

Asthma, respiratory allergy and cough

COMBINATION THERAPY with BUDESONIDE and SALMETEROL under the CONDITION of EXPERIMENTALLY INDUCED ALLERGIC INFLAMMATION

*L. Pappová¹, S. Fraňová¹, M. Jošková¹, I. Kazimierová¹, M. Šutovská¹

¹Jessenius faculty of medicine, Comenius University in Bratislava, BioMed Martin, Pharmacology (Martin, Slovakia)

The aim of our study was to determinate bronchodilator, antitussive and ciliomodulatory activity of inhaled combination therapy by budesonide and salmeterol, and correlate the results with its anti-inflammatory effect.

The experiment was performed using two models of allergic inflammation (21 and 28 days lasting sensitization by ovalbumine). Animals were daily treated by aerosols of budesonide (1mM), salmeterol (0,17mM) and their half-dose combination. Antitussive and bronchodilator activity were evaluated in vivo. The ciliary beat frequency (CBF) was assessed in vitro on tracheal brushed samples and inflammatory cytokines (IL-4, IL-5, IL-13, GM-CSF, TNF- α) were determined in bronchoalveolar lavage fluid (BALF).

Combination therapy significantly decreased number of cough efforts, airway reactivity and levels of inflammatory cytokines in both models of allergic asthma. Three weeks lasting sensitization led do increase in CBF and all three therapeutic approaches have shown a ciliostimulatory effect in order: salmeterol<budesonid<combination therapy.

Four weeks ovalbumine sensitization was characterized by decrease in CBF, an increase in levels of IL-5 and drop of IL-13. In this case only combination therapy managed to stimulate CBF.

Half-dose combination therapy of budesonide and salmeterol has shown comparable antitussive, bronchodilator and anti-inflammatory effect as a full dose of budesonide but had a greater effect on CBF.