

INTERLEUKIN 22 POLYMORPHISMS AND PAPILLARY THYROID CANCER

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Background/Purpose: To analyze the relationships between single nucleotide polymorphisms (SNPs) in IL22, IL22RA1 and papillary thyroid cancer (PTC).

Methods: *Study design:* Case-control study. *Setting:* Tertiary academic hospital.

Subjects and Methods: Study enrolled experimental group of 94 PTC patients and 213 controls. PTC patients were grouped and compared for clinical PTC parameters. One promoter SNP of IL22, -429C/T (rs2227485), and one SNP of IL22RA1, Arg518Gly (rs3795299) were analyzed using direct sequencing. Genetic data were analyzed using HelixTree, SNPAnalyzer Pro, SNPStats, and Haploview.

Results: A SNP in IL22 (rs2227485) was significantly associated (codominant model [C/C vs. T/T], OR = 2.39, 95% CI = 1.21-4.71, $P = 0.012$; dominant model, OR = 1.89, 95% CI = 1.08-3.31, $P = 0.022$) with PTC. The allele T frequency of rs2227485 in IL22 was also associated with PTC (OR = 1.59, 95% CI = 1.13-2.25, $P = 0.009$). According to clinical parameters, rs2227485 of IL22 was associated with number of cancers (dominant model, OR = 3.03, 95% CI = 1.02-9.01, $P = 0.035$). By haplotype analysis, TG was associated with PTC (codominant model, OR = 1.52, 95% CI = 1.07-2.16, $P = 0.019$; dominant model, OR = 1.91, 95% CI = 1.13-3.24, $P = 0.015$). Genotype and allele analysis of rs3795299 in IL22RA1 showed no significant differences between PTC patients and controls.

Discussion & Conclusion: The rs2227485 SNP in IL22 might be associated with the risk and the multifocality of PTC.