breast cancers (log rank test, $P = 0.016$), but the Cox proportional hazard model failed to confirm that MGBA was an independent prognostic factor (hazard ratio 1.77, $P = 0.1755$).

**Conclusion:** Out results suggest that MGB A is a sensitive marker of breast carcinoma, is a useful method to detect breast cancer micro-metastases. It may characterize a subgroup of breast carcinoma patients with less aggressive forms of tumour and better prognosis, if assessed for a prolonged follow up duration in future studies.

**56** Poster

**Breast Cancer Among Young Women in Mures, Romania − a 5-year Retrospective Study Emphasizing the Role of New Therapeutical Strategies**

M.D. Podeanu[1], R. Georgescu[2], C. Marian[3], C.A. Treaba[1], T. Bara[4], S. Stolnicu[3]. *[1]Emergency Clinical County Hospital Mures, Radiology and Imaging, Tg. Mures, Romania; [2]Clinical County Hospital Mures, Surgery, Tg. Mures, Romania; [3]Emergency Clinical County Hospital Mures, Pathology, Tg. Mures, Romania; [4]Emergency Clinical County Hospital Mures, Surgery, Tg. Mures, Romania*

**Background:** to assess the frequency, the imaging features and prognostic factors in young female patients with breast carcinoma in order to establish new therapeutic strategies.

**Materials and Methods:** We retrospectively reviewed 112 cases of breast cancer in young women (⩽45 years) admitted to the Emergency Clinical District Hospital Mures between October 2006 and October 2011. The collected data were: age, clinical, imaging, surgical, histopathologic and immunohistochemical (hormone receptors status, ki 67 and HER2-neu) reports in order to evaluate important prognostic parameters and to assess the response to therapy.

**Results:** Among 1663 women with breast lesions 949 (57.06%) had breast cancer. Young women (⩽45 years) with breast cancer were 112 (11.80%), out of which those ⩽35 years were 21 (18.75%). Autopalpation/ clinical examination of women ⩽45 years revealed the presence of tumor in 95 (84.82%) cases, out of which 59 (53.20%) had axillary adenopathies. In the ⩽35 years age group, 15 (71.42%) had palpable tumor on presentation, 12 (57.14%) with axillary adenopathies. Out of the 86 (76.78%) mammographically examined patients, 55 (63.95%) with invasive carcinomas had spiculated/irregular opacities, 20 (23.25%) architectural distortion associated with a mass and 26 (30.23%) associated calcifications. On ultrasonography, a majority of 105 (93.75%) lesions displayed spiculated/irregular masses. 50.47% lesions had 2−4 cm in dimension at the time of diagnosis. In 77 (68.75%) cases tumoral type was invasive ductal NOS (IDC-NOS), mostly grade 2 and 3 (71 cases − 92.20%), especially in women ⩽35 years − 16 cases (76.19%). Most invasive carcinomas were unifocal − 67 (63.80%) versus multifocal 38 (36.19%). Ductal carcinoma in situ was foud in 7 cases − 6.25%, more frequently grade 3, mostly in the 36−40 years-old age group (5 cases − 71.42%). Histologically, 62 patients ⩽45 years (55.35%) had axillary lymph node metastases with a higher frequency in multifocal/multicentric (60.52%) carcinomas.

**Conclusions:** Our results indicated a higher frequency of breast cancer in young women ⩽45 years, especially in those ⩽35 years, than in previous decades, a result that overpasses data from literature (5−7%). Most young patients discovered the tumor by autopalpation, with measurements over 2 cm in diameter at the time of diagnosis and associated axillary lymph node metastases. Tumor type was most often grade 2 or 3 NOS. It seems that breast tumors in young patients have a different morphological and immunohistochemical aspect and are associated with a different prognostic, which is why therapeutic strategies must be adapted according to this. Acknowledgements: This paper is partially supported by the Sectoral Operational Programme Human Resources Development, financed from the European Social Fund and by the Romanian Government under the contract number POSDRU/89/1.5/S/60782.

**57** Poster

**Triple Negative Breast Cancer in Young Patients − Experience of the National Institute of Oncology in Morocco**

G. Rais[1], S. Raissouni[1], H. Mouzount[1], H. Mrabti[1], H. Errihani[1]. *[1]Institut National D'Oncologie Rabat, Medical Oncology, Rabat, Morocco*

**Background:** Triple-negative breast cancer (TNBC) is defined as a group of breast carcinomas that are negative for expression of hormone receptors and HER2, They tend to have a higher grade, with a poorer outcome compared to non-TN breast cancers. TNBC are associated generally with a younger age at presentation. There is a dearth of data in a younger population of patients with TNBC regarding epidemiology, prognosis, and outcome.

**Objective:** The primary aim of this analysis of young TNBC patients was to characterize the clinical features of this distinct young population of patients. We selected the age of 35 years and under as the cut-off point in defining our patient population of interest.

**Materials and Methods:** A retrospective analysis of patients referred to the national institute of oncology with TNBC, identified from the institutional tumor registry, who were ⩽ 35 years on the date of the diagnostic biopsy, between January 2007 and February 2009, was performed. Epidemiological, clinical and pathological staging, therapeutic and follow-up data were extracted.

**Results:** Twenty seven cases of TNBC, with age ⩽35 years at diagnosis, were collected. This represented 17.7 % of the entire population (N = 152) of TNBC seen at the national institute of oncology over that time period. The mean age was 31.3 years (25−35 years). Four patients (14.8%) had a family history of breast cancer. Nineteen patients (70.3%) had nursing antecedents and six patients (22%) reported use of oral contraceptives. Twenty two (81.4%)had infiltrating ductal carcinoma and five had medullar carcinoma (18.5%). Twenty three cases (85%) were grade III Scarff-Bloom-Richardson (SBR) and 4 patients (14.8%) were grade II.

Two patients (7%) had metastatic disease (stage IV) at first diagnosis, one patient (8%) had stage I, 17 patients (63%) had stage II and the remaining patients 7(25%) had stage III.

For treatment modalities 25 patients underwent surgery (radical mastectomy in 70% of cases and 30% had conservative surgery).

Neoadjuvant chemotherapy was administered to 8 patients and adjuvant chemotherapy to 86. All patients received anthracycline based regimen and only 29.6% received taxanes. Radiotherapy was administered to 85% of patients. Metastatic patients at diagnosis progressed after first line chemotherapy and then died.

Six (22.2%) patients had a distant failure after adjuvant treatment and one local recurrence. The median follow-up time was 36,3 months (range 2–84.8 months). At the end of the study period, 7 patients (26%) died.

**Conclusion:** This is the first reported study, in our context, of young patients with TNBC ⩽ 35 years of age. TNBC in young patient were associated with high grade tumors, advanced stage at diagnosis (92% ⩾stage II), and short time to relapse. These data suggested that patients with younger age seem to have a severe prognosis. No risk factors have been identified. However this study is retrospective and more studies are needed in this young population.

**58** Poster

**Presentation and Outcomes of Breast Cancer in Asian Women Under 40: Misdiagnosis or Misfortune?**

E. Chuwa[1], S.Y. Teo[2], Y.L. Lew[1], C.L. Ong[2], G.S. Hong[1]. *[1]KK Women's and Children's Hospital, Breast Department, Singapore, Singapore; [2]KK Women's and Children's Hospital, Department of Diagnostic Imaging, Singapore, Singapore*

**Background:** There are few studies examining breast cancer in women under 40, particularly in Asian women. While it has been reported that only 5.5−7% of all breast cancers are detected in women under 40 in the West, this group of women accounts for at least 12−15% in Asian populations. It has been reported that the poorer prognosis seen in this group of women is contributed by delays at diagnosis and aggressive tumour biology. This study seeks to understand clinicopathologic factors that correlate with treatment outcomes in this unscreened group of women.

**Methods:** A retrospective institutional board-approved review of our center's breast cancer database identified women diagnosed with breast cancer from January 2006 to February 2011. Patient demographics, clinical presentation patterns, imaging findings, pathological findings and treatment received were determined. Outcome end-points include disease recurrence and death.

**Results:** Of a total of 1160 women diagnosed with breast cancer during the study period, 150(12.9%) were under 40.The median age was 36 years (range 18−39 years). The majority (81%) presented with a self-detected lump and did not have a family history (84.2%). The median duration of symptoms before presentation was 4 weeks (range 1−96 weeks). Four women had metastatic disease at presentation (2.7%) and 6 (4%) defaulted treatment and follow-up after biopsy. These 10 women were excluded from further analysis. Five women (3.5%) had pregnancy-associated breast cancer with 4 being pregnant at the time of diagnosis. 2 women had synchronous bilateral breast cancer.

Mammography was less sensitive than ultrasound (77.1% Vs 94.5%) and MRI was helpful in demonstrating 60% of lesions not seen on mammography or ultrasound. 42/140 (30%) underwent breast conserving surgery (BCS) of which 5 (12%) proceeded to mastectomy due to involved margins. 98/140 (70%) underwent mastectomy of which 25/98 (25%) had immediate reconstruction. The median tumour size was 22 m (range 1.1-100 mm). 10% (14/140) received neoadjuvant chemotherapy. Of a total of 126 primary resections, 84 % were invasive carcinoma while 16 %

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

**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