

DOES HASHIMOTO THYROIDITIS AFFECT BEHAVIOR OF PAPILLARY THYROID CANCER AND IT'S GENETICS?

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Background/Purpose: The aim of the study was to evaluate the relationship of Hashimoto's thyroiditis (HT) with the morphological features of papillary thyroid carcinoma, and it's relations with *BRAFV600E* mutations.

Methods: Study is based in retrospective analysis of the 1338 patients operated with a papillary carcinoma proved or found via histological examination.

Results: Of 433 patients (32.4%) had multifocal tumor. In 40.7% of cases they were with Hashimoto thyroiditis and 27.7% with no background HT (the difference was significant: $\chi^2=24,1$; $p=0,00000045$). It was also noted a significant difference ($\chi^2=5,9$; $p=0,0076$) in the likelihood of multifocal process in patients with focal and diffuse nature of the thyroiditis - 43.3% and 28.6% respectively. In 406 (30.6%) cases capsular invasion was observed. It was significantly more prevalent in HT background (33.3% vs 28,7%; $\chi^2=3,1$; $p=0,00387$). Also significant difference ($\chi^2 = 30,8$; $p<0,0000001$) in rate of capsular invasion was between focal thyroiditis (38.8%) and diffuse (7,1%). The relative risk of invasion by the nature of focal thyroiditis was significant - 5.37. *BRAFv600e* mutation was found in 90,9% of cases with HT with papillary thyroid cancer and in 88.7% cases without HT, difference was insignificant.

Discussion & Conclusion: There is marked association of papillary carcinoma, and some of its basic features with the presence of Hashimoto's thyroiditis. Meanwhile there is no connection with expression of *BRAFv600e*. Probably, there are same etiological factors underlying both diseases playing strong role in prognosis, maybe more important than *BRAFv600e*.