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# Null polymorphisms of GSTT1 and GSTM1 genes are associated with a higher risk for differentiated thyroid cancer

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The study aimed to investigate the relationship between GSTT1 and GSTM1 null polymorphisms and the risk of differentiated thyroid cancer (DTC). A total of 26 DTC patients and 33 controls were genotyped using a multiplex polymerase chain reaction (PCR). The frequency of GSTT1 null genotype significantly increased in patients than in controls (38.5 % vs. 12.10 %, $p < 0.05$), and it was significantly associated with a 4.53 times high risk of DTC ($p < 0.05$). The frequency of GSTM1 null genotype was also increased in patients (61.50 % vs. 36.40 %) but association between this genotype and risk of DTC was on the border of statistical significance ($p = 0.057$). Individuals with combination of one of both null genotypes had significantly higher risk of DTC, 3.70 times with GSTT1 positive/GSTM1 null, 13.33 times with GSTT1 null/GSTM1 positive, and 6.67 times with GSTT1 null/GSTM1 null. In conclusion, our findings suggest that both GSTT1 and GSTM1 null genotypes are associated with an increased risk of developing different thyroid cancer, thereby GSTT1 null to a greater extent. Genotyping of GST genes, especially GSTT1 may be of great importance in the prevention of DTC.

*Keywords*: Differentiated thyroid cancer, gene polymorphisms, GSTT1 null genotype, GSTM1 null genotype