

Correspondence

Role of various cell types on asthma symptomology

To the Editor:

The article by Backer¹ titled “Mannitol and the mechanism behind bronchoconstriction” provides a brief overview of bronchial response to different indirect agents including mannitol and exertion. But, the statement “it has not been documented that different types of cells are related to the specific symptoms in asthmatic patients” requires more insight.

The principal symptoms of asthma include shortness of breath and wheezing, recurrent cough, and excessive airway mucus production.² The intensity of these symptoms varies from one individual to others, and it depends on the integrated response of conductive airways of lungs to various triggers. Many different cell types are considered to play an important role in asthma and allergic inflammation. Dysregulation in the interaction between mucosal epithelial cells and innate immune cells is regarded as the underlying cause of asthma.³ Hence, the association between different types of cells and asthma symptomology is undeniable.

Robinson et al⁴ had demonstrated the association of T lymphocytes in bronchoalveolar lavage fluid atopic asthmatic patients with bronchial hyperresponsiveness in atopic asthmatic patients. They found an increased expression of T_H2-type cytokines, especially IL-4 and IL-5, when compared with normal subjects. This pattern of cytokines may indicate the character of cellular infiltrate in the bronchial mucosa, thereby leading to bronchial hyperresponsiveness in patients with asthma.⁴

Mucous metaplasia (increased production and accumulation of mucin) is another hallmark symptom of asthma. The role of transdifferentiation of ciliated cells in the formation of mucus-producing cells is discussed by Pardo-Saganta et al.⁵ All these studies demonstrate the role of different cell types in symptoms related to asthma. Even though most of the symptoms of asthma are also associated with other airway diseases, most of these studies were conducted on asthma models and patients with asthma. Hence, it is not ideal to conclude that there is no documentation available on the association of different cell types with symptoms of asthma.

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Disclosure of potential conflict of interest: The author declares no relevant conflicts of interest.

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<https://doi.org/10.1016/j.jaci.2019.11.050>