IL10  Eosinophilic rhinosinusitis: Categorization and management

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Patients with eosinophilic chronic rhinosinusitis (ERS) are rightfully considered the most refractory to management. While their disease will usually respond to steroids, regardless of the underlying trigger, the side effects incurred with prolonged systemic steroids are great. ERS patients can be categorized based on associated pathogens, such as fungus or bacteria, which can aid in directing nonsteroidal therapies that target the underlying presumed causative factor. Difficulties in this approach include the incidental occurrence of fungus and bacteria in even nondiseased noses. Hypothetically, in some patients bacteria through the action of superantigens may be important in the development of Allergic Fungal Sinusitis (AFS) and even Aspirin Exacerbated Respiratory Disease (AERD). In the early 2000's fungal causes were thought to account for the majority of cases of ERS based on several well-conducted trials, we know that antifungal medications are ineffective in an unselected ERS patients. Antifungal therapy limited to patients with AFS with a control has not been studied. The larger side of ERS categorization comprises cases without fungus, patients with AERD and patients with food hypersensitivities. Many more patients with ERS have unknown triggers and can merely be categorized as what they are not, “non fungal, non aspirin sensitive, eosinophilic CRS”. Therapeutic strategies in which known triggers are present include therapies targeted to the trigger including: systemic or topical antifungals for fungus associated ERS, omalizumab (anti IgE) for patients with elevated total peripheral IgE, leukotriene modulators particularly to inhibit 5 Lipoxigenase (zileuton), topical or systemic culture directed antibiotics for bacterial associated ERS, elimination of foods from diet if they are associated with triggering ERS. For almost all ERS patients steroids will reduce the burden of disease. Surgery is an unreliable intervention, with recurrence common, however it can also be quite effective, and occasionally curative, and usually allows a post operative improved distribution of topical medications and nasal washings. A recent study showed excellent efficacy in eosinophilic asthma and associated nasal polyps, with dupilumab, a monoclonal antibody directed against the IL4 receptor α subunit that inhibits both IL-4 and IL-13 signaling. In the future we may hope for improved diagnostic tools and targeted therapies for this refractory entity, but until then we must remain expert in the modalities currently at hand, that optimally used can significantly improve the symptoms and disease burden of these patients.