

## Modern approaches to the treatment of bronchial asthma among pregnant women

*Prikhodko O.B., Landishev Y.S., Babtseva A.F., Romantsova E.B., Goryacheva S.A., Smorodina E.I., Kostrova I.V., Luchnikova T.A.*

Amur State Medical Academy, Blagoveshchensk, Russia

**Abstracts:** The objective of this work was to determine an effect of bronchial asthma (BA) control level during gestation on gestation course and on the status of fetus and newborn infant. The dynamics of bronchial asthma (BA) progression during pregnancy was determined: in 17,6% of cases – improvement, in 33,8% – without significant dynamics, in 48,6% of cases – deterioration. Interaction between bronchial asthma uncontrolled progress and gestational complications developing occurrence (early pregnancy toxemia, gestational toxicosis, threatened miscarriage, chronic placental insufficiency, intra-uterine foetal infection, chronic intrauterine hypoxia), diseases of newborn infants was proved.

**Key words:** bronchial asthma, pregnancy, newborn infants.

Appropriate treatment of bronchial asthma (BA) is one of the most topical issues of the worldwide Healthcare Service. Bronchial asthma is numbered among the most widespread Chronic Lung Diseases, therewith, the fact of steady increase of patient census, including ones of reproductive age, stipulates a growing interest to the problem of BA during pregnancy all over the globe.

Severity of BA progression oftentimes changes during pregnancy, and patients may require closer care and change of treatment regimen. BA progression appears approximately among one third of women, progression of BA becomes less severe among one third of women, and remained one third does not have any changes [5]. Majority of authors regard pregnancy and BA as interdependent states, under unfavorable course of both states mutual worsening is presented [1,2,4].

Taking into account that in accordance with the national and international recommendations concerning BA patient manage, the main task of such therapy was to achieve and to keep appropriate control under the disease [3,4,5], the objective of this work was to determine an effect of bronchial asthma (BA) control level during gestation on gestation course and on the status of fetus and newborn infant.

**Materials and methods.** We have analyzed clinical and functional characteristics of BA progress, pregnancy termination, outcome of labor and BA patients' newborn infants state, herewith, mild development of BA was noticed among 61,1%, moderately severe development of BA – among 30,6%, severe development of BA – among 8,3%. Allergic form of BA was diagnosed among 62,4% of patients, non-allergic form of BA – among 10,4%, mixed type of BA was diagnosed among 27,2% of patients.

We used clinical and anamnestic data, investigation of pulmonary ventilation function with studying of bronchodilator reversibility, daily monitoring of bronchial patency indicates, newborn infants health assessment.

**Results and discussion.** For the first time BA during pregnancy was diagnosed among 13,1% of patients with average age of  $27,2 \pm 2,5$  years old, with the domination of allergic form of BA (63%).

Duration of BA among majority of patients (79,3%) was above 5 years.

Among the specific causally significant factors more often were noticed multipartial sensibilization to the epidermal, medical and pollen allergens, among non-specific factors are –

ARVI (acute respiratory viral infection), psychoemotional and physical stress, influence of weather condition. Extra pulmonary appearance of allergy was noticed among majority of patients, including: 69,1% - with mild development of BA, 79,1% – with moderately severe development of BA, 87,5% – with severe development of BA.

It's structure consists of: urticaria fever – 19,7%, atopic dermatitis - 9,3%, grass pollen allergy –43,1%, rhinoallergosis- 51%. Combination of rhinoallergosis with atopic dermatitis BA was noticed among 51 % of patients. Recrudescence of BA during pregnancy was noticed among 75,2% of patients, among them - 68,8 % with mild development of BA, 81,4%, - with moderately severe development of BA, 100% - with severe development of BA.

Recrudescence of BA in one trimester was 55 %, recrudescence of BA in two trimesters was 38,1 %, during all three trimesters recrudescence of BA was 6,9 %, it means that occasional recrudescence's of BA were noticed among 45% of pregnant women.

In general, dynamics of bronchial asthma (BA) progression during pregnancy was as follows: 17,6% of patients – improvement, 33,8% - without significant dynamics, 48,6% - deterioration. In the structure of dynamics with the case of BA progression improvement the allergic form of disease was dominant, while in the case of BA deterioration more than ½ of patients had non-allergic and mixed types.

Treatment of patients was conducted in accordance with the GINA Recommendations (2010). Taking into account that the main task of BA treatment is to achieve disease symptoms control and to keep normal function of lungs, we used “Asthma Control Test” (ACT<sup>TM</sup>) in order to detect disease control level. While evaluating ACT<sup>TM</sup> `s results we found out that 62,5% of patients had uncontrolled disease progression with the dominant majority of severe and moderately severe development of BA for 4 prior weeks, all that required boosted therapy. At the same time controlled BA was partially or fully noticed among 37,5% of patients with mild (1/2) and moderately severe(1/3) development of BA progression.

51,7% of pregnant women received baseline anti-inflammatory therapy (Group I). Among them – 28% - received Sodium cromoglycate; 63,3% -received inhaled glucocorticoids (GK) (Beclomethasonedipropionate, budesonide); in case of steroidal BA 8,7% of patients received consistent GK – prednisolone. As for broncholytic medication, fast-releasing and long-acting  $\beta_2$  – agonists preferably with the infiltration through nebulizer and methylxanthines were placed on, according to the indications mucolytic agents and respiratory gymnastics were used. 17,3% of patients (with mild intermittent BA) used fast-releasing  $\beta_2$  – agonists on demand. Group II consisted of 31% of patients who was limited only to symptomatic Therapy, despite persistent disease state and presence of bronchial blocking symptoms, caused by low treatment compliance (because of the anxiety of negative effect of medicinal drugs on fetus). In this Group of patients common cause of recrudescence development, and lack of disease control, was withholding baseline anti-inflammatory therapy due to beginning of pregnancy. In Group I with moderately severe of BA progression (with full or partial control) we can obviously see better indications of external respiration function ( $p < 0,05$ ) in comparison with the indications of Group II. In case of uncontrolled progression of BA we noticed significant increase of ventilation-perfusion relations in lungs, what is the evidence of respiratory distress development; we also noticed high level of anxiety, big occurrences of pregnancy complications: threatened miscarriage (in 2 times), early pregnancy toxemia (in 2,9 times), gestational toxicosis (in 2,0 times), chronic placental insufficiency (in 1,4 times), chronic intrauterine hypoxia (in 1,3 times), what influences the development of fetus.

The state of 75,7% of newborn infants belonged to the mothers of Group I was satisfied, 24,3% - medium severity state, while in Group II, correspondingly - 28,9%, 53,8% and 17,3% newborn infants state was qualified as severe state. 58,6% of I Group mothers newborn infants physical development was qualified as harmonious, 41,4%, - disharmonious, at the Group II the same indications were 46,9% and 53,1%.

In the structure of both Groups newborn infants diseases've been found leading position belong to cerebral ischemia, intrauterine infection, adjustment cycle abnormality, however, morbidity rate dominated among children of Group II.

Thus, among newborn infants of Group II cerebral ischemia obviously occurred more often - in 2 times, intrauterine infection (infectious disease of skin and mucous coat) – in 1,7 times, intrauterine growth retardation - in 6,9 times, respiratory distress syndrome – in 3,9 times, hematologic indications abnormality with the predomination of hyporesponsiveness and reaction of deadaptation in 2,0 times in comparison with the results of Group I ( $p < 0,05$ ).

**Conclusions.** In summary, there is a lesser occurrence of developing complications of pregnancy, partus and better indications of newborn infant's state in case of controlled BA progression under the constant baseline anti-inflammatory therapy. Therefore, achieving an optimal control of BA during pregnancy, being a necessary and top-priority direction of therapy, can make it possible to decrease the occurrence of gestational complications development and to improve generation health state indications.

Data received demonstrate the need of BA primary prevention, including limitation of factor of risk of its developing influence on the perinatal period (antigenic pressure, recrudescence of allergic diseases, development of gestosis, anemia, chronic intrauterine hypoxia, chronic placental insufficiency), on the first year of life (eliminating the risk of developing the intrauterine infection, cerebral ischemia), preventive measures of nutritional, household, epidermal and medical sensibilization, what would allow to decrease manifestation of early asthma and to delay environment factors influence on disease formation in a latter period of infancy.

#### **References:**

1. Lavrova O.V. Clinicodiagnostic and organizational approaches to the managing pregnant women with bronchial asthma as a base of primary prevention of allergic diseases of their children. *autoref. dis. ... d-rmed. science – St. Petersburg, 2009. – 38 p.*
2. Prihodko O.B., Babtseva A.F., Romantsova E.B., Landishev Y.S., Kostrova I.V. The dynamics of clinical progression of mild persistent bronchial asthma during pregnancy // *Breath physiology and pathology Journal, - Blagoveshchensk, 2012. – Issue 46. – P.39-43.*
3. Prihodko O.B., Babtseva A.F., Romantsova E.B. The role of controlled bronchial asthma in developing the pregnancy complications and influence on newborn infants health state // *International Journal on Immunorehabilitation, 2009, book 11, № 1. – 38-39.*
4. Trofimov V.I. Special aspects of bronchial asthma progression and treatment among pregnant women // *New medical information of St. Petersburg. – 2009. - №2. – P.34-37.*
5. Global Initiative for Asthma (GINA). *Global strategy for asthma management and prevention. - 2011. – 108 p.*

## **To the question concerning the pathogenic treatment of chronic obstructive pulmonary disease**

*Rybas E.G., Naryshkina S.V.*

The Amur State Medical Academy, the department of faculty therapy, Blagoveshensk, Russia

**Abstracts:** Chronic obstructive pulmonary disease – is a progressing disease that characterizes in systemic manifestations and mixing with the attendant pathology that determines the prognosis, the severity of the disease, the tactic of treatment and the rehabilitation program. Taking into consideration the fact that chronic inflammation is in the basis of COLD the treatment must involve a strong anti-inflammatory therapy. The application of the new class of preparations – inhibitor phosphodiesterase-4 is the perspective direction. Roflumilast is one of their representatives. The clinical effectiveness of roflumilast in patients with midsevere or severe course