

# VIRCHOWS ARCHIV

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**Abstracts**

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Possible mechanisms for this negative conversion was discussed. The sample size was too little to associate with prognosis.

**Conclusion:** The receptor conversion mechanisms in metastatic lesions are still unclear and debatable. It can be due to tumoral heterogeneity, genetic or epigenetic alterations or intervening therapies. HER2 negative conversion is mostly associated with chemotherapy and trastuzumab and is still considered as a bad prognostic factor. Awareness of this mechanisms is important to decide the best therapy options especially in metastatic lesions.

#### E-PS-02-032

##### The existence of calcifications in breast cancer tissue doesn't affect expression of HER2-neu protein

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**Background & objectives:** There is evidence that calcifications in breast cancer (BC) may have an active role in mitogenesis and upregulation of gene expression.

**Aim:** To investigate the effect of presence of microcalcifications in breast cancer tissue on Her2-neu expression.

**Methods:** In this study 468 tissue samples of BC were examined, 55 of which had microcalcifications, and 413 surgical biopsies showed no signs of calcification. The immunohistochemical study of Her2-neu expression and statistical analysis of the results (Chi-square test) was used in this work. Samples with strong expression of the Her2-neu protein were selected for the study.

**Results:** In the study of BC samples with calcifications, it was found that the proportion of Her2-neu-positive cases among them was 20,93%. In the control group of BC without calcification Her2-neu expression was detected in 16,71% ( $p>0,05$ ).

**Conclusion:** The expression of Her2-neu protein in the groups of BC patients with the presence and absence of calcifications was not statistically different. Our study shows no association between the presence of calcifications in breast cancer tissue and Her2-neu receptor expression.

#### E-PS-02-033

##### Molecular and genetic factors of metastases to regional lymph nodes in breast cancer patients

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**Background & objectives:** Breast cancer is accompanied by metastatic lymph nodes in 40% of cases. To identify molecular and genetic predictive factors of metastases to regional lymph nodes in breast cancer patients based on the analysis of gene expression profile of the primary tumour.

**Methods:** The study included 200 patients with morphologically verified unicentric invasive breast cancer T1-4N0-3M0 in 2 groups: 100 cases with metastases in lymph nodes and 100 cases without it. The molecular genetic testing of tumour tissue was carried out using reverse transcription polymerase chain reaction (RT-PCR); the diagnostic panel consisted of 28 functional genes.

**Results:** The primary breast tumour in the group of patients with metastases to regional lymph nodes was characterized by increased proliferative activity based on expression of Ki-67 gene ( $p = 0.03$ ), as well as an increased level of mRNA of genes NAT ( $p = 0.04$ ) and CD68 ( $p < 0.001$ ) and decreased expression of PTEN ( $p < 0.001$ ) and gene ESR1 ( $p = 0.04$ ). According to the results of discriminatory analysis, the predictive accuracy of presence or absence of metastases to regional lymph nodes based on molecular

genetic testing of the primary tumour in 7 genes expression panel was 91.9% and 78.8%, respectively.

**Conclusion:** Molecular genetic testing of the primary breast cancer tissue using the panel of 7 genes (PTEN, CD68, CCNB1, MGB1, MYC, BCL2, ESR1) can become an additional diagnostic tool for predicting the presence of lymph node metastases when planning the volume of axillary surgery in breast cancer patients.

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#### E-PS-02-034

##### Changes of the luminal A subtype of breast cancer in local metastasis

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**Background & objectives:** Subtype discordance in primary and metastatic breast cancer (BC) is the possible reason of lower therapy effect. Objective of the study: to evaluate changes in the luminal A subtype of breast cancer in regional metastasis.

**Methods:** Samples of primary tumour and local metastasis obtained from 36 patients were stained immunohistochemically with antibodies to ER, PR, Her2/neu and Ki67. Primary tumour in all cases had the luminal A subtype (according to St. Gallen 2015 consensus). The frequency of changes in BC subtype in metastasis was evaluated, the detected frequencies were compared using a Fischer exact probability test.

**Results:** Regional metastasis had the discordant subtype in 11 cases (30.6%, 95%, 16.9-48.3%) and concordant (luminal A) subtype in 25 of the 36 cases (69.4%, 95%, 51.7-83.1%). In 10 cases the metastatic tumour had the luminal B subtype (27.8%, 95% DI 14,8-45,4%), in 1 case - triple negative subtype (2,8%, 95% DI 0.1-16.2%). The difference in the frequency of primary tumour and metastasis subtype concordance and discordance was statistically significant ( $p=0.002$ ), as well as the difference in the frequency of occurrence of luminal B and triple negative subtypes of metastases ( $p=0.006$ ).

**Conclusion:** Changes in the luminal A subtype of breast cancer in regional metastasis were observed in 30.6% of cases, while the frequency of cases with concordant subtype was significantly higher. Among cases with discordance of primary tumour and regional metastases subtypes, the luminal B subtype of the metastasis is more common (27.8%) than the triple negative subtype (2.8%).

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#### E-PS-02-035

##### Secretory breast carcinoma with poor prognosis - a case report

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**Background & objectives:** Secretory breast carcinoma (SBC) is a very rare disease; it accounts for less than 0.05%. The SBC is defined by a pattern of pathological, phenotypical and specific molecular features. Reports of death from distant metastasis are very rare.

**Methods:** A 37 year-old woman with a stage IIB tumour. Diagnosed on core-needle biopsy as a triple negative infiltrative carcinoma grade II of SBR. She received a neoadjuvant chemotherapy with six cycles of a combination of carboplatin AUC5 plus docetaxel for 3 cycles followed by 3 cycles of FAC. She underwent a radical mastectomy with lymph node dissection

**Results:** The patient had no response to chemotherapy, with an extensive residual disease (RCBIII) of a SBC with no axillary lymph node metastasis. The tumour cells showed a mild positivity for oestrogen receptor