Summary. The aim of the study was to examine the main highly informative clinic, anamnestic, immunological and molecular genetic risk factors of bronchial obstruction during acute bronchitis at infants.

Materials and methods. We have examined 80 children aged from 6 months to 3 years old with acute obstructive bronchitis and 40 children of similar age with acute simple bronchitis. We determined the concentration of total IgE, content of IFN-γ, IL-4 and IL-13 in serum by ELISA kit. The expression of the transcription factor NF-κB in lymphocytes of peripheral blood was studied by flow cytometry. To determine the risk factors for acute obstructive bronchitis at infants Wald sequential analysis was conducted. 147 clinical and anamnestic, immunological and molecular genetic parameters were processed by mathematical program. The relative risk (RR) and the diagnostic coefficient (DC) were calculated for each parameter.

Results. The average age of patients with acute obstructive bronchitis was 14.6 ± 1.4 months old, the average age of patients with acute simple bronchitis was 18.4 ± 2.0 months old (p> 0.05). The highest risk of bronchial obstruction was found in the age group of 6-16 months old (RR=1.46). Boys dominated in both groups of observations. There were 77.5% boys among children with acute obstructive bronchitis and 55% boys among children with acute simple bronchitis. At the same time we found that the male gender was a risk factor for development of bronchial obstruction during acute bronchitis at infants (RR = 1.46).

The high-risk factors of formation of bronchial obstruction during acute bronchitis at infants were the father's age older than 38 years (RR=2.08), IUGR
(RR=2.92), deconditioning syndrome in the neonatal period (RR=2.0), early artificial feeding (RR=2.23), genetic predisposition to atopy (RR=2.23), passive smoking (RR=3.77), fever followed immunization (RR=2.14), the incidence of acute obstructive bronchitis (RR=5.35) and more than 2 episodes of acute obstructive bronchitis in history (RR=4.0), paratrophic (RR=4.58).

The development of acute obstructive bronchitis was associated with fever up to 37.7 °C (RR=7.50), mild intoxication syndrome (RR=5.83) lasting no more than 3 days (RR=3.33) and free nasal breathing (RR=3.75).

The level of concentration of IL-13 in serum within 4.05-6.71 pg/ml and the relative number of lymphocytes that express the transcription factor NF-kB, less than 49.8% significantly increased the likelihood to bronchial obstruction during acute bronchitis at children in the first three years of life (RR=4.0 and RR=3.27 relatively).

The protectors of acute obstructive bronchitis were the female gender of the baby (RR=0.48), anemia during pregnancy (RR=0.29), breastfeeding for more than 15 months (RR=0.29), no peripheral lymphadenopathy (RR=0.42), the concentration of IFN-γ in serum within 9.84-14.7 pg/ml (RR=0.50) and the expression of the transcription factor NF-kB 0.91-1.40 Unit (RR=0.20).

**Conclusions.** Thus, we have identified the main highly informative prognostic risk factors of bronchial obstruction during acute bronchitis at infants. A mathematical model for prediction of the development of acute obstructive bronchitis was created. The prediction table is easy to use and highly effective. We recommend it for using in the practice of family doctors for allocating cohort of
children with high risk of forming bronchial obstruction during acute bronchitis. It would allow to prescribe rational therapy timely.