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## Role of CRTH2 in Eosinophil Infiltration of Recurrent Nasal Polyps

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**Background:** Chronic rhinosinusitis with nasal polyps (CRSwNP) is a difficult-to-treat disease that is often characterized by recurrent nasal polyp (NP) growth even following surgical removal, but the mechanisms that underlie the pathogenesis of polyp recurrence are still not clear.

**Objectives:** The aim of this study was to investigate the expression of chemoattractant receptor-homologous molecule expressed on Th2 cells (CRTH2) receptor on eosinophils of patients with nasal polyps and the role it plays in eosinophil infiltration and nasal polyp recurrent.

**Methods:** mRNA was extracted from recurrent nasal polyp, nasal polyps, control group and evaluated for expression of CRTH2. Immunofluorescence staining was performed to confirm the expression of CRTH2 protein. CRTH2 expression on peripheral blood eosinophils was quantified by flow cytometry as being side scatterhigh, CD16-, Siglec8+ and CRTH2+.

**Results:** Gene expression analysis revealed that nasal polyps display increased level of CRTH2 compared with control samples, with the highest expression showed in the recurrent nasal polyps. Immunofluorescence confirmed the higher expression of CRTH2 on eosinophils of recurrent nasal polyps, which correlated with the number of tissue eosinophils. Peripheral blood eosinophils from recurrent nasal polyps displayed higher expression of CRTH2 which is confirmed by flow cytometry.

**Conclusion:** The PGD2-CRTH2 pathway may play an important role in eosinophil infiltration in nasal polyps, which may play an important role in nasal polyp recurrence. These results open channels for therapeutic modalities targeting CRTH2 molecules in recurrent nasal polyps.

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