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Predictive risk factors for brain metastasis in breast cancer

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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 $\leqslant 0.05$ 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		
		Present	Absent	2p value
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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Risk factors for metachronous contralateral breast cancer suggest two etiologic pathways

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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 $\geqslant$5 cm compared to tumours $\leqslant$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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Clinical outcomes and patients characteristics of triple negative breast carcinoma

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

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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