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POSTER

Predictive risk factors for brain metastasis in breast cancer

A. Sezer¹, T. Sümül¹, F. Köse¹, C. Karadeniz¹, H. Mertsoylu¹, U. Disel¹, O. Özyılkan¹. ¹Baskent University, Faculty of Medicine, Medical Oncology, Adana, Turkey

Background: Breast cancer can metastasize to different organs during the early and late course of disease. Some prognostic factors are defined to be related with time and the localization of metastasis. Intracranial metastases are defined to be an important prognostic factor for patients with breast cancer. Cranial computerized tomography and magnetic resonance imaging are not routinely performed to the patients without any neurological symptoms.

In this study we aimed to investigate clinic pathologic factors that's associated with intracranial metastasis at initial diagnosis or during the course of disease

Material and Method: We retrospectively collected data's of breast cancer patients with brain metastases (n: 1570) who admitted to oncology centre between 1999–2005 years. Age, disease stage, menopausal status, hormonal status, histopathological findings and serum levels of tumor markers were analyzed. 31 cases (0.19%) had brain metastases. Median ages of the patients were 50 years (range, 47.2–56.7). 5 of the 31 patients initially presented with brain metastases (16 percent). 42 breast cancer patients without metastases were randomly selected as control group. P values less than ≤0.05 was considered statistically significant. Differences between dichotomous variables were tested with Chi-square test or Fisher's exact test.

Results: Results are summarized in the table below.

		Intracranial metastasis		2 p value
		Present	Absent	
Number of the patients		31	42	
Age		50 (47.2–56.7)	54 (50.3–58.8)	0.417
Menopausal status	Premen	14 (%45.1)	17 (%33.3)	0.851
	Postmen	17 (%54.9)	25 (%72.7)	
Stage of tumor	0–2	20 (%64.5)	25 (%59.5)	0.787
	3–4	11 (%35.5)	17 (%40.5)	
Nodal status	0	4 (%13)	4 (%9.6)	1.0
	1–3	27 (%87)	38 (%90.4)	
Histopathological diagnosis	Inv. ductal	23 (%74.1)	35 (%83.3)	0.389
	other	8 (25.9)	7 (%16.7)	
Estrogen receptor	Positive	16 (%51.6)	30 (%71.4)	0.077
	Negative	15 (%48.4)	12 (%28.6)	
Progesterone receptor	Positive	17 (%54.8)	24 (%56.6)	0.95
	Negative	14 (%43.2)	18 (%43.4)	
Cerb-B2	Negative	18 (%58)	36 (%85.7)	0.015
	positive	13 (%42)	8 (%14.3)	
Triple negative	yes	6 (%19.4)	8 (%18.2)	1.0
	no	25 (%80.6)	35 (%81.8)	
CA 15–3 levels	Normal	5 (%16.1)	17 (%40.5)	0.038
	high	26 (%83.9)	25 (%59.5)	
CEA levels	Normal	7 (%22.6)	17 (%40.5)	0.134
	high	24 (%77.4)	25 (%59.5)	

Conclusion: It has been observed that high Ca 15–3, C-erb-B2 positivity and estrogen receptor negativity are risk factors for brain metastasis in our study. We could not detect any association with more commonly known risk factors such as being triple negative, menopausal status, T stage and nodal status. High index of suspicion should be maintained during follow up breast cancer of patients.

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POSTER

Risk factors for metachronous contralateral breast cancer suggest two etiologic pathways

V. Vichapat¹, C. Gillett¹, I. Ian S Fentiman¹, L. Holmberg¹, M. Lüchtenborg¹. ¹King's College London, Division of Cancer Studies, London, United Kingdom

Although many studies show an increased risk of metachronous contralateral breast cancer (CBC) in women with a positive family history of breast cancer and of young age at diagnosis of the first primary, the etiologic pathways to CBC are still enigmatic. We analysed the effect of tumour characteristics of the primary breast cancer as well as demographic risk factors on the risk of developing CBC.

In a group of 5,310 prospectively followed primary breast cancer patients diagnosed between 1975 and 2005 in South East London, 106 metachronous contralateral cancers were observed these occurred more than 6 months after the first primary and without prior evidence of recurrent

disease. We analysed the risk associated with age at diagnosis; family history of breast cancer; menopausal status; parity; tumour characteristics, including size and axillary node positivity, invasive component, hormone receptor status; as well as treatment with Tamoxifen, using a multivariate proportional hazards model.

Overall incidence rate of metachronous CBC in this cohort was 2.1 per 1,000 person-years (py). The incidence rate was higher in young women than in older women at 2.68 per 1,000 py and 1.65 per 1,000 py, respectively.

We observed an increased risk of CBC with younger age [adjusted relative risk (RR) 1.2 (95% confidence interval (CI) 0.81–1.9) for diagnosis before 50 years compared to 50–70], a positive family history of breast cancer [RR 1.2 (95%CI 0.7–2.0) with a 1st degree or a 1st and a 2nd degree relative with breast cancer compared to a negative family history], large tumour size [RR 1.8 (95%CI 1.1–2.9) and 5.03 (95%CI 2.9–8.8) for tumours 2–5 cm and ≥5 cm compared to tumours ≤2 cm, respectively], axillary lymph node involvement [RR 2.5 (95%CI 1.2–4.9) for >10 positive versus negative lymph nodes], and a decreased risk with treatment with tamoxifen [RR 0.25 (95%CI 0.16–0.40)].

Our results indicate that a positive family history and young age at diagnosis of the first primary contribute to the risk of CBC. However, the data suggested that tumour size and nodal status are more important risk factors than family history or age which point to a high susceptibility to breast cancer or an impaired host defence mechanism. It may also imply that some CBCs are metastases from the primary tumour.

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POSTER

Clinical outcomes and patients characteristics of triple negative breast carcinoma

U. Yalçintas Arslan¹, S. Tokluoglu¹, F.O. Onder¹, D. Uncu¹, U. Uyeturk¹, I. Turker¹, G. Celenkoclu¹, A. Ulas¹, N. Alkis¹. ¹Dr. Abdurrahman Yurtaslan Onkoloji Eğitim Hastanesi, Medical Oncology, Ankara, Turkey

Background: Previous studies suggest that disease free survival of women with triple negative breast cancer are too low as compared with the other subtype breast cancers. For the metastatic presentation, it has been reported important clinical differences also.

Materials and Methods: Medical records of the triple negative breast cancer (TN) patients at our institution from 2000 to 2009 were reviewed retrospectively. We evaluated whole group patients characteristics, disease free survivals for metastatic disease and first sites of relaps.

Results: In this study, we analyzed 89 patients. Median age at diagnosis was 49 years. During diagnosis, three patients had stage I, forty one patients had stage II and thirty five patients had stage III disease. Two patients presented with metastatic breast cancer (MBC). Seven patients received neoadjuvant, eighty patients received adjuvant chemotherapy. MBC was detected fifty four percents of the patients at the follow-up period. Median disease free survival found 25.5 months. At presentation of MBC, % 55 had visceral metastasis and %11 had multi metastatic region. Brain metastasis developed on fourteen MBC patients during the follow-up. Overall survival for patients with MBC found 36.7 months. Twenty patients with MBC are currently alive.

Conclusions: TN breast cancers are quite distinct from other breast cancers, such that recurrences free and overall survivals of the patients are shorter than non-TN breast cancer. Metastatic diseases mostly appear at visceral sites of the patients initially.

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POSTER

Brain metastases (BM) in HER2-overexpressing metastatic breast cancer (MBC): what changed in the trastuzumab therapy era? A monoinstitutional experience

G. Bernardo¹, R. Palumbo¹, A. Bernardo¹, C. Teragni¹, G. Poggi¹, B. Montagna¹, A. Amatu¹, F. Sottotetti¹, B. Tagliaferri¹, M.R. Strada². ¹Clinica del lavoro Fondazione Salvatore Maugeri, Medical Oncology II, Pavia, Italy; ²Clinica del lavoro Fondazione Salvatore Maugeri, Rehabilitative Oncology, Pavia, Italy

Background: An increased incidence of BM in patients with HER2+ MBC treated with trastuzumab has been reported as compared to historical series of unselected patients. To analyze the risk factors for development of BM in such a population we conducted a retrospective analysis in a cohort of HER2+ MBC pts treated with trastuzumab at our Centre in the last five years.

Patients and Methods: A total of 106 HER2-overexpressing BC pts who had received trastuzumab-based therapy for metastatic disease were identified from pharmacy records at our Centre. All these patients continued trastuzumab therapy beyond disease progression, according to our institution policy. The end point for this analysis was the time of

development of BM, overall survival (OS) and survival from diagnosis of BM (post-BM-OS).

Results: Overall, 4 patients presented brain lesions before starting treatment, while 42 pts (39%) developed BM during trastuzumab therapy, for an overall incidence of 43%. In about 78% of cases BM were multiple, with 18% of patients having at least one cerebellar lesion at the time of CT and/or MNR diagnosis; brain was the first site of progression for 24 patients (52%). The median time to BM was 34.2 months from the diagnosis of metastatic disease and 29.6 months from the start of trastuzumab therapy. In patients developing BM median OS was significantly lower than in those without brain lesions (40.2 months *versus* 65 months, $p = 0.004$). Median post-BM-OS was 23.5 months. Statistical analysis showed that neither tumor grade nor ER-negative status or adjuvant anthracycline- and/or taxane-based chemotherapy were significantly correlated with the risk of developing BM. In the multivariate analysis only younger age at diagnosis (<50 *versus* >50) was significantly associated with increased risk of BM ($p < 0.005$).

Conclusions: Our results confirm that BM are a common event in patients with HER2-overexpressed MBC treated with trastuzumab, even if survival after diagnosis of BM this patient population is longer than historical reports. Further investigation of risk factors for BM may help identify subgroups of patients for whom CNS imaging screening and/or prophylactic strategies should be warranted.

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POSTER

Triple negative breast cancer with "basal-like" phenotype: clinical features and characteristics – a retrospective analysis of cases from a tertiary center

S. Marinopoulos¹, C. Dimitrakakis¹, A. Giannos¹, M. Sotiropoulou², A. Antsakis¹. ¹Alexandra Hospital Athens University Medical School., 1st Department of Obstetrics and Gynaecology, Athens, Greece; ²Alexandra Hospital, Pathology, Athens, Greece

Background: The aim of our research was to explore the clinical features and characteristics of triple negative breast cancer with "basal-like phenotype", in order to assess the behaviour of these tumours characterised by poor prognosis, affecting young women and lacking effective hormonal or targeted therapy.

Material and Methods: We studied retrospectively 1200 tissue specimens from women with breast cancer, who were diagnosed, operated, histologically examined and treated in our hospital between 2003–2008 (6 years). Median follow up, disease free survival, overall survival, clinical and histological characteristics were recorded. Hormone receptors and Her2(n) gene expression were blindly checked twice by the same pathologist. Regression analysis and chi-square test were mainly used for statistical evaluation of the results.

Results: 113 cases were identified as triple negative breast cancers with "basal-like phenotype". These women were divided to two age groups, 19.3% <40 years old and 80.7% >40 years old, respectively. Tumor size was described >2 cm in 53.2%, <2 cm in 46.8%. Lymph nodes were positive in 32.2% and negative in 67.8%. Nuclear grade was 1 in 6.4%, 2 in 8% and 3 in 85.6%, respectively. Overall 6 year survival rate was 95.1%, 6 year disease free survival rate was 85%.

Conclusions: Triple negative breast cancers with "basal-like phenotype" are often presented as poorly differentiated tumors and are reported to appear in the younger population. Pathological identification of this specific histology needs training and diagnostic experience in order to minimize false further therapeutic interventions.

Poster presentations (Wed, 23 Sep, 14:00–17:00) Breast cancer – Clinical early disease

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POSTER

Surgical treatment of Paget's disease of the breast

M. Leidenius¹, E. Siponen¹, K. Hukkinen², P. Heikkilä³, H. Joensuu⁴. ¹Helsinki University Central Hospital, Breast Surgery Unit, Helsinki, Finland; ²Helsinki University Central Hospital, Department of Radiology, Helsinki, Finland; ³Helsinki University Central Hospital, Department of Pathology, Helsinki, Finland; ⁴Helsinki University Central Hospital, Department of Oncology, Helsinki, Finland

Background: We evaluated clinical presentation, surgical treatment and loco-regional recurrences in patients with Paget's disease of the breast, with a special emphasis on the role of magnetic resonance imaging (MRI) and sentinel node biopsy (SNB).

Methods: The records of 58 consecutive patients with Paget's disease treated between 1995 and 2006 were reviewed.

Results: MRI was performed in 14 patients revealing ductal carcinoma in situ (DCIS) or invasive cancer in seven patients. Five of these patients were negative in conventional imaging.

Altogether 44 patients underwent mastectomy either as primary or second operation. Eighteen patients underwent SNB, 26 patients underwent axillary clearance without preceding SNB, while 14 patients had no axillary surgery.

Altogether 56 patients had underlying DCIS or invasive carcinoma. Sixteen patients had peripherally located tumours. Twenty-three patients had multifocal or multicentric tumours. Nineteen patients had axillary lymph node metastases.

Local recurrence was detected in one patient after breast conservation. One patient had axillary recurrence after negative SNB. Six patients had distant metastases, two with a concomitant recurrence in the subclavicular lymph nodes. Four patients died in breast cancer.

Conclusions: Paget's disease is frequently associated with peripheral or multicentric cancer. Mastectomy is the best treatment option for the majority of patients. MRI may be helpful when considering breast conservation or omitting axillary nodal staging, especially in patients with negative findings in conventional imaging.

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POSTER

Use of local anaesthetics in breast cancer surgery

H. Shaker¹, G. Mahadev¹. ¹South Manchester University Hospitals Trust, General Surgery, Manchester, United Kingdom

Introduction: Surgery is usually the first line of treatment in Breast Cancer. Postoperative pain is a significant factor in postoperative morbidity. Infiltration with local anaesthetics (LA) is known to reduce pain and analgesic requirement. Little evidence exists of use of LA in patients undergoing breast surgery. LAs do have uncommon but significant adverse effects. Our aim was to assess the evidence for the use of LA, optimal timing and complications of LA in breast cancer surgery.

Methods & Materials: A literature search was conducted with the words 'breast surgery', 'local anaesthetic' and several related keywords using PubMed, MESH, Cochrane database & Cochrane Review. Cosmetic breast surgery was excluded.

Results: Eight RCTs were found: 6 were carried out in mastectomy patients, 1 in patients undergoing lumpectomy and 1 for breast biopsies under GA. Two studies used topical LA while the remainder used infiltration of either bupivacaine or ropivacaine alone. The mean number of patients in each study was 71 (range 30–120). Three studied pre-incision LA Vs pre-closure, 3 looked at pre-closure Vs placebo and 2 studied pre-incision Vs placebo. No difference was found in pain scores and analgesic requirements between pre-incision and pre-closure LA. Four studies showed a reduction in pain with LA which was usually early (<6 hours post op) while one study also found a significant reduction in pain at 3 months. Two studies showed no difference between placebo and LA. There was no difference in post-operative complications. No study documented at mortality.

Conclusion: The use of LA in patients undergoing breast cancer surgery can reduce pain in the early postoperative period however the evidence to support this is not overwhelming. There is no difference between giving LA pre-incision or pre-closure. Only one study has studied the effect of LA on long term pain. More studies are needed to assess the usefulness (and safety) of using LA to control postoperative pain in breast surgery as well as to identify the optimal drug and method of administration.

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POSTER

Role of lymph-nodes scintigraphy in planning of radiotherapy for patients with breast cancer

M. Girshovich¹, S. Kanaev¹, S. Novikov¹, O. Zotova¹, V. Semiglazov². ¹N.N. Petrov Scientific Research Institute of Oncology, Radiation Oncology & Nucl. Med., St-Petersburg, Russian Federation; ²N.N. Petrov Scientific Research Institute of Oncology, Breast Cancer, St-Petersburg, Russian Federation

Background: to compare standard irradiation volume with radiotherapy portals designed according to results of sentinel lymph-nodes (SLN) scintigraphy.

Materials & Methods: SLN was performed in 49 primary patients with breast cancer and histological evidence of axillary SLN involvement. Instrumental examinations of nonaxillary LN ruled out macroscopic invasion. SLN visualisation was performed 0.5, 2 and 12 hours after intra-, peritumoral injection of 75–150 MBq (0.5–1 ml) of 99mTc-nanocolloid. Standard irradiation volume in patients with tumours in external quadrants encompassed axillary (Ax) + sub-supraclavicular (SSCL) regions; in internal quadrants – Ax+SSCL+internal mammary nodes (IM).