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GENETIC PREDICTORS OF CARDIOVASCULAR COMPLICATIONS
ESCALATION IN PATIENTS WITH ASTHMA

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One of the serious asthma complications is the defeat of the cardiovascular system, which may take the form of dismetabolic cardiomyopathy, myocardiosclerosis or pulmonary heart. In this case clinical symptoms of these nosologies exacerbate the underlying disease, which manifests the formation of severe asthma refractory to conventional therapy. It was found that the predictor of these changes is endothelial dysfunction, one of the markers which can be considered is polymorphism of angiotensin-converting enzyme (ACE) gene.

Purpose: to study the influence of insertion-deletion polymorphism (I/D) of ACE gene on the cardiovascular risk formation in patients with asthma.

Material and methods. We examined 42 patients with asthma - study group. The average age of the group was 41.6 ± 6.5 years. Comparison group contained 50 healthy people. Patients were representative by gender, age, form and degree of asthma and disease duration in the groups. The study of ACE gene polymorphism was carried out using a diagnostic test system «SNP-Express» ACE Alu Ins/Del I>D. Analysis of DNA loci polymorphic was performed by polymerase chain reaction method of DNA synthesis followed by electrophoretic detection.

Results. In a study of 50 healthy subjects I/I genotype of the ACE gene was detected in 16.0%, genotype I/D - 54.0%, and genotype D/D - 30.0% of cases. Were examined 60 patients with asthma, average age was 46.5 ± 6.1 years and duration of disease was from 3 to 27 years. Genotype of the ACE gene had different distribution ratio. Thus, the I/I genotype recorded in 11.7% of cases, I/D - 35% and pathological genotype D/D - in 53.3% of patients, i.e. in patients with asthma pathological ACE gene occurred 1.8 times more frequently than in the control group. A comparison of the genotypes with the clinical manifestations of the disease showed that 30 of 32 patients with genotype D/D had a fourth stage of the disease. At the same time was marked the short history of the disease to the formation of severe stage (up to 5 years) and frequent exacerbation of the pathological process in bronchopulmonary system (3-4 times per year). Based on the results of clinical examination, it was found that patients with pathological mutation exacerbation of the disease in 90.6% of cases accompanied by a moderate increase in blood pressure (up to 155.2 ± 3.4 mm Hg SBP and 87.3 ± 3.2 mm Hg DBP), arrhythmia (extrasystole in 59.4% of patients and paroxysmal tachycardia - at 28.1%) and conduction disturbances (12.5%). In the group with genotype I/D changes in blood pressure were

recorded in 33.3%, the arrhythmia in 19% and 14.3%, respectively, and conduction disturbances - 9.5%; in case of I/I genotype increased blood pressure was observed in 14.3% patients, extrasystole - in 14.4%, and the conductivity disturbances were not recorded.

Conclusions. The presence of a mutant genotype D/D of ACE gene in patients with asthma predicts severe disease with frequent exacerbations of bronchopulmonary pathology and hemodynamic disturbances. Thus, the determination of genotype of the ACE gene structure can be used in the prediction of cardiovascular disorders in patients with asthma and, therefore, the formulation of prevention and clinical examination of patients.

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ЭНДОТЕЛИАЛЬНАЯ ДИСФУНКЦИЯ СОСУДОВ ПРИ
ОТМОРОЖЕНИЯХ**

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Отморожения наносят немалый прямой медико-социальный ущерб обществу вследствие финансовых затрат на лечение больных и косвенный за счет высокого уровня стойких потерь трудоспособности и инвалидизации. В эксперименте на животных с воздействием низких температур на конечности было показано развитие выраженных местных и системных ангиодисфункций. Сейчас установлено, что отморожения, в первую очередь, являются именно сосудистой патологией. Нарушения микроциркуляции определяются усилением прилипания лейкоцитов к эндотелию сосудов с участием молекул клеточной адгезии. Главной детерминантой вазомоторного ответа при отморожении является ремоделирование сосудов – изменение их структуры и функции как ответ всех компонентов стенки на низкотемпературные различные стимулы (эндотелия, гладкомышечных клеток, соединительнотканых элементов). Ведущие позиции в патогенетических построениях последствий холодовой травмы занимают процессы, связанные с повреждением сосудистого эндотелия.

Оценка эндотелиальной функции сосудов (ЭФС) в сопоставлении с вазальными адсорбционно-реологическими свойствами сыворотки крови (АРСК) при холодовой травме стала целью данного исследования. Под наблюдением находились 147 больных с холодовой травмой в возрасте от 16 до 79 лет (в среднем $43,6 \pm 1,21$ лет), среди которых было 87% мужчин и 13% женщин. В 82% случаев холодовая травма была в результате локального переохлаждения длительностью до 6 часов, у 7%