



Short Communication

Thymidylate synthase and methylenetetrahydrofolate reductase gene polymorphisms and gastric cancer susceptibility in a population of Northern Brazil

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ABSTRACT. The folate metabolic pathway, which is involved in DNA synthesis and methylation, is associated with individual susceptibility to several diseases, including gastric tumors. In this study, we investigated four polymorphisms [thymidylate synthase enhancer region, single nucleotide polymorphism thymidylate synthase 5' (TS5'), TS3' untranslated region, and methylenetetrahydrofolate reductase (MTHFR) 677C> T] in 2 genes related to the folate pathway, TS and MTHFR, and their possible association with the risk gastric cancer development in a population from

Pará state, Brazil. For the TS enhancer region, TS3' untranslated region, and single nucleotide polymorphism TS5' polymorphisms, no significant results were obtained. For the MTHFR 677C>T polymorphism, TT genotype carriers had a higher risk of developing tumors in the antrum (P = 0.19 vs CC and P = 0.02 vs CT) and intestine (odds ratio = 4.18, 95% confidence interval = 0.66-26.41; P = 0.252 vs CC and odds ratio = 2.25, 95% confidence interval = 0.32-15.75; P = 0.725 vs CT). Those carrying at least 1 T allele had an increased risk of lymph node metastasis (odds ratio = 3.00, 95% confidence interval = 0.88-10.12; P = 0.133). Our results suggest that polymorphisms in *MTHFR* affect the susceptibility to gastric tumors in the Brazilian population and may be a factor causing poor prognosis in such patients.

Key words: Folate pathway; Gastric adenocarcinoma; Polymorphisms