Despite of achievements in modern allergology and knowledge about inflammation process in bronchial asthma (BA), presence of two main pathogenetic ways of asthma formation (leukotriens and steroid-dependent), full indications to choice one of the treatment start regimens are not clearly understood. Actual questions for doctors are: differential choice of starting medication, duration of basic treatment and when the dose of drugs can be reduced. Identification of mediators, which play main role in asthma development and progression, run to synthesis new drugs – leukotriens modifiers. They are the alternative to low dosages of inhaled glucocorticosteroids in treatment of mild persistent bronchial asthma. Therapeutic response to leukotriens modifiers is variational. Identification of patients who will probable benefit from these remedies is an important moment in personalized approach in bronchial asthma treatment policy.

The aim of the work was improvement of mild persistent asthma treatment on the ground of elaboration of differential treatment program.

Materials and methods: We supervised 120 children 6-7 years old with first diagnosed BA 2nd degree in allergological department. Middle age is 6,4±0,04 years. Control group was 13 almost healthy children. As anti-inflammatory basic drug we random select montelukast 5mg or fluticasone propionate 50 mcg BID. After 1 month of the treatment those who didn’t achieve control were transferred to third group, and combination of fluticasone propionate and montelukast was administered. After 3 month retrospective analysis was done. Examination included anamnesis, catamnesis, and evaluation of leucotriens C$_4$/D$_4$/E$_4$ in serum. So, there were 3 groups of patients: 1st – 53 montelukast sensitive children, 2nd – 38 patients on inhaled steroid treatment with positive effect, and 3rd – 29 children on combination treatment. Mathematics, statistical analysis and data processing were conducted using Statistica for Windows 6.1.RU (StatSoft, USA). Descriptive statistic is represented as M±m. Odds Ratio was calculated and its confidence interval (CI$_{95\%}$). Significance between two independent groups was evaluated by Mann-Whitney criteria.

Results: End points of therapy effectiveness were: usage of oral steroids, unplanned visits to doctor or emergency department, quantity of hospitalization, usage of β$_2$-agonists of short action. All these parameters were lowest in children of 1st group and highest in patients of 3rd group. Duration of remission was significant longer in group, receiving montelukast (5,6±0,2 month), than in 2nd (1,3±0,2 mo) and 3rd (0,8±0,2 mo) group (p<0.05).

Middle level of LT C4/D4/E4 was significant higher in children with bronchial asthma than in healthy children (825,08±57,8 pg/ml, 396,7±47,3 pg/ml, p<0,05). But degree of elevation of leukotrien’s blood levels is related to inflammation activity. The highest levels of leukotrienes were detected in patients of 3rd group (1278,3±126,9 pg/ml), who achieved asthma control with
the help of combination treatment. After treatment levels of leukotrienes in 1st and 2nd group reached ranges of control group, unlike 3rd group, where leukotrienes concentration after treatment decreases in 2 times but was still high (445.7±39.4 pg/ml, p<0.05). It is the indication of inflammation activity in those children and underlines necessity of prolonged basic therapy.

After calculation of odds ratio of effectiveness of basic treatment in case of use of montelukast, fluticasone propionate or combination of two remedies it was revealed the connection with leukotrienes levels, which allow administering an appropriate basic differentiated treatment for every patient. When level of serum leukotrienes C_4/D_4/E_4 is 500-1000 pg/ml chance to achieve asthma control using montelukast were in 5.9 times higher than using fluticasone propionate (CI_{95%}: 2.01–18.2, p<0.05). When level of serum leukotrienes C_4/D_4/E_4 is more than 1000 pg/ml, combination therapy was in 6.7 times (CI_{95%}: 2.5–17.8, p<0.05) significant more effective than montelukast and in 83 times (CI_{95%}: 9.9–667.9, p<0.05) than inhalation glucocorticosteroids.

Conclusions. 1. As monotherapy montelukast is effective in 44.2% of children with mild persistent bronchial asthma and just 24.1% needs combinative treatment.

2. Patients with firstly diagnosed bronchial asthma for administering basic treatment need to evaluate the degree of inflammation activity by measuring leukotriens serum levels.

3. Montelukast as monotherapy is indicated in children 6-7 years old with mild persistent bronchial asthma if serum levels of leukotriens are 500-1000 pg/ml. In case of leukotriens concentration is less than 500 pg/ml inhalation glucocorticosteroid is preferred, more than 1000 pg/ml – combination treatment is used with the duration of 3-6 months and more.