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## Glucocorticoid-sparing properties of $\beta$ -blockers different selectivity for remodeling and inflammation in the bronchi in the rat model of asthma by "dry" insufflations

#### Marina Syrczova

Federal State Budgetary Research Institution Institute of Experimental Medicine, Russia

One of the drawbacks of the standard combination of pharmacotherapy in the treatment of bronchial asthma (BA) is a heterologous and homologous desensitization of beta-adrenergic receptors ( $\beta$ AR) under the influence of beta-agonists. As a means of reducing the severity of this phenomenon is proposed to use beta-blockers. The first 30 days in male rats (n=40) was simulated asthma subcutaneous injection of ovalbumin at a dose of 1 mg/kg intraperitoneal injection of the lyophilized bacterial lysates in a dose of 2.5 mg/kg 1<sup>st</sup> and 7<sup>th</sup> days. On the 14<sup>th</sup> day, in the next 42 days were carried out every 2 days dry using insufflation of Dry Powder Insufflator<sup>\*\*</sup>-Model DP-4 (Penn-Century, USA), ovalbumin (2 mg/kg). On the 30<sup>th</sup> day the animals were divided into eight groups: intact animals, the group without treatment and the 4 groups receiving  $\beta$ AB. Under the action of beta-blockers are used, administered by the dry insufflation in the peripheral blood was observed decrease in the total leukocytes, eosinophils, neutrophils, and lymphocytes, as compared with the control group. Study of lung tissue revealed a decrease in the population of mast cells in the bronchi in bronchial-associated lymphoid tissue in the peripheral blood was observed decreased and during the action of beta-lockers by 1.3 times, 1.5 times lymphocytes, eosinophils in 8 times as well decreased amount of mucus in the lungs. Scintigraphy revealed restoration of  $\beta$ AR in the lungs to the values of the control group. The data obtained allow us to consider the possibility of using  $\beta$ AB, as additional preparation in the basic treatment of asthma to improve control of the symptoms of the disease, potentiating the action of the standard anti-inflammatory therapy.

### **Biography**

Marina Syrczova will defend her PhD dissertation in the autumn of 2016 from the Institute of Experimental Medicine and Saint - Petersburg Chemical-Pharmaceutical Academy. She is a research associate of FSBRI "IEM", Laboratory of functional morphology of the central and peripheral nervous system of the Department of General and Private morphology, teacher Saint - Petersburg Chemical-Pharmaceutical Academy of Department of Pharmacology and Clinical Pharmacology. She has published more than 10 papers in the leading Russian and European journals.

marina.syrczova@mail.ru

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