

Polymorphism of glutathione-S-transferase M1 and P1 genes in patients with cystic fibrosis and chronic respiratory tract diseases

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Polymorphism of GSTM1 and GSTP1 genes was studied in patients with cystic fibrosis (CF) and chronic bronchopulmonary diseases (CBPD) living in Bashkortostan. A combination of certain GSTM1 and GSTP1 genotypes accompanied by severe mutations in CFTR gene proved to intensify a pathologic process in respiratory organs of patients with CF; a combination of the normal GSTM1 and heterozygous I/V GSTP1 genotypes is the most favorable (OR = 4.49; $\chi^2 = 11.53$, $P < 0.002$). In patients with CBPD, a combination of the GSTM1 null genotype and the homozygous GSTP1 V/V genotype is the most common (5.5% versus 1.3% in control; $\chi^2 = 3.01$, $P = 0.08$). The frequency of this genotype is highest in groups of patients with recurrent bronchitis (8.1%; $P = 0.07$; OR = 6.75) and bronchiectatic disease (BED) (9.1%, $P > 0.10$, OR = 7.65). A combination of the null GSTM1 and I/V GSTP1 genotypes was found in 40.0% of patients with chronic nonobstructive bronchitis ($\chi^2 = 4.87$; $P = 0.03$; OR = 4.03). Among patients with BED, a proportion of individuals with the normal GSTM1 and I/V GSTP1 genotypes was increased (36.4% versus 19.4% in control). In patients with chronic obstructive pulmonary disease (COPD), the frequencies of the GSTM1 and GSTP1 genotype combinations virtually did not differ from those in the control group suggesting that COPD severity is not related to changes in activities of glutathione S-transferases M1 and P1.

