Abstracts. The Bronchial asthma (BA) is one of the most urgent problems of pulmonology, at the same time continuous increase in number of patients around the world is noted. Purpose of the research is to determine the influence of genetic polymorphisms of the folates metabolism on asthma course during pregnancy. We are examined 96 pregnant women with BA: from them at 33 patients - controlled BA, at 39 – partially controllable, at 24 - uncontrollable. At 47 patients have a mild current, at 43 - moderate and at 6 - a severe asthma the comparison group consisted of 26 pregnant women without bronchopulmonary pathology.

Key words: bronchial asthma, pregnancy, folates metabolism genes

The Bronchial asthma (BA) is one of the most urgent problems of pulmonology, at the same time continuous increase in number of patients around the world is noted. Study of the question of mutual complication of bronchial asthma (BA) and pregnancy remains relevant due to the increase of the prevalence of asthma in reproductive age women. Particular interest is the educational systemic inflammation in asthma, since asthma is an inflammatory process in the bronchial tree. Endothelial dysfunction is a participate in any inflammatory process and can be considered as one of the possible pathogenetic mechanisms of the formation of this disease.

Purpose of the research is to determine the influence of genetic polymorphisms of the folates metabolism on asthma course during pregnancy.

Material and methods. We are examined 96 pregnant women with BA: from them at 33 patients - controlled BA, at 39 – partially controllable, at 24 - uncontrollable. At 47 patients have a mild current, at 43 - moderate and at 6 - a severe asthma the comparison group consisted of 26 pregnant women without bronchopulmonary pathology.

The materials for the molecular and genetic research were DNA samples of 52 pregnant women with asthma and 30 pregnant women without bronchopulmonary diseases (control group).

Results and discussion. During the assessing of frequency of occurrence of MTHFR 677TT genotype depending on the availability of asthma, it was found that in a group of pregnant women with asthma the genotype has been met authentically more frequent than in the control group (p <0.05).

At the same time in case of presence of MTHFR 677TT genotype depending on the availability of asthma, it was found that in a group of pregnant women with asthma the genotype has been met authentically more frequent than in the control group (p <0.05).

Correlation between allergic form of BA and the presence of the polymorphic genotype of C677T MTHFR (r=-0.31; p=0.02), and mutations in the gene MTRRA66G (r=-0.30; p=0.02). The presence of mutations in the gene for MTHFR C677T is more frequently noted in allergic asthma.

In the presence of a polymorphic genotype 677TT asthma exacerbations during pregnancy are more common than in women with normal genotype 677SS (p = 0.03). The presence of the mutant allele 677T worsens the course of asthma during pregnancy. The relative risk (RR) of asthma worsening in the period of gestation was 5.13 (CI 0.68, 38.62). It was found that in pregnant women with of asthma who have MTHFR 677TT and MTRR66GG genes, threatened miscarriage, preeclampsia, chronic feto-placental insufficiency, chronic fetal hypoxia, fetal intratruterine growth retardation of varying severity are authentically more common. OR of pregnancy complications development if there is polymorphisms of folate metabolism genes MTHFR677TT and MTRR66GG is 6.29 (CI 3.44, 11.27). The presence of the mutant allele MTRR66GG authentically reduces the indexes of newborn weight and height (p = 0.03). In newborns from mothers with asthma and polymorphic genotype MTHFR 677TT, perinatal CNS damage is detected more frequently than that in pregnant women with asthma and normal genotype by this gene. OR 1.66 (CI 1.09, 2.53). OR of perinatal CNS lesion is 4.04 (CI 1.33, 12.27).

Homocysteine (H2) in a group of pregnant women with asthma was significantly higher than in the comparison group (p<0.05). While the more hard proceeded BA, the higher the H2 level recorded in pregnant women. When hyperhomocysteinemia often marked by the deterioration of the dynamics of BA course in gestational period (r=0.63, p<0.01)
Conclusions. Determination of risk factors of endothelial dysfunction, in particular, polymorphism of genes of folate metabolism, gene of endothelial synthase nitric oxide and homocysteine when planning pregnancy or in early gestation allows to assess the course of BA and the presence of possible complications of pregnancy and the health of the newborn

Reference