

ALLERGIC INFLAMMATION AND BRONCHIAL OBSTRUCTION: A FOCUS ON ASTHMA

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Abstract. Introduction. Bronchial Obstruction Syndrome (BOS) remains one of the most common reasons for patients to seek medical attention from general practitioners, pulmonologists, or allergists. BOS is a complex of clinical manifestations resulting from generalized narrowing or obstruction of the airway lumen of various etiologies.

Aim. To summarize current data on the mechanisms of allergic inflammation in asthma and its role in the development of chronic bronchitis, as well as to analyze current diagnostic approaches to asthma based on a clinical case.

Materials and Methods. An analysis of current scientific publications, international guidelines, and clinical studies on the immunopathogenesis of asthma and the mechanisms of allergic airway inflammation was conducted.

The results. In modern clinical practice, bronchial obstruction is not merely a functional narrowing of the airways but rather a manifestation of a chronic inflammatory process, which in most cases has a complex immunopathogenic basis resulting from an imbalance among various components of the immune system and persistent airway inflammation. Allergic inflammation in asthma is a complex immunopathological process involving various immune cells, including mast cells, eosinophils, basophils, T lymphocytes, and innate lymphoid cells. Epithelial cytokines, such as TSLP, IL-25, and IL-33, play a key role in initiating the inflammatory process by activating the Th2 inflammatory cascade. Understanding the mechanisms of allergic inflammation, asthma phenotypes, and current approaches to disease management enables clinicians not only to alleviate symptoms but also to influence disease progression, thereby improving patient prognosis and quality of life. Chronic airway inflammation leads to the development of bronchial obstruction, which results from bronchial smooth muscle spasm, mucosal edema, and mucus hypersecretion. Persistent inflammation also leads to structural changes in the airways, known as bronchial remodeling. This article presents a clinical case of bronchial obstruction syndrome.

Conclusions. Understanding the molecular mechanisms of allergic inflammation facilitates the implementation of modern targeted therapeutic approaches for asthma, opening new opportunities for personalized patient care.

Key words: bronchial obstruction syndrome, asthma, allergic inflammation, diagnosis of bronchial obstruction syndrome, treatment.
