

MEETING ABSTRACT

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# Mechanisms of asthma and allergic disease – 1084. Localization and up-regulation of CysLT<sub>2</sub> receptor in perennial allergic rhinitis

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## Background

The cysteinyl leukotrienes (CysLTs) are lipid mediators that have been implicated in the pathogenesis of allergic rhinitis. Pharmacological studies using CysLTs indicate two classes of receptors named CysLT<sub>1</sub> and CysLT<sub>2</sub> receptor exist. The former is sensitive to the CysLT<sub>1</sub> receptor antagonists currently used to treat asthma and allergic rhinitis. We have previously reported the localization of CysLT<sub>1</sub> receptor by using immunohistochemistry and in situ hybridization. To clarify the expression of CysLT<sub>2</sub> receptor in human nasal mucosa, we investigated the expression and the localization of CysLT<sub>2</sub> receptor in human nasal mucosa by means of Western blot analysis and immunohistochemistry.

## Methods

Human turbinates were obtained by turbinectomy from 12 patients with nasal obstruction refractory to medical therapy. CysLT<sub>2</sub> receptor expression on nasal mucosa was studied by Western blot analysis and immunohistochemistry. Also, to investigate the possible modulation of CysLT<sub>2</sub> receptor expression, human umbilical vein endothelial cells (HUVECs) were stimulated with IL-4 or IL-13, and CysLT<sub>2</sub> receptor expression were evaluated by Western blot analysis.

## Results

About 40kDa band was detected in human turbinates by western blot analysis using anti-CysLT<sub>2</sub> receptor antibody. The expression level of CysLT<sub>2</sub> receptor protein was marked in patients with nasal allergy than in patients with non-allergic rhinitis. The immunohistochemical study

revealed that both vascular endothelial cells and vascular smooth muscles showed intense immunoreactivity for CysLT<sub>2</sub> receptor. IL-13 enhanced the levels of CysLT<sub>2</sub> receptor protein in HUVECs.

## Conclusions

The results suggest a primary role for CysLT<sub>2</sub> receptor as the vascular responses in upper respiratory tract, and vascular CysLT<sub>2</sub> receptor expression can be regulated by Th2 cytokines.

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