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Title: Polymorphism of GSTP1 and EPHX1 genes in smokers and patients with I and II stages of chronic obstructive pulmonary disease

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Body: Chronic obstructive pulmonary disease (COPD) is known as disease associated with smoking. Studying the processes of genetic control of detoxication in connective tissue seems to be important. Polymorphic variants of genes encoding glutathiontransferase GSTP1 and microsomal epoxidhydrolase EPHX1 have been studied. 80 patients have been examined. They were divided into two groups: 1 group - smoking persons without COPD; 2 group – smoking patients with I or II stages of COPD (2 subgroups). The control group consisted of healthy non-smoking persons. Analysis of polymorphic loci of genes GSTP1, EPHX1 was performed by polymerase chain reaction. The high frequency of heterozygous polymorphisms of GSTP1 and EPHX1 was established in patients with COPD. It was estimated that relative risk of COPD increased in the presence of heterozygous variant 105I/V of GSTP1 (OR=2.4, 95% CI: 0.93-6.19, P<0.05). Relative risk of COPD also increased in the presence of heterozygous variant 114A/V of GSTP1 in smokers (OR=1.91, 95% CI: 0.83-4.4, P<0.05). It was revealed that relative risk of COPD increased in the presence of heterozygous variant 113T/H of EPHX1 (OR 1.6, 95% CI: 0.63-4.4, P<0.05). Molecular genetic markers, such as GSTP1 and EPHX1 can be used in predictive measures and diagnosis of increased risk of developing chronic obstructive pulmonary disease.