects of Daily Living Activity Levels On Prognosis in Elderly Patients with Breast Cancer

O. Uysal Sonmez[1], U. Yalçintas Arslan[1], K. Helvaci[1], I. Turker[1], U. Uyeturk[1], B. Budakoglu[1], O. Bal[1], A.S. Ekinci[1], O. Esbah[1], B. Oksuzoglu[1]. [1]Dr. Abdurrahman Yurtaslan Onkoloji Egitim Hastanesi, Medical Oncology, Ankara, Turkey

Background: The aim of this study was to evaluate the patient characteristics of elderly breast cancer patients and effect of treatment schedules and functional capacities on survival.

Material and Methods: Between 1999–2011, medical records of 137 women older than 65 years diagnosed with non-metastatic breast carcinoma were evaluated retrospectively. Basic Activities of DailyLiving Scale (BADL) and Instrumental Activities of Daily Living Scale (IADL) were administered by the patient oncologist. Patients were grouped according to BADL and IADL results as dependent, hemi-dependent and independent.

Results: Median age of the patients was 71 years(range: 65−91). Median follow up period for whole study group was 28 (range:6–141) months. Common histologic type was invasive ductal karsinoma (88.3%). Estrogen receptor and progesteron receptor cerb-B2 were positive in 75.5%, 64.5% and 30.4% respectively. 78 (56.9%) patients were axillary lymph node positive. 96 (70.1%) patients was given adjuvant chemotherapy(mostly anthracycline). 22 patients received trastuzumab and 95 patients received adjuvant hormonotherapy.BADL assesments indicated that independent(ID), hemidependent(HD) and dependent(D) patients were 106 (77.4%), 28(20.4%) and 3(2.2%) respectively. IADL assesments resulted that ID, HD and D patients were 63 (43.4%), 53 (39.3%) and 19 (14.1%) respectively. As a result of BADL assesments disease free(DFS) and overall survival(OS) was better in ID patients than HD and D ones (p = .001 and p = .002 respectively).As a result of IADL assesments DFS was better in ID patients (p = 0.031) than HD and D ones. There was also a trend for better OS in ID group than HD and D groups (p = .089).There was no difference between age groups (less than or older than median 71 years) in terms of OS. Kaplan-Meier survival analysis estimated that 5 year OS was 90.7% and 76.1% and 60.4% in ID, HD and D patients respectively.Triple negative phenotype and stage at diagnosis were related with poor survival (p = 0.023 ve p = 0.016,respectively). In multiple regression analysis, stage at diagnosis, triple negative phenotype and BADL subgroup were significant [p = 0.008, HR: 3.17(CI: 1.35–7.44), p = 0.027, HR:2.78 (CI:1.172–6.91) and p = 0.006 HR:0.29 (CI:0.12–0.70) respectively].

Conclusion: In elderly breast carcinoma patients, daily living activity levels are as important as subgroup of breast cancer or stage and to determine the probability of overall survival can be useful for selecting the most appropriate adjuvant treatment options.

60   Poster

Outcome of Young Patients with Breast Cancer Outside of Clinical Trials

N. El Saghir[1], H. Assi[1], S. Jaber[1], Z. Nachef[1], H. Mikdashi[1], N. El-Asmar[1], M. Houjeij[2], G. Abi Saad[2], F. Jamali[2], J. Abbas[2]. [1]American University of Beirut, Internal Medicine, Beirut, Lebanon; [2]American University of Beirut, General Surgery, Beirut, Lebanon

Background: Age is a bad prognostic factor for patients with breast cancer. Young patients tend to have more aggressive tumors and worse survival. Statistics of outcome outside of clinical trials provides real life data.

Patients and Methods: Patients diagnosed and treated uniformly for breast cancer at a single academic practice at the American University of Beirut Medical center were studied. Patients' demographics, clinical characteristics and survival were collected. We combined data from two retrospective studies looking at patients diagnosed between 1997–2007

and 2004–2010. Studies were approved by IRB. Data was entered and analyzed on SPSS program. Survival was estimated using Kaplan–Meier Method.

Results: The total number of patients analyzed was 531. Patients were divided in three groups: ⩽35, between 35 and 50, and ⩾ 50 years. All patients had multimodality therapy including breast conserving therapy or mastectomy, radiation therapy, adjuvant chemotherapy, targeted therapy, and hormonal therapy as per stage, pathology and receptor status, according to international respective guidelines. Survival was estimated for the three age groups and stages at diagnosis and results are presented in the inserted table.

	Number of cases			5-year Overall Survival		
Stage	Age⩽35	Age 35−50	Age⩾50	Age⩽35	Age 35−50	Age⩾50
I & II	22	162	162	76.6%	94.7%	92.2%
III	13	70	69	83.9%	73.5%	63.5%
IV	1	14	18	0%	55.4%	32.1%

Five-year Overall Survival of very young patients (⩽35 years) with stage I was 100% and Stage II was 71.4%. Combined overall survival for Early Breast Cancer stages I and II was 76.6% for patients ⩽35 years versus 92.2% for patients ⩾50 years, with a significant p-value 0.044.

Conclusions: Outcome of patients treated outside of clinical trials in our series shows that very young patients (⩽35 years) with early breast cancer have a worse 5-year survival than patients ⩾50 years of age.

Wednesday, 21 March 2012   **12:00–13:15**

POSTER SESSION
Diagnosis and Imaging

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61   Poster discussion

Functionalized and Structured Medical Wire as a Device for In-vivo Isolation of Circulating Tumor Cells in Breast Cancer Patients

P. Nowaczyk[1], S. Herold[2], P.S. Kim[3], A. Schmitz[4], K. Polom[1], P. Murawa[1], N.G. Morgenthaler[2], M. Zabel[5], K. Luecke[2], D. Murawa[1]. [1]Wielkopolska Cancer Centre, 1st Clinic of Surgical Oncology and General Surgery, Poznan, Poland; [2]GILUPI GmbH, Potsdam, Germany; [3]Prometheus Therapeutics & Diagnostics, San Diego, USA; [4]Bayer HealthCare, Berlin, Germany; [5]Poznan University of Medical Science, Department of Histology and Embrology, Poznan, Poland

Background: In breast cancer (BC) circulating tumor cells (CTCs) can provide information on patient prognosis and treatment efficacy. Also they can serve as a source for biomarkers to improve the treatment course. Currently CTCs are mostly isolated *in vitro* from small volumes of patient blood samples which is limited in volume. The aim of the study was to assess the functionalized and structured medical wire (FSMW) for *in vivo* isolation of CTCs directly from the blood of BC patients.

Material and Methods: We enumerated CTCs in 42 stage I-IV BC patients. CTCs were detected by utilization of FSMW, which was inserted in a patient's cubital region vein for thirty minutes. The interaction of target CTCs with the FSMW was mediated by an antibody directed against the epithelial cell adhesion molecule (EpCAM). To confirm the CTCs binding to the wire the immunohistochemical staining against EpCAM as well as against CD45 for negative cell selection was performed. There were 54 applications of the wire, 30 single applications and 12 double applications for evaluation of the wire precision. Clinical results from 37 subjects with 49 wire applications (5 failed down streaming analysis) were assessed. The detection rate of the FSMW for 23 patients was compared with FDA-approved Cell Search analysis.

Results: Global FSMW sensitivity for *in vivo* isolation of CTCs in BC patients was 89.7 % vs. 19% with Cell Search. The sensitivity for early and non-early stage BC was 91,7 % and 82,3 %, respectively. The median (range) of isolated EpCAM-positive CTCs was 5 (0–515) for FSMW and 0 (0−10) for Cell Search. In 100% of paired samples the number of CTCs detected with the FSMW was higher than or equal to the Cell Search method, regardless of the disease stage. Linear regression of the data of the double application of the FSMW showed a very good concordance ($r^2 = 0.97$, p < 0.0001).

Conclusions: The CTCs detection rate in BC patients with the FSMW is >4 times higher than the Cell Search analysis (especially for early stages of BC). Double application of the device in the same patient indicates very

good precision. The implementation of FSMW into clinical practice may improve early detection, prognosis and therapy monitoring of BC patients. The method may also allow the molecular analysis of the captured cells, with the possibility of establishing more personalized treatment regiments.

62   Poster

Comparison of Axillary Nodal Status Between Clinical, PET Scan and Pathological Staging in Breast Cancer

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Background: Axillary lymph node dissection in breast cancer patients poses significant morbidity. Even though sentinel lymph node can determine the earliest metastases and guide in avoiding axillary dissection, still it is an invasive procedure. We have studied the sensitivity and specificity of PET scan in determining the axillary nodal metastases.

Materials and Methods: All breast cancer patients non metastatic at presentation were evaluated. Patients who found to have distant metastases/supraclavicular nodes during workup were excluded. Over a period of one year 45 patients without any distant metastases at presentation were worked up with 18-FDG PET scan. Those who had distant metastases or N3 disease were excluded. The clinical axillary nodal status was then compared with PET scan status of the axillary nodes. All the 45 patients then underwent modified radical mastectomy and axillary nodal clearance from level I–III. Standard histipathological examination was carried out in all the patients and this pathological N status was compared with clinical and PET scan results.

Results: The above results were then analyzed with Bayesian statistical analyzer. The sensitivity and specificity of clinical examination alone in detecting pathological nodes was 54% and 74% respectively whereas that with PET scan was 83% and 82%respectively.Two of the false positive PET patients were with h/o autoimmune disease.

PET and Path. N status

PET SCAN	pN +	Pn−	Total
Positive	19	4	23
Negative	4	18	22
Total	23	22	45

Conclusion: 18-FDG PET scan has high sensitivity and specificity in detecting pathological axillary nodes compared to clinical examination alone. Future studies comparing sentinel lymphnodes and PET scan are required to find their exact specificity. Results in patients with autoimmune disorders have to be interpreted with caution.

63   Poster

Breast Lesion Excision System for Diagnosis of Suspicious Non-palpable Breast Lesions: Does Thermal Tissue Damage Affect Diagnosis and Outcome?

W. Al-harethee[1], I. Papapanagiotou[1], V. Kalles[1], M. Matiatou[1], G. Georgeiou[1], A. Nonni[2], P. Liakou[1], G. Theodoropoulos[1], G.C. Zografos[1]. [1]Hippocrateion Hospital Athens Medical School, Breast Unit 1st Department of Propaedeutic Surgery, Athens, Greece; [2]School of Medicine University of Athens, Department of Pathology Athens, Athens, Greece

Background: The Breast Lesion Excision System ® (BLES) is an image-guided percutaneous biopsy device that utilizes radiofrequency in order to retrieve an intact, suspicious, non-palpable breast tissue specimen for pathologic diagnosis. An acceptable size of thermal artifact varies between 0.1 mm and 1 mm. The purpose of this study is to determine the effects of radiofrequency on the specimen tissue analysis due to thermal damage.

Materials and Methods: This prospective clinical study included 226 consecutive patients with suspicious, non-palpable mammographic lesions (BIRADS ⩾ 4) that underwent 234 stereotactic, vacuum assisted breast biopsy procedures from June 2008 to December 2010 at Breast Unit, Hippocrateion Hospital of Athens with the use of BLES. Inclusion criteria consisted of suspicious breast lesions and in particular microcalcifications, solid lesions and radial scars. In order to retrieve an intact biopsy specimen, a 12 mm, 15 mm or 20 mm tissue basket was used, depending on the size of the lesion. The biopsy in all cases was performed under local anesthesia by the same team. According to the pathology report, we classified thermal damage in 3 categories: severe (recognition of malignant cells but inability to make definite diagnosis due to thermal damage), medium (ability to make diagnosis but either circumferential thermal damage >2 mm or diffuse areas

of thermal damage) and mild (circumferential thermal damage 1−2 mm). The follow up period for all patients was 6 months.

Results: The procedure was considered successful in all cases with mammographic (specimen and patient) confirmation of proper excision. In three cases the basket initially failed to deploy and a second basket had to be utilized in order to complete the biopsy. Thermal damage of the specimen occurred in 12 cases (3.59%). The damage was severe in 4 specimens (3 benign, 1 IDC), medium in 4 specimens (4 benign) and mild in 4 specimens (3 benign, 1 IDC). Among the patients with severe specimen damage, those with benign lesions were followed up at 6 months, and the patient with IDC received appropriate surgical treatment. Among the patients with medium specimen damage, those with benign lesions were typically followed up at 6 months. The patients with mild thermal damage and benign diagnosis were also followed up at 6 months, and the patient with IDC received appropriate surgical treatment.

Conclusions: In summary, although thermal damage is of concern during breast biopsy with the use of BLES, the incidence is very low. Even severe cases of thermal damage do not seem to affect the outcome of the pathology report. When medium or severe thermal damage occurs, patients with lesions diagnosed as benign should be followed up closely, although repeating the biopsy with alternative methods (e.g. open biopsy) should also be considered, in case of any clinical suspicion.

64   Poster

An Innovation in Breast Cancer Care in Ottawa, Canada: the Evaluation and Validation of a Rapid Diagnostic and Support Clinic for Women Assessment for Breast Cancer

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Background: The diagnostic phase of care is an extremely anxiety-provoking and stressful experience for the potential breast cancer patient and her family. Early detection and treatment are the best options for improving outcomes in breast cancer. A multidisciplinary team of breast cancer specialists in a regional referral center embarked on a new initiative to improve breast care by setting up a *Rapid Diagnosis and Support (RADS) Clinic* to coordinate the diagnostic imaging workup, needle biopsy and pathological diagnosis for women with suspicious initial diagnostic mammogram findings. A prospective study was performed to evaluate the effectiveness this innovative service delivery model aimed wait times, decreasing the fragmentation of care and enhancing a patient's overall breast care experience.

Methods: Consecutive patients with initial diagnostic mammograms classified as BIRADS 5 were invited to participate in the study. Interventions in the model included prioritizing biopsy appointments, initiating followup diagnostic imaging, providing support and coordination of care by a nurse navigator. Wait times (measured in business days) were evaluated at three different intervals; from a) diagnostic imaging to biopsy b) biopsy to pathology report verification, and c) diagnostic imaging to MRI. Patient satisfaction surveys were completed. All data post intervention were compared to historical data at our breast center. Statistical analysis was performed with paired and Wilcoxon t test analysis.

Results: A total of 88 BIRADS 5 patients consented to the study between March and Sept 2011. Eighty-two (93%) patients had either invasive carcinoma or DCIS that necessitated surgery. All wait times significantly improved after initiation of the RADS Clinic. Biopsy wait times improved from a mean of 6 to 2 days (p < 0.0001); pathology verification from 4 to 3 days (p = 0.03); and MRI wait times from 9 to 7 days (p = 0.017). Eighty-five (97%) patients rated the care and support they received from RADS clinic as 'excellent' or 'very good', and 97% of patients felt completely satisfied that they were cared for in a timely manner.

Conclusion: The Rapid Access and Diagnostic Clinic significantly improved diagnostic wait times and overall experience for patients with a highly probable diagnosis of breast cancer and can serve as an innovative service delivery model for other breast care centers.

65   Poster

Trends in and Pattern of Breast Diseases Diagnosed by Core Needle Biopsy − an 8-years Experience of a Breast Unit

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Background: With advances in imaging techniques, percutaneous core needle biopsy (CNB) has become the standard of care in the diagnosis