

Results: Twenty (30.3%) of 66 patients were luminal, 20 (30.3%) were HER2+, and 26 (39.4%) were TN. Time interval from initial diagnosis to distant metastases of luminal, HER2+, and TN were 30.0, 17.0, and 17.9 months, respectively ($p=0.040$). Median time interval from distant metastasis to brain metastasis were 20.6, 19.5, and 9.0 months, respectively ($p=0.012$). Overall survival from diagnosis to death were 52.9, 33.6, and 25.5 months, respectively ($p=0.026$). However, Time from brain metastasis to death was not significantly different ($p=0.276$).

Conclusions: Patients with TN disease were more likely to develop distant metastasis earlier, and poor overall survival. Triple receptor status may be used as a prognostic marker for the breast cancer patients with brain metastasis.

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POSTER

Brain metastasis in advanced breast cancer: high risk in HER2 positive but not in triple negative patients

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Background: Central nervous system (CNS) metastasis occurs in about 20% of women with disseminated breast cancer. Triple negative (TN) patients (estrogen receptor (ER), progesterone receptor (PR), and HER2 negative) have a poor prognosis compared to the general breast cancer population, with an increased risk of recurrence, distant metastasis, and death. Also patients with HER2 pos tumors are known to have aggressive disease and several studies has reported a high incidence of cerebral metastasis among this group of patients. Our aim was to evaluate the incidence, pattern and timing of cerebral metastases among patients with advanced breast cancer and compare HER-2 pos patients with HER-2 neg patients including the TN patients.

Material and Methods: Two patient cohorts were examined. The first group consisted of 32 HER-2 pos patients diagnosed with advanced breast cancer and measurable disease, who entered a phase 2 study with 1. line Trastuzumab and weekly paclitaxel. Patients were included between Nov 2001 and Oct 2005. None of these patients had received adjuvant Herceptin. The second group consisted of 59 patients included within the same time period, with normal HER2 status and diagnosed with advanced breast cancer with the same inclusion criteria as above, except they were HER2 neg. (40 ER pos patients and 19 TN patients). They were randomized between first line docetaxel or docetaxel and gemcitabine in a 3 weekly schedule.

Results: All patients have now been followed to death. Eighteen of the 32 HER2 pos patients were diagnosed with cerebral metastases (0.56), compared to 12 patients in the ERpos group (0.30) and only 3 in the TN group (0.16). Median time to cerebral metastases from inclusion was 0.8 years (range 0.5–2.7) for HER2 pos patients. The brain metastases were seen earlier among patients with HER2 over-expression than among HER2 negative patients, though not significant.

Conclusion: Our study shows that HER2 over-expression increases the risk of cerebral metastases significantly as compared to patients without HER2 over-expression. TN patients although having poor prognosis, does not seem to have a high risk of brain metastases. Since more than half of the HER2 pos patients developed brain-metastases, close surveillance (clinical and/or imaging) seems necessary even during effective systemic treatment.

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POSTER

Survival of breast cancer patients with brain metastases

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Study objective:

- To study survival of breast cancer patients with brain metastases.
- To study predictive value of tumor size, lymph node involvement and hormone receptor status on the occurrence of brain metastases and survival of patients with breast cancer.

Materials and Methods: 805 patients were diagnosed with breast cancer between Jan. 2000 till June 2008 and registered in Oncology Department in Tripoli Medical Center. 44 (5.5%) patients were included in this study that developed brain metastases diagnosed by CAT scan or brain MRI.

Results: Mean age of these patients were 43.6 years. 72.7% were premenopausal. These patients had large tumor size on diagnosis T3+T4 76.7%. 81.5% were node positive. 72.7% were stage III and IV. 72.7% has negative hormone receptor status. (6/44) 37.5% had isolated brain metastases on presentation. (38/44) 86.4% had recurrence at median duration of 16.5 months. (26/38) 68.4% had brain metastases, out of these (14/26) 53.8% had only brain metastases and (12/26) 46% had brain and soft tissue or bone metastases. (12/38) 31.5% had only visceral metastases as first site of recurrence. (14/44) 31.8% presented as second relapse, with

only brain metastases in (10/14) 71.4% and (2/14) 14.3% with brain and soft tissue as liver and lung. All patients received cranial radiotherapy to metastases.

Median duration of survival from first recurrence was 5.8 months. Median duration of follow up was 24.5 months. 25% (11/44) are alive.

Conclusion: Patients with brain metastases are premenopausal and have large tumor size, more node positive, and negative estrogen receptor status.

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POSTER

Demographic clinical and pathologic features of breast cancer in males

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Introduction: Male breast cancer comprises 1% of breast cancer cases. The incidence is approximately 1/100.000 per year. Due to the rarity of the disease, the treatment choices are based on the female breast cancer data.

Aim: The study of demographic, clinical and histological characteristics of men with breast cancer that have been monitored, during the last decade, in our department.

Patients and Methods: Patient characteristics were extracted from their medical records and the breast cancer data bank of our department. The registered data concerned age, initial presentation, medical and family history, the histological features of the neoplasms and the TNM staging.

Results: Seventeen men with breast cancer were examined, with median age at diagnosis 65 years (53–79 years old). The initial presentation was a palpable lump in 7 patients, a retraction of the nipple in 3 patients, nipple discharge in 2 patients, scaling of the skin in 2 patients, sub-nipple lump in 2 and lumbar pain in one patient. According to the medical history information, 7 patients were smokers, one did alcohol abuse, 3 were overweight and 8 suffered from hypertension. Positive medical history for familiar or hereditary breast cancer had 3 (17.6%) patients. All tumours were ductal invasive carcinomas, nine of which (53%) exhibited moderate differentiation grade II and the rest, 8 (47%) low differentiation, grade III. Moreover, based on immunohistochemical analysis, 8 cases (47%) were triple negative ER(-) PR(-) HER-2(-), 7 (41%) were ER(+) PR(+) HER-2(-) and 2 (12%) ER(+) PR(-) HER-2(-). The stage of the disease in 7 cases (41%) was IIA, in 3 cases (18%) IIA, in 3 (18%) IIB, in 2 (12%) IV, in 1 (5.5%) IIB and in 1 case (5.5%) was stage I. The patients were treated accordingly with anthracyclines and taxanes based chemotherapy, radiotherapy and hormonal therapy (tamoxifen – aromatase inhibitors).

Conclusion: The study indicates that the male breast cancer cases were all HER-2 negative. All tumours were ductal invasive carcinomas and 47% were poorly differentiated. Most patients (53%) were positive for the expression of hormonal receptors while a relatively large percentage (47%) was triple negative.

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POSTER

Breast cancer brain metastases – significant differences in biological markers in early vs. late relapse

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Background: HER2 over-expression, negative steroid receptor status, and recently, triple negative status are recognized as factors contributing to the higher incidence of brain metastases (BM). It is also known that BM develops more frequently in young patients. However, it is not known whether these characteristics are the same in the primary breast cancer (BC) that develops early vs. late BM.

Materials and Methods: During 1 year period, 61 patients with BC BM were identified. Median time to BM is 24 months (0–252 months), and median time to BM after other metastatic sites is 24 months (0–252).

Pts were then divided in 2 subgroups: early BM relapse (BM < 5 yrs after BC) and late BM relapse (no relapse at all within 5 yrs and BM ≥ 5 yrs after BC).

Biological markers were analyzed only on the primary BC specimens.

Results: Results are presented in the table.

There is highly statistically significant difference regarding biological markers of primary BC: negative steroid receptors, HER2 over-expression, and triple negative status are more often in the early BM relapse vs. late BM relapse group ($p < 0.001$; $p = 0.032$; $p = 0.029$)

Brain meta. (BM)	No.	Med. age (Yrs)	DFI (months)	BM as 1 st relapse	ER/PGR Both score 0	HER2 3+	Triple negative
Whole group	61	47 (30–71)	Med. 24 (0–252)	34/61 (55.75)	27/61 (44%)	9/61 (14.7%)	12/61 (19.6%)
Early relapse (<5 yrs)	43/61 (70%)	47 (30–71)	Med. 20 (0–59)	22/43 (51%)	21/61 (34.2%)	8/61 (13.1%)	10/61 (16.4%)
Late relapse (>5 yrs)	18/61 (29.5%)	47.5 (35–63)	Med. 72 (60–252)	11/18 (61%)	6/61 (9.8%)	1/61 (1.6%)	2/61 (3.2%)
p	/	ns	/	ns	<0.001	0.032	0.029

Conclusion: Biological markers of primary BC significantly differ between early vs. late BM subgroup. Therefore, HER2 over-expression, negative steroid receptor and triple negative status are potential markers only for early but not for late BM relapse. These results contribute to the opinion that initial poor prognostic characteristics have limited value in late relapse prediction.

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POSTER

Spectrum of malignant breast masses in adolescent Indian girls: outcome of management at the breast unit of a teaching hospital

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Background: To evaluate the spectrum of malignant breast masses in adolescent Indian females and their management outcome.

Material and Methods: During a 6 year period from 2003 to 2008, 904 young females (12–19 yrs) were referred to the breast clinic with breast related complaints. Clinical and imaging evaluation confirmed the presence of breast masses in 540 females. After preliminary evaluation pathological analysis (FNAC, Core biopsy, excisional biopsy) was conducted on 394 patients. Patients with malignant breast masses were only included in the study. These patients were analyzed for their clinical presentation, duration of complaints, age, menarche, pregnancy status, family history, treatment and outcome.

Results: Out of 394 pathologically evaluated patients, 387 were benign and 7 were malignant cases. Mean age of study group was 15.5 yrs with mean age of menarche at 13 years. There was one pregnant patient and family history of breast cancer was positive in two patients. Average time from start of the symptoms to diagnosis was 10 months. Mean size of lump was 5.5 cm. Distribution of malignant masses was as follows: 1 Ductal carcinoma in situ (DCIS), 3 Carcinomas (1 inflammatory, 2 ductal) and 2 cases of malignant cystosarcoma phyllodes. There was 1 case of mediastinal Nonhodgkins lymphoma with secondary metastasis to breast. The most common clinical presentation was palpable mass (n = 5) followed by progressive increase in breast size (n = 2). Tumour staging in the study group was as follows: Stage IIA: n = 1, stage IIIB: n = 2 and stage IV: n = 2. Patients with malignant cystosarcoma had localized disease. Treatment was with a combination of surgery, chemotherapy and radiotherapy. At 34 months follow up in 3 patients (2: cystosarcoma phyllodes and 1: DCIS) all were alive. Subgroup analysis in rest showed that 12 month survival for stage 4 patients was zero, stage IIIB was 51% and for stage IIA was 81.7%.

Conclusion: Malignant breast masses in adolescent Indian population are rare (1.7%). In our set of population average time to diagnosis was 10 months and majority presented in an advanced stage (lump size >5 cm) making the prognosis ominous. Our experience highlights the need to develop educational awareness programmes to acquaint the significance of breast lumps in adolescent girls.

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POSTER

Clinical and pathological prognostic characteristic of breast cancer patients with brain metastases

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Successful improvement in breast cancer patient's treatment leads to life prolongation. This is connected with rising incidence of brain metastases (BM) which occurs in up to one third of patients with metastatic breast cancer. The aim of this study is to analyze clinical and pathological factors in patients with BM.

This is a retrospective review of 177 breast cancer patients with brain metastases, treated with brain radiotherapy between 2005–2007 at two Cancer Centers, Gliwice, Krakow.

Patient's age at the time of diagnosis ranged from 28 to 80 years, average 50 years. Patient's stages at the time of cancer diagnosis were: T₁₋₂ 38% T₃₋₄ 31%, N₀₋₁ 49%, N₂₋₃ 22%. Majority of patients were treated with radical intent 74%. Most of patients underwent radical mastectomy 68% or breast conserving therapy 6%. Ductal invasive carcinoma was the predominant histology accounts for 57%. Lymph nodes metastases were present in 40% of patients with median lymph nodes ratio 9%. Tumours were ER, PR receptor positive only in 28% and 27%, and only in 12% for ER and 7% for PR were highly positive. We were able to establish HER2 status in 42% of patients and in 19% HER2 was negative, and highly positive in 12%.

All patients were treated with radiotherapy, 15% underwent metastasectomy, 21% stereotactic irradiation, in combination with WBRT 15% or alone 6%. Median time from diagnosis to BM was 2.7 years (range 0–19), to distant relapse 2.1 or local relapse 1.6. Single BM was diagnosed in 22%, and multiple metastases in 26% of patients, remaining had 2–7 lesions. First metastatic site was brain 38%, lung 19%, bones 12%, liver 6%, multiple metastatic site 13%. Median time from treatment dissemination to brain relapse was 1.2 years (range 0.02–9.2). Median time to BM was longer in ER+ patients 3.4 years vs ER– patients 2.3. (p < 0.00001). Median time to BM was longer in HER2– patients 3.3 years vs HER2+ 2 years (p < 0.00001). Higher node ratio was also significant risk factor for faster BM (p < 0.00001). A median time to BM shortened with T stage and was 4.4, 3.1, 2.3 and 1.5 years for T₁–T₄ respectively and also shortened with N stage and was 3.7, 3.1, 1.5 and 1 for N₀–N₃. Patients with brain metastases as a first site had a shorter time to BM than patients with other primary sites (2.0 vs 3.4 years).

Advanced stages, ER–, PR–, HER2+ are related to higher risk of BM. Major cause of death was brain metastases, therefore further studies are needed for early BM patients selection.

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POSTER

Clinical and pathohistological characteristics of synchronous and metachronous bilateral breast cancer

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Background: The purpose of this study was to review the clinical and histopathologic (HP) characteristics of patients with bilateral synchronous and metachronous breast cancer.

Material and Methods: The data were analyzed for 49 BBC pts registered during two years at the Daily Hospital for Chemotherapy, Institute for Oncology and Radiology of Serbia. We defined synchronous bilateral breast cancer (SBBC) as cancer diagnosed in both breasts at the same time or within a 3 months-period of diagnosis of the first tumor and metachronous if diagnosed more than 3 months after first cancer. For HP analysis 74 breast specimens were available, 40 of synchronous and 35 of metachronous BBC.

Results: Out of a total of 49 pts, 51% (25 pts) suffered from synchronous and 49% (24 pts) from metachronous BBC. Median age at diagnosis was 59.6 in SBBC group. In MBBC group median age at first diagnosis was 52.5 and 60.2 for contralateral BC diagnosis, with the median period from first to second BC diagnosis 86 months. In the SBBC group 88% of pts were postmenopausal, compared to 63% in the MBBC group. A family history of breast cancer was more common in pts with MBBC (19%) than in pts with SBBC (7%). Initial metastases were more frequent in SBBC group, 36%, compared to 12.5% in MBBC. Only 4% of SBBC was manifested as inflammatory breast cancer (IBC), while in MBBC group 12.5% of first and 33% of second malignancy was diagnosed cancer mastitis. Negative nodal status at diagnosis was similar in groups, 33% of SBBC and 28% of MBBC. In a group of SBBC, 21 of 40 (52.5%) tumors were found to be ductal and 14 (35%) were lobular carcinoma. In a group of MBBC frequency of ductal and lobular carcinoma was the same, 15 of 35 (43%). Same HP results in both breasts were found in 79% of SBBC and 50% of MBBC. 73% of SBBC were hormone receptor positive, while in MBBC hormone receptor negative tumors were more common, 55%. In SBBC group 28% of pts without initial metastasis had a disease progression with a median DFI 28 months. In MBBC progression was detected in 37.5% pts with a median DFI 41 months.

Conclusion: Our study revealed that SBBC are more frequent in postmenopausal women, presented more often in stage IV as hormone receptor positive tumors with a same HP findings in both breasts. MBBC are more often presented as an IBC. BBC is an unusual clinical entity and because of its atypical and complex presentation patients with bilateral breast cancer require compound and individualized treatment.