

linear regression was used to identify independent factors associate with chemotherapy indication.

**Results:** A total of 509 patients were included for analysis. Thirty patients (6%) were younger than 35 years old. No statistical significant difference was found between age (<35 and >35) according to HR, HER2 and G. Fifty percent of younger patients presented in TNM stage III comparing to 29% of older patients, without statistically significant difference. Distribution by stage was not associated with HR, but 30% of HER2 positive patients were in stage III/IV comparing to 18% of HER2 negative patients ( $p=0.008$ ). Among stage III/IV patients 40% were Grade 3 comparing to 26% of patients stage I/II ( $p=0.002$ ). A significant difference was found between G3 and HR negative patients ( $p<0.0001$ ), G3 and HER2 positive patients ( $p<0.0001$ ) and HR negative and HER2 positive ( $p<0.0001$ ). All RF and MP were independent factors for chemotherapy proposing.

**Discussion:** No clear association is found between all RF and MP, although MP correlate between them. All these factors are considered for treatment decision and are independently associated with chemotherapy indication by oncologists.

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### Risk Factors for Postoperative Complications After Breast Conserving Therapy in 255 Patients with Breast Cancer

P. Panhofer<sup>1</sup>, V. Ferenc<sup>1</sup>, R. Exner<sup>1</sup>, A. Gleiss<sup>2</sup>, P. Dubsy<sup>1</sup>, R. Jakesz<sup>1</sup>, M. Gnant<sup>1</sup>, F. Fitzal<sup>1</sup>. <sup>1</sup>AKH Wien, General Surgery, Wien, Austria; <sup>2</sup>AKH Wien, Center for Medical Statistics Informatics and Intelligent Systems, Wien, Austria

**Background:** Postoperative complications impair quality of life and cosmetic results. Aim of the study was to detect risk factors for in breast complications and reoperations.

**Material and Methods:** 255 patients (mean age  $59.6 \pm 13.5$  years) underwent breast conserving therapy due to breast cancer between 2008 and 2010 at a single center (Medical University of Vienna). Patients with positive sentinel macrometastases undergoing axillary dissection were excluded. The Clavien Dindo Classification (CDC: Grade 1–5) evaluates the severity of postoperative complications under the aspect of the therapy management. In this respect, Clavien Dindo classification 3 and 4 stands for surgical re-operation due to in breast morbidity.

**Results:** Mean follow up was  $10.2 \pm 4.1$  months. Ductal carcinomas in situ were found in 7.8%. Invasive carcinomas included pT1 (71.8%), pT2 (19.6%) and pT3 (0.8%) tumors. Neoadjuvant chemotherapy was performed in 3.5% and oncoplastic surgery in 9% of patients. The majority of patients (94.8%) had no or minor postoperative complications (CDC 1+2). 13 reoperations (5.1%) were performed due to postoperative complications (CDC 3+4). There was no hospital mortality (CDC 5). No prognostic factor could be detected for reoperation necessity. Univariate analysis showed that the BMI >30 was an predictor for wound infections ( $p<0.05$ , odds ratio: 2.94). In the multivariate analysis, oncoplastic operations were independent risk factors for necrosis ( $p<0.01$ , odds ratio: 10.7) and a positive Her2 status for bleeding ( $p<0.006$ , odds ratio: 13.4).

**Conclusions:** Oncoplastic operations and positive Her2 status but not neoadjuvant therapy were independent predictors for postoperative morbidity. However, none of the above mentioned factors were predictive for morbidity related re-operations (CDC 3+4).

Univariate and multivariate\* analyses of predictors for postoperative complications

Predictor	No. (%)	p-value (top) and odds ratio (bottom)						
		Total	>65 a	BMI >30	DM II	Oncoplast. Operation	Neoadjuvant Chemother.	Triple negative positiv
	255	119 (46.7%)	49 (19.2%)	18 (7.1%)	23 (9.0%)	9 (3.5%)	29 (11.4%)	19 (7.5%)
Abscess	8 (3.1%)	0.14	0.68	0.31	0.70	0.09	0.58	0.81
		3.08	1.37	2.64	0.56	5.61	0.44	0.69
Wound infection	15 (5.9%)	0.30	0.05	0.76	0.39	0.87	0.05	0.81
		1.73	2.94	1.32	1.89	0.78	3.31	1.24
Bleeding	4 (1.6%)	0.46	0.28	0.09	0.96	0.51	0.91	0.006*
		0.48	3.60	5.74	1.08	2.83	0.84	13.40
Hematoma	7 (2.7%)	0.87	0.05	0.25	0.77	0.74	0.64	0.27
		0.89	5.22	3.05	0.64	1.67	0.50	2.88
Necrosis	4 (1.6%)	0.46	0.53	0.09	0.01*	0.52	0.91	0.86
		0.48	0.39	5.74	10.7	2.83	0.84	1.33
CDC 3+4	13 (5.1%)	0.06	0.96	0.57	0.51	0.19	0.40	0.14
		3.28	1.04	1.69	0.38	3.60	0.29	3.08

oncoplast.: oncoplastic; chemother.: chemotherapy.

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### Prognostic Factors in Triple Negative Breast Cancer Patients Treated with Neoadjuvant Chemotherapy

N. Wada<sup>1</sup>, K. Yoneyama<sup>1</sup>, C. Yamauchi<sup>1</sup>, S. Fujii<sup>2</sup>. <sup>1</sup>National Cancer Center Hospital East, Breast Surgery Division, Kashiwa Chiba, Japan; <sup>2</sup>National Cancer Center Hospital East, Pathology Division, Kashiwa Chiba, Japan

**Background:** Triple negative breast cancers (TNBC) are aggressive neoplasms and associated with a poor prognosis, despite showing a good response to neoadjuvant chemotherapy (NAC). The purpose of this study was to investigate a prognostic factor for TNBC patients after NAC.

**Patients and Methods:** In our prospectively collected database, we identified 350 patients with Stage II-III invasive breast cancer treated with anthracycline and/or taxane based regimens for NAC between Feb 2002 and Mar 2011. Outcomes for 83 patients with TNBC were analyzed in this study. TNBC is defined as the lack of ER, PR, and HER2 expression in both pre-therapy core-needle biopsy and post-therapy surgical excision specimens. The expression of Ki-67 was also assessed using immunohistochemistry (MIB-1) in the both specimens. Levels of Ki-67 index (percentage of Ki-67 positive cancer nuclei) were dichotomized as high (over 10%) and low (less or equal 10%). Statistical analysis performed included Kaplan-Meier survival analysis, log-rank test, and Cox proportional hazard model.

**Results:** Median age was 53 years (28–68 years). 21 cases (28%) of all achieved a pathological complete response (pCR: no residual invasive disease in the breast). Ki-67 index in pre-therapy was not correlated with the pathological response and the prognosis after NAC. At a median follow-up time of 38 months (1–107month), no patients with pCR had an unfavorable event. The patients with non-pCR, however, developed 27 recurrences and 26 deaths. 5-year overall survival estimates were 100% for pCR versus 51% for non-pCR. There was a significantly difference between them in overall and relapse free survival curve (both  $p<0.01$ ). In 62 non-pCR patients, cox multivariate analyses showed that mastectomy [ $p<0.05$ , HR 3.5, 95% CI 1.3–9.2], presence of lymphovascular invasion [ $p<0.05$ , HR 2.7, 95% CI 1.2–5.9], evidence of lymph node metastasis [ $p<0.05$ , HR 2.6, 95% CI 1.1–5.7] and high Ki-67 index of post-therapy [ $p<0.01$ , HR 11.0, 95% CI 4.5–26.6] were independently associated with worse overall survival.

**Conclusions:** In patients with TNBC, attainment of pCR after NAC yields promising survival results. Once there is evidence of residual invasive disease in the breast, Ki-67 index in post-therapy may be a useful predictor on clinical outcomes in addition to the known pathological factors.

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### FOXP3 Expression in Tumor Cells Associated with the Prognosis in Breast Cancer Patients

M. Takenaka<sup>1</sup>, U. Toh<sup>1</sup>, N. Seki<sup>2</sup>, A. Kawahara<sup>3</sup>, S. Hattori<sup>4</sup>, N. Iwakuma<sup>1</sup>, R. Yamaguchi<sup>3</sup>, H. Yano<sup>3</sup>, K. Shirouzu<sup>1</sup>, M. Kage<sup>3</sup>. <sup>1</sup>Kurume University School of Medicine, Surgery, Kurume, Japan; <sup>2</sup>Research Center for Innovative Cancer Therapy Kurume University, Surgery, Kurume, Japan; <sup>3</sup>Kurume University School of Medicine, Pathology, Kurume, Japan; <sup>4</sup>Biostatistical Center Kurume University, Statistics, Kurume, Japan

**Purpose:** The transcription factor forkhead box protein3 (FOXP3) is highly expressed not only in regulatory T cells, but also in tumor cells. We investigated the prognostic significance of FOXP3 expression in cancer cells and infiltrating lymphocytes.

**Patients and Methods:** The expression patterns of FOXP3 were characterized by immunohistochemistry in 100 patients with primary invasive breast carcinoma. Kaplan-Meier analysis and Cox regression model were used to assess overall survival and relapse-free survival, according to the presence of FOXP3 expression in cytoplasm or nuclear of tumor cells.

**Results:** Of 100 tumor specimens, FOXP3 expression was found in cytoplasm in 37% of the cases, in the nucleus in 32%, and in infiltrating lymphocytes in 57%. FOXP3 expression in cytoplasm and infiltrating lymphocytes was associated with worse overall survival (OS) and relapse-free survival (RFS) of patients. Moreover, FOXP3 expression in both cytoplasm and lymphocytes was associated with significantly worse OS ( $p<0.001$ ) and RFS ( $p<0.001$ ). Inversely, FOXP3 expression in nucleus was associated with better OS ( $p=0.016$ ).

**Conclusion:** These data indicate that concomitant FOXP3 expression in both lymphocytes and cytoplasm could be a prognostic marker for breast cancer, which might help identify high-risk patients for appropriate therapy.