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Expression of integrin receptors and their ligands in papillary thyroid carcinoma with different *BRAF* V600E mutation status

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Papillary thyroid cancer (PTC) is the most common malignancy of the endocrine system. The most frequent genetic alteration in PTC is V600E mutation in *BRAF* gene which leads to changes in the activity of intracellular signaling pathways. As a result, expression levels of cell membrane integrin receptors and their ligands - extracellular matrix proteins - osteopontin (OPN) and thrombospondin-1 (TSP1) change. Such changes promote migration, invasion and metastasis of tumor cells. Thus, integrin receptors and their ligands are potential biomarkers of an aggressive PTC phenotype. The aim of our study was to compare the gene expression profile of integrins ITGA3, ITGAV, ITGA6, ITGA9, ITGB1 and their ligands OPNa, OPNb, and TSP1 in PTC with different *BRAF* V600E mutation status.Intraoperative thyroid tissue samples from 41 patients diagnosed with papillary thyroid carcinoma (n=26), diffuse nodular nontoxic goiter (n=10) and follicular adenoma (n=5) were analyzed to evaluate the expression levels of the investigated genes that had been determinedby real time RT-PCR. Immunohistochemistrywas usedto confirm the PCR results and to estimate the amount of protein products.The presence of*BRAF* V600E mutation was identified using allele-specific amplification. In this study asignificant increase ($p>0.05$) in expression levelsof *ITGA3, ITGAV, ITGB1, OPNb* and *TSP1*was observed in the PTC tissue samples.The expression levels of *ITGA3* and *ITGAV* were higher in the *BRAF* V600Epositive PTC samples. The observed changes in the expression levels of the studied genes indicate their potential role in tumor progression and the possible impact on their expression of the mutant product of gene *BRAF*.Integrins and their ligands OPN and TSP1 can be considered to be potential markers in determining the prognosis and treatment of PTC.

Biography

Galina P Logacheva graduated from Medical department of Novosibirsk State University (NSU) in July 2014. Since September 2014, she has been a clinical intern in Oncology on the base of NSU and a junior doctor of the head and neck tumor department in Novosibirsk Clinical Hospital 1. She is also engaged in research work and has participated in student and oncological conferences.

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