

Letter to the Editor Regarding “Sublingual Immunotherapy Attenuates Nasal Symptoms upon Allergen Exposure in Murine Allergic Rhinitis Model via an Induction of IL-10 producing T cells in Submandibular Lymph Node”

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Dear Editor,

I immediately read with great attention and interest the significant and well-presented article recently published in an issue of this journal by Qu and colleagues entitled “Sublingual Immunotherapy Attenuates Nasal Symptoms upon Allergen Exposure in Murine Allergic Rhinitis Model via an Induction of IL-10 producing T cells in Submandibular Lymph Node”,¹ demonstrating that sublingually introduced antigens can actually attenuate nasal symptoms in a murine allergic rhinitis model upon allergen exposures. Furthermore, their immunological data might indicate an important role of Interleukin-10 producing T cells in submandibular lymph node to control nasal allergic reaction. We completely agree with their landmark conclusions. Their study can provide valuable lessons for the therapy of rhinitis.

There is compelling evidence of a close relationship between rhinitis and asthma.^{2–4} Epidemiological studies have shown that most of patients with asthma have concomitant rhinitis and the presence of rhinitis is an increased risk factor for development of asthma.^{2–4} Patients with asthma and rhinitis share common physiopathologic mechanism including heightened airway hyperresponsiveness and heightened reactivity to lots of stimuli.^{2–4} Therapeutic studies have demonstrated that the treatment of rhinitis can improve asthma and vice versa. Recently, in Boonpiyathad’s study, asthma treatment in high altitude simultaneously improved asthma control, forced expiratory volume in 1 second (FEV1) and exhaled nitric oxide (FeNO), while modifying the immunological characteristics of effector cells known to contribute to eosinophilic and allergic inflammation.² Accordingly, we hypothesize that high altitude therapy is an effective treatment for rhinitis.

High altitude therapy is a well-established therapeutic option, which improves clinical symptoms in the patients with asthma. Research studies have indicated that high

altitude therapy can reduce the local airway inflammation and systemic activation of T cells and monocytes in asthma patients.⁵ Furthermore, it is shown that allergen avoidance is not the only factor in high altitude therapy, it appears possible that cells other than allergen-specific T cells also contribute to the beneficial treatment effect.⁵ The efficacy of high altitude therapy in treating asthma patients can be explained by several mechanisms: house dust mites allergen level decreases as altitude increases (allergen avoidance), moving away from stress and work or family-related conflicts (less mental stress), less particle exposure, increased cortisol and catecholamine level, the dry air and high ultraviolet light exposure. All these mechanisms are thought to be beneficial to the therapy of rhinitis.

Additional studies are indeed needed to investigate the safety and effectiveness of high altitude therapy for rhinitis. Such knowledge would not only reinforce the clinical relevance of high altitude effects on rhinitis but also enable therapeutic recommendations.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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References

1. Qu Y, Yamada T, Aoi N, et al. Sublingual Immunotherapy Attenuates Nasal Symptoms upon Allergen Exposure in Murine Allergic Rhinitis Model via an Induction of IL-10 producing T cells in Submandibular Lymph Node. *Ann Otol Rhinol Laryngol*. 2019;128(suppl 6):26S-35S.
2. Boonpiyathad T, Capova G, Duchna HW, et al. Impact of high altitude therapy on type-2 immune responses in asthma patients [published online July 3, 2019]. *Allergy*. 2019. doi:10.1111/all.13967
3. Bousquet J, Vignola AM, Demoly P. Links between rhinitis and asthma. *Allergy*. 2003;58(8):691-706.
4. Hansen JW, Thomsen SF, Nolte H, et al. Rhinitis: a complication to asthma. *Allergy*. 2010;65(7):883-888.
5. Karagiannidis C, Hense G, Rueckert B, et al. High-altitude climate therapy reduces local airway inflammation and modulates lymphocyte activation. *Scand J Immunol*. 2006;63(4):304-310.