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Pathology and treatment of eosinophilic otitis media

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Eosinophilic otitis media (EOM) is an intractable otitis media often associated with bronchial asthma and is characterized by eosinophil dominant, highly viscous middle ear effusion (MEE). EOM is not a fatal disease, but carries a high risk disease of progressive hearing loss. Therefore, it is important early diagnosis and management of appropriate treatment with understanding of the pathology of EOM. In the present study, we investigated the expression of various substances related to allergic/eosinophilic inflammation such as major basic protein (MBP; cytotoxic protein derived from eosinophils), periostin (PN; extracellular matrix protein secreted by fibroblasts in response to IL-4 and/or IL-13), and thymic stromal lymphopoietin (TSLP; key trigger of Th2-type allergic disease) in the middle ear mucosa of EOM patients and animal models which we newly constructed.

TSLP immunoreactivities were observed in the eustachian tube epithelium, MBP was shown on the eosinophils in middle ear mucosa and outer side of epithelial cells, and PN is observed in the subepithelial layer of granulated middle ear mucosa. These results indicate that TSLP secreted from the epithelial cells of eustachian tube induces Th2-type inflammation involved in eosinophilic infiltration and formation of granulation via PN. Our concept of treatment for EOM is as follows: the removal of the MEE infiltrated with numerous eosinophils, and the suppression of the local and systemic eosinophilic inflammation. Regarding the management of the acute phase, topical and/or systemic steroids are effective. Regarding long-term management, a combination of several kinds of anti-allergic drugs is beneficial for cessation of steroids.

Biography

Atsushi Matsubara graduated from Hirosaki University School of Medicine in 1987, and received his PhD at Hirosaki University Graduate School of Medicine in 2003. He is the chairman and professor of the department of Otorhinolaryngology, Hirosaki University Graduate School of Medicine from 2015.

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