

Endotyping of nasal polyps in a multiracial Asian population

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Abstract

Objectives Chronic rhinosinusitis is a heterogenous disease with variation in the endotypes of nasal polyps, with type 2 inflammation being more prevalent in Caucasian populations and papers describing as many as 5 different types of inflammation in Chinese populations. We aim to describe the variation in endotypes for patients with chronic rhinosinusitis with nasal polyposis in our unique multiracial population, together with associated demographic and clinical biomarkers. **Design:** Retrospective analysis **Setting and Participants:** Demographic, clinical and structured histopathological data of 67 patients who underwent sinus surgery for nasal polyposis by a single surgeon in Singapore General Hospital were evaluated. **Results:** In our population, 46.2% had eosinophil-predominant disease, and 53.7% had lymphoplasmacytic disease, with no significant demographic differences between the 2 populations. There were significantly higher peripheral eosinophil levels in patients with eosinophil predominant inflammation on tissue histology (absolute eosinophil count $0.69 \pm 0.17 \times 10^9$) vs lymphoplasmacytic disease ($0.22 \pm 0.09 \times 10^9$) ($p = 0.00$). Structured histopathological reporting revealed that patients with eosinophilic disease tended to have more severe inflammation and basement membrane thickening, though this did not reach statistical significance. **Conclusion:** Understanding the underlying inflammatory patterns of patients with nasal polyposis paves the way to personalised therapy and better prognostication of disease. Our population is shown to have a slight preponderance toward lymphoplasmacytic disease, especially amongst the Chinese majority. Serum eosinophilia and the presence of asthma seems to correlate well with tissue eosinophilia, which can potentially be utilised as a marker of type 2 inflammatory disease.

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