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Body: Certain investigations showed that genetic factors of bronchial asthma (BA) and obesity overlap each other, this indicates that they have common genes predisposition, which encode β-adrenergic receptor, IL-1α, glucocorticoid receptor, etc.

The aim of our research was to analyze influence of ADRβ2 gene polymorphism (Gln27Glu) on the level of bronchial obstruction and BMI in patients with BA.

Materials and methods. The study involved 195 patients with BA and 95 healthy individuals. BA was diagnosed in accordance with GINA recommendations, anthropometric, genetic and statistical methods of investigation were used. Patients were divided into 3 groups according to the genotype, 1st group include 102 patients with Gln27Gln genotype, 2nd – 73 with Gln27Glu genotype, 3rd – 20 with Glu27Glu genotype, in the control group - 37/38/20, respectively.

Results. An analysis of the genotypes frequency showed a significant increase in the risk of BA associated with the Gln27Glu polymorphism (OR=2,8; 95%CI 1,32 –5,61, p=0,01). The patients with BA had higher BMI parameter, than in the control group (27,1±0,48 VS. 23,5±0,27 kg/m^2; (p<0,001).The mean values of BMI among BA patients in the 1st group was – 24,5±0,45, 2nd – 29±0,87, 3rd – 33,1±0,89 kg/m^2 (p<0,01). FEV1 analysis showed that among the 1st group it was 74±1,04, 2nd – 66±0,75, 3rd – 50±1,45% (p<0,01).

Conculsions. Genotype study as for Gln27Glu polymorphism of ADRB2 gene in patients is important for predicting BA and obesity development, as well as predicting individual therapeutic response to beta2agonists in perspective that can help to optimize BA control and improve patients quality of life.