

Co-morbidities of Asthma: Rhinitis

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Allergic rhinitis (AR) and asthma are the most common atopic diseases with an increasing prevalence to epidemic proportions. IgE-mediated inflammation of the airways can either manifest as AR, asthma or both. However, many patients with asthma have rhinitis, and rhinitis is a major risk factor for asthma and allergic rhinitis often precedes asthma. The increasing evidence on the links between allergic rhinitis and asthma comes from epidemiologic, immunologic and clinical studies. Epidemiologically, up to 40% of patients with AR also have asthma, and up to 80% of patients with asthma experience nasal symptoms. AR has been shown to increase the risk of asthma three-fold. Moreover, AR is linked to other co-morbid conditions like rhinosinusitis, nasal polyps and otitis media with effusion.

Both AR and asthma are chronic inflammatory diseases of the airways and their inflammatory mechanisms are characterized by an inflammatory infiltrate made up of eosinophils, T cells, and mast cells that release several mediators, chemokines and cytokines, local and systemic IgE synthesis, and a systemic link via the bone marrow. Studies have shown that patients with AR exhibit bronchial hyper-responsiveness (BHR) and increase in inflammatory cells, and that nasal allergen challenge further increases this hyper-reactivity. This potential link may be due to cross talk between the upper and lower airway, the direct impact of inflammatory mediators released locally and the systemic link between the two. Treating the underlying inflammation is key to relieving symptoms and reducing consequences and co-morbidities in patients with AR.

The consequences of untreated AR can include amongst other decreased cognitive functioning, impaired quality of life, and impaired work or school productivity. Moreover, the impact on costs, frequency of emergency room visits, hospitalization and quality of life is greater if AR is associated with asthma as compared to asthma alone. Treating AR in patients with asthma and co-morbid AR has been shown to reduce hospitalization by 61%. However, AR is often under-diagnosed and under-treated. Thus there was clearly a need for a global evidence-based document which would highlight the interactions between the upper and lower airways including diagnosis, epidemiology, common risk factors, management and prevention. The Allergic Rhinitis and its Impact on Asthma (ARIA) document was first published in 2001 as a state-of-the-art document for the specialist, the general practitioner and other health care professionals. The pharmacological treatment of AR proposed by ARIA is an evidence-based and step-wise approach comprising of patient education, allergen avoidance, pharmacotherapy and allergen specific immunotherapy.

In conclusion, a vast majority of patients with asthma have rhinitis, and rhinitis is a major independent risk factor for asthma in cross-sectional and longitudinal studies. Although there are cardinal structural differences between the nose and the lungs, these experimental and real life observations on the link between rhinitis and asthma outweigh the differences and lend support to the concept that rhinitis and asthma may be considered as manifestations of one syndrome that has a wide spectrum of severity. Successful management of this chronic allergic respiratory syndrome requires an integrated view of the airways, understanding of their interactions and an integrated approach of treatment also targeting systemic inflammation.