

**THE ACUTE MODEL OF EOSINOPHILIC INFLAMMATION OF THE ESOPHAGUS FOR STUDYING OF VISCERAL AFFERENT NEUROPLASTICITY**

**M Brozmanova**<sup>1,2</sup>, Z Holesova<sup>1</sup>, A Stefanikova<sup>3</sup>, L Mazurova<sup>2</sup>, M Tatar<sup>2</sup>, M Kollarik<sup>1,2,4</sup>

Comenius University in Bratislava, Jessenius Faculty of Medicine in Martin (JFM CU),

<sup>1</sup>Biomedical Center Martin JFM CU and

<sup>2</sup>Department of Pathophysiology JFM CU,

<sup>3</sup>Department of Medical Biochemistry JFM CU, Slovakia,

<sup>4</sup>The Johns Hopkins University School of Medicine, Baltimore, Maryland, USA,  
brozmanova@jfmmed.uniba.sk

Eosinophilic esophagitis (EoE) is a prevalent disease characterized by symptoms (chest and abdominal pain, dysphagia, heartburn, vomiting, and food impaction) mediated by esophageal neural dysfunction. Here we aimed to develop and characterize a guinea pig model of acute eosinophilic inflammation and to evaluate the expression of selected neurotrophic factors in esophageal mucosa. The antigen ovalbumin (OVA, 0.1%) was injected into the surgically exposed cervical esophagus in the OVA-sensitized guinea pigs. Middle portion of the esophagus was harvested at various time points (2-5-14 days) and the eosinophils were evaluated in transversal esophageal sections (12µm) by using Giemsa staining. The expression of neurotrophins (NGF, BDNF) was evaluated by quantitative RT-PCR. OVA injection into the esophagus in sensitized animals resulted in robust eosinophil infiltration of esophageal mucosa ( $97 \pm 24$  eosinophils per hpf,  $n=10$ ,  $p<0.05$ ) on day 2 following the injection. The number of eosinophils was reduced on day 5 ( $27 \pm 16$ ,  $n=4$ ) and further reduced on day 14 ( $10 \pm 6$ ,  $n=3$ ), therefore the day 2 was selected for qRT-PCR analysis. On day 2 the expression of BDNF was 2-fold increased in the inflamed compared to control esophagus. NGF was not changed. This model shows a promise for the analysis of esophageal nerve plasticity in EoE.

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