

CLASS III BETA-TUBULIN EXPRESSION LEVEL AS PROGNOSTICS AND PREDICTIVE BIOMARKER IN BREAST CANCER PATIENTS

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Introduction - Purpose : Overexpression data of class III beta-tubulin TUBB3) is a candidate biomarker for resistance to microtubule-targeting chemotherapeutics and associated with tumors aggressiveness in many types of solid cancer. In this study expression level of the TUBB3 gene was investigated using the age groups, biological subtypes and clinical-pathological parameters in breast cancer patients

Methods - Tools : RNAm expression level of TUBB3 gene was examined using semi-quantitative RT-PCR. Appropriate to HIC staining techniques were performed only for 250 patients.

Findings : The first age group was consisting of 22 patients that who are the age from 21 to 35. In the second group was 132 woman, that cancer diagnosed in aged 36-55 and other group patients n=120) are over the age of 56. TUBB3 gene expression in first group was 36.6% 9/22). In the second group high expression of TUBB3 was 37.2% 132/49). The patients who had 56 over aged high expression rate of TUBB3 was 40.0% 120/48). TUBB3 high expression was observed in all tumor sizes: in T1, T2, T3, T4 groups respectively were 46, 131, 14, 77 patients. High gene expression was 30.4 46/14), 35.1% 131/46), 28.6% 14/4), 50.6% 77/39) correspond to stage T1, T2, T3 and T4. We are examined TUBB3 gene high expression rate including the lymph node statues N0-N3). In the N0 group was 56, N1 was 24, N2 was 34 and N3 was 103 patients. Results of the analysis show that TUBB3 gene expression in N0 group was 19.6% 56/11), in N1 was 40.7% 59/24), in N2 was 32.3% 34/11), in N3 was 53.4% 103/55). We investigated the TUBB3 gene expression in the corresponding to tumor grade G1, G2 and G3. The results were indicated that in the G1 group was 53.5% patient with TUBB3 high expression 43/23), in G2 was 36.7% 150/55), in G3 was 36.1% 36/13). Thus, the more age, tumor size and node numbers are getting higher, the more the number of patients with TUBB3 overexpression groups increases. Vice versa, the less tumor grade is the more patients with the TUBB3 overexpression increase. To examine the correlation of the biological subtypes and TUBB3 gene expression demonstrated that in the luminal A group gene expression rate was 37.2% 129/48), in luminal B was 36.36% 22/8). Among the 250 patients 18.4 % 250/46) of women were with triple-negative breast cancer: TUBB3 gene mRNA expression level was 41.30% 46/19). In the Her2-type group was 53 patients. TUBB3 expression rate in this group was 33.9% 53/18). So, TUBB3 gene highly expressed in the all biological subtypes, but more patients with TUBB3 gene expression was collected in the triple-negative group.

Discussion : The mRNA expression level of TUBB3 gene may have predictive and/or prognostic biomarker in patients with breast cancer in Azerbaijan population.

Keywords: breast cancer, Class III beta-tubulin gene, biomarker