Association between clinicopathological markers and survival in hormone receptor-positive breast carcinoma treated with neoadjuvant chemotherapy

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Background & Objectives: Residual cancer burden (RCB) is an important marker for patients with breast carcinoma treated with neoadjuvant chemotherapy (NACT). However, the association is not absolute for residual disease of hormone receptor-positive luminal type breast carcinoma. We analysed which clinicopathological variables including RCB grade and immunohistochemical (IHC) markers were associated with survival.

Methods: Expression of annexin-8, galectin-3, bcl-2, calreticulin, clusterin, ki-67, mucin-1, and p53 were assessed in tissue microarray slides of 55 post-NACT resection specimens from luminal type breast carcinoma patients treated by docetaxel and doxorubicin. Patients’ age (≥45 vs. <45), RCB grade (RCB-II vs. RCB-III), lymphovascular invasion, and IHC markers were analysed according to disease-free survival (DFS) using Kaplan-Meier method and multivariate Cox proportional hazard model.

Results: Ten-year DFS of all patients was 65.7%. Only Ki-67 index of ≥5% was associated with shorter DFS by Kaplan-Meier method (p=0.021). High expression of galectin-3 showed a tendency for shorter DFS (p=0.1). Patients’ age, (p=0.29), RCB grade (p=0.52), lymphovascular invasion (p=0.44) and the other IHC markers were not associated with DFS. Multivariate Cox proportional hazard model showed that high ki-67 index was the only independent marker for shorter DFS (hazard ratio, 3.34; 95% confidence interval, 1.26-8.9; p=0.0151).

Conclusion: Ki-67 index in post-NACT resection specimen can be a surrogate marker for recurrence of luminal type breast carcinoma.

Prevalence of incidental atypical proliferation lesions in reduction mammoplasty specimens: a 6-year retrospective analysis at a tertiary breast unit

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Background & Objectives: The reported incidence of unsuspected atypical proliferative lesions (APLs) ranges from 0.06 to 4.6% in reduction mammoplasty specimens. We aimed to calculate the prevalence of these lesions at our tertiary breast unit.

Methods: Data pertaining to age, gender, weight, suture orientation, laterality, clinical indication, number of blocks and outcomes was collected by retrieving and analysing archived histopathology reports from 2013 to 2018.

Results: 490 cases belonging to 488 patients were identified in the 6-year period (483 females, 5 males). The ages ranged from 16 to 80 years (median 48 years). A lack of 100% suture coverage was attributed to the piecemeal nature of some surgical specimens. Of interest, the suture orientation showed a steep improvement between 2016 and 2017. There were two main cohorts: BENIGN comprising macromastia, gynaecomastia and miscellaneous; and POTENTIAL MALIGNANT including symmetrisation for contralateral cancer and risk-reducing mastectomy. 15 cases (3.1%) were eventually removed from the final analysis due to insufficient clinical information.

The most common APL was ALH/ISLN followed by FEA, DCIS, ADH and invasive carcinoma. The POTENTIAL MALIGNANT cohort showed a slightly higher incidence of APLs (n=18/475, 3.8%) compared to the BENIGN cohort (n=13/475, 2.7%).

Conclusion: There has been a steep improvement of suture orientation signifying an increased surgical recognition of the possibility of margin re-excision in incidental APLs. Clinical stratification based on a number of factors such as age, family history, pre-operative imaging and known genetic risk may guide appropriate management of such specimens whilst adopting a pragmatic approach to block-taking.

HER2 status in breast cancer: immunohistochemistry and gene amplification in the Republic of Kazakhstan

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Background & Objectives: Human epidermal growth factor receptor 2 (HER2) overexpression is present in 15-20% of invasive breast cancers, and is an important predictive and prognostic marker. Purpose. Determination of HER2 status in patients with invasive breast cancer (IBC).

Methods: Immunohistochemistry (IHC) was used to study material of 745 patients using Pathway anti-HER2/neu antibody (4B5). Equivocal HER2 (2+) status was specified by SISH hybridization and was performed by the INFORM HER2 DUAL ISH DNA Probe Cocktail (USA) implementing a silver tag (HER2 gene, SISH) and a red chromogen (Chr17, Red ISH). HER2 status by SISH was determined according with ASCO CAP Guideline 2018 as positive, if HER2/CEP17 ratio ≥2 with HER2≥2, HER2/CEP17 ratio<2 with HER2≥6. As a positive control for counting signals were lymphocytes, fibroblasts, endothelial cells.