

## **NEW MODEL OF AIRWAY HYPERREACTIVITY BASED ON HOUSE DUST MITE PARTICLES SENSITIZATION**

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Most widely used model to study cough in sensitised airways is guinea pig sensitized by ovalbumin. The choice of antigen together with the manner of sensitization limits translation of results to clinical conditions and there is need to develop new model of airway hypersensitivity, which could improve translation to human conditions. Most important indoor allergen for people is house dust mite (HDM), most common species being *D. pteronyssius*.

The aim of our study was to develop a model of airway hyperreactivity using mite particles.

10 guinea pigs (Dunkin-Hartley, males) were used to develop HDM model of airway hyperreactivity. Animals were sensitized by 0,25%HDM aerosol (GreerLabs, USA), which they inhaled for 5 min over 5 days, followed by inhalation of 0,5%HDM in same protocol as before. Sensitization was confirmed by skin prick test. In SPT positive animals the symptoms of allergic rhinitis were induced by intranasal application of HDM (0,5%;15µL) and the cough challenges with citric acid (0.1M;0.2M;0.4M) were performed. Airway resistance was measured *in vivo*.

Based on preliminary data, the cough response of HDM-sensitized animals is similar to cough response of OVA sensitized(control/HDM/OVA - 9/16/15 coughs/10 min); so is the cough latency(180s/86s/80s). Airway resistance was increased, but the data did not reach significance level.

Further investigation and modelling is necessary to prepare and validate reliable model. Supported by BIOMED Martin - project co-financed from EU sources & Comenius University Grant No. UK/120/2014