

DETERMINATION OF GENE-FACTOR INTERACTIONS AS A PROGNOSTIC CRITERION OF RISK OF VARYING SEVERITY DEGREES OF ASTHMA IN CHILDREN

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Summary

The aim: *defining prognostic criteria of bronchial asthma by analyzing the gene-factor interactions in children.*

Materials and methods: *it surveyed 163 child with bronchial asthma (BA), 3–17 years old: with severe asthma – 38 children (group I), moderate – 69 (Group II), light – 56 (group III). The groups were representative by gender and age.*

The clinical, instrumental, anthropometric, molecular genetic methods it was used. Polymorphisms in genes encoding Phase II xenobiotic detoxification enzymes GSTM1, GSTT1, GSTP1 (A313G) and cardiovascular tone genes AT2R1 (A1166G), NAT2 (C481T), NAT2 (G857A) has been determined. Gen-factor interaction established between the identified genotypes and the presence of second-hand smoke, the levels of integrated Quetelet index, Pushkarev, Kerdo, functional changes.

Results: *the risk of severe asthma in children is set high when the combination of DD genotype of ACE gene and Quetelet index > 16,84 or functional changes > 1,82, the Pushkarev index > 99,71, and in the case of a GSTM1 deletion polymorphism or genotype AT2R1 1166SS combination with uncontrolled disease. The value of the last prediction model was the lowest (65.5 %).*

Heterozygous variant at AT2R1 gene causes moderate asthma in children.

Conclusions: *to carry out genetic testing and gene polymorphism install makes sense for predicting the course of asthma in children. This test can be performed at any time during the life of the child, especially when the first symptoms of the disease or suspected it.*

Efficiency increases provided a comprehensive analysis of the results of genetic testing, objective and functional changes indicators, as well as the specific exogenous factors (smoking in the family). Combined use of objective and functional changes indicators of allows the individual risk and the conditions under which, in the event of an unfavorable genotype, implemented severe disease.

Key words: *children, bronchial asthma, risk factors, genes.*

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