**Introduction.** Bronchial asthma (BA) is a heterogeneous disease with different types of inflammation of the bronchi, resulting from the interaction of genetic and exogenous factors. The polymorphism of genes encoding the synthesis of nitrogen monoxide in the airways is of special interest among all the factors of predisposition to chronic inflammation of the bronchi and their hyperreactivity. In this regard the impact of mutation of *eNOS* gene, which encodes the activity of endothelial NO-synthase, should be considered as the least studied. The aim of the research was to study the effect of allelic polymorphism of *eNOS* gene on some clinical-paraclinical parameters of BA in school-age children with eosinophilic and paucigranulocytic bronchial inflammatory subtypes.

**Material and methods.** 37 children of school age were observed, among them 22 patients with the airway eosinophilic inflammatory subtype (EIS) (I clinical group) and 15 patients – with paucigranulocytic inflammatory subtype (PIS) of the bronchi (II clinical group). According to the main clinical characteristics the clinical groups were comparable. The immunological, spirometric studies, genotyping of endothelial *NOS* were performed.

**Results.** There was shown that the distribution of asthma severity did not depend on the nature of the inflammation of the bronchi. The average of genealogic index for atopic diseases in children with bronchial EIS was of 0.06 of conventional units (CU), and in patients with PIS of airways - 0.09 CU (P<0.05).
The absence of eNOS gene mutations as a GG genotype was more characteristic for patients with paucigranulocytic bronchial inflammatory nature (60.0 vs. 40.9%), whereas, allelic polymorphism GT/TT – for children of the first group of comparison (59.1 vs. 40.0%). While assessing the distribution of asthma severity in children of compared groups with the presence or absence of allelic polymorphism of eNOS gene significant differences were not revealed. If allelic polymorphism of eNOS gene as GT/TT genotype was present in children with bronchial inflammation of the paucigranulocytic nature the clinical manifestations of atopic dermatitis and allergic rhinitis were determined respectively in 21.4% and 28.6% of cases and in patients of the group of comparison with the above mentioned genotype - only in 11.1% of cases.

In patients with PIS of bronchi and GT/TT genotype the average index of the bronchial lability was 46.7% versus 16.8% (P<0.05), the average content of total serum immunoglobulin E was 766.0 IU/ml versus 550.2 IU/ml (P>0.05), and the concentration of NO metabolites in the condensate of exhaled air – 22.6 mcmol/ml versus 39.2 mcmol/ml (P<0.05) in children with EIS of bronchi and the same allelic polymorphism of the eNOS gene. Thus, the presence of allelic polymorphism of eNOS gene was associated with allergic inflammation and more evident bronchial hyperreactivity.
Conclusions.

1. Allelic polymorphism of \textit{eNOS} gene as the \textit{GT/TT} genotype was observed in patients with asthma with the bronchial eosinophilic inflammatory nature in 59,1\% of cases, while in children with paucigranulocytic subtype of inflammation - in 40,0\% of cases.

2. The severity of asthma in patients with eosinophilic and paucigranulocytic bronchial inflammatory subtypes doesn’t depend significantly on allelic polymorphism of the \textit{eNOS} gene.

3. In children with allelic polymorphism of \textit{eNOS} gene and paucigranulocytic bronchial inflammatory subtype the manifestations of atopic reactivity (allergic comorbidity, the content of total IgE in serum) were more characteristic, the index of bronchial lability was significantly higher, and the content of the metabolites of nitrogen monoxide in exhaled breath condensate was significantly lower as compared to the group of patients with the eosinophilic inflammatory subtype.