NEUROEPITHELIAL BODIES OF THE RAT’S LUNGS IN EXPERIMENTAL ASTHMA
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The epithelium of the respiratory tract of mammalian lungs contains pulmonary neuroendocrine cells, represented by both single cells and innervated clusters forming neuroepithelial bodies (NEB). Since NEB are intensively innervated and produce highly specific biologically active substances, such as the bronchoconstrictor serotonin, the level of which increases during hypoxia, it is assumed that these structures can play a key role in the pathogenesis of bronchial asthma (BA).

The purpose of this study was to the detection and analysis of NEB in the lungs with experimental BA. For the study, we used the lungs of sexually mature Wistar rats (n = 5). NEB was detected by monoclonal antibodies to synaptophysin.

It has been found but that in the context of experimental asthma 76.6% NEB were located as part of a simple cuboidal epithelium of small bronchi and respiratory bronchioles. 17.6% of NEB were found in the composition of the epithelial layer and only 5.8% are single NEB in the composition of the epithelium of the small bronchi. At the same time, a greater number of NEB localized in the bronchi were composed of 6 cells (46.2%), 38.5% of 4 cells, and 15.3% of more than 10 cells in one cluster. As in our previous studies, most of the NEB were located in the vicinity of the synaptophysin-immunopositive terminals. Against the background of asthma occurred reduction in the number of large clusters NEB and increased concentrations of medium size of NEB.

The results obtained indicate the effect of inflammation on the functional features of the neuroendocrine system of the lungs and the possible contribution of NEB to the inflammatory cascade in BA.

Keywords: asthma; neuroepithelial bodies; synaptophysin.