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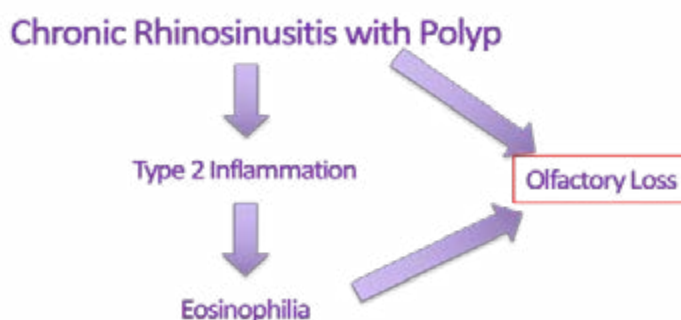
Persistent olfaction loss is directly associated with eosinophilic infiltration during chronic rhino sinusitis with nasal polyp

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Abstract

Chronic rhino sinusitis (CRS) is a common medical condition that leads to almost 14 million physician visits and 250,000 sinus surgeries annually in the United States. CRS is divided into two main phenotypes, CRS with nasal polyps (CRSwNP) and CRS without nasal polyps (CRSsNP). Patients with CRSwNP experience significant loss of olfaction even after endoscopic sinus surgery. However, the molecular mechanism behind this olfaction loss during CRS has not been completely understood. To determine the underlying mechanisms of persistent olfactory loss, we developed a novel sponge-based method for collecting nasal secretions to identify the associated biomarkers. In addition, we identified the eosinophilic biomarkers in the nasal mucus of patients suffering from CRS and established a direct correlation between eosinophilic infiltration and smell loss. The eosinophil biomarkers from olfactory biopsies were also directly correlated with olfactory dysfunction and are better indicators than clinical parameters like the presence of polyps and radiographic opacification. The result from this study identified the biomarkers and mechanisms of olfactory dysfunction in CRS that will potentially identify new therapeutics for the management of this condition and for modulation of the olfactory dysfunction associated with it.



Correlation between CRS, type-2 inflammation and eosinophilia with persistent olfactory loss

Biography

Dr. Gujar's primary research focuses on understanding the cellular and molecular mechanisms underpinning chronic inflammatory diseases. Dr. Gujar did his bachelor's and master's in biotechnology in India and pursued his Ph.D. in Biomedical Sciences from the Oklahoma State University Center for Health Sciences. His Ph.D. work with Dr. Kenneth Miller established the critical role of the nerve growth factor signaling in converting acute to chronic inflammation. Currently, Dr. Gujar is working as a Postdoctoral Fellow with Dr. Bruce Tan at the Department of Otolaryngology, Feinberg School of Medicine, and Northwestern University. At Northwestern, his research is focused on studying the role of exosomes in intercellular communication and olfactory dysfunction during chronic sinonasal inflammation.

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