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# Involvement of *CYP1A1*, *GST*, *72TP53* polymorphisms in the pathogenesis of thyroid nodules

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**ABSTRACT.** Specific genotypes appear to be related to the development of thyroid disease. We examined whether polymorphisms of the genes *CYP1A1*, *GSTM1*, *GSTT1*, and *TP53* at codon 72 are associated with increased risk for thyroid nodules. Blood samples were obtained from 122 thyroid patients with nodules and from 134 healthy control individuals from Goiânia city, GO, Brazil. We found no significant association of *CYP1A1m1* and *CYP1A1m2* genotypes with thyroid diseases ($P > 0.05$). The null genotypes of *GSTM1* and *GSTT1* genes were predominant in patients with nodules, indicating that individuals that possess these genotypes have a predisposition for thyroid disease. The genotype *p53Arg Arg* was associated with a low risk for thyroid cancer (OR = 0.15; $P < 0.0001$), indicating that the arginine allele in homozygosis could have

 

a protective effect against carcinogenesis. On the other hand, the *p53ArgPro* genotype was significantly associated with malignant neoplastic nodules (OR = 3.65; P = 0.001). Interindividual variation in susceptibility to thyroid diseases could provide new perspectives for early diagnosis, prognosis and treatment, indicating which patients with thyroid nodules will benefit from treatment, depending on specific polymorphic profiles.

**Key words:** Polymorphism; Thyroid disease; Susceptibility; p53; CYP; GST

 