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Asthma Patients with Fixed Bronchial Obstruction

Thomas Rothe

Zürcher Höhenklinik, Davos, Switzerland

The paper of Al-Kassimi et al. [1], published in a recent issue of *Respiration*, highlighted the fact that asthma patients may fulfil the Global Initiative for Chronic Obstructive Lung Disease (GOLD) criteria of COPD where inhaled glucocorticosteroids (ICS) are clearly indicated [2]. Reversing the fixed obstruction with ICS helped to identify some asthmatics in the COPD group of Al-Kassimi et al. [1].

For years, pharmaceutical industry advertisements promoted the idea of treating both COPD and asthma with a combination of ICS and long-acting β -agonists. With this approach, in the rich countries of Western Europe, the patients in the Al-Kassimi et al. study [1] would have been routinely identified. However, due to financial limitations and data showing a higher incidence of pneumonia in ICS-treated COPD patients, the use of ICS in COPD may decrease.

I would like to focus on a related problem: a group of asthma patients with fixed bronchial obstruction exists, who only respond to higher doses of oral steroids. This phenotype was called the 'drifter type' by Turner-Warwick in 1977 [3], describing asthma patients with slowly decreasing peak-flow values without a significant variability in peak flow. In 2008, Haldar et al. [4] published a cluster analysis identifying the different phenotypes of asthma. One was named 'eosinophilic inflammation-predominant'. In this case, a striking discordance between the intensity of airway inflammation and asthma symptoms could be observed. Obviously, Turner-Warwick [3] and Haldar et al. [4] described the same type of asthma patient suffering from progressive bronchial swelling, exertional dyspnea and a lack of typical asthma features like acute attacks, signs of bronchial hyperreactivity and reversibility to short-acting β -agonists. Bearing in mind that the inflammation-predominant type of asthma often manifests in adulthood, a history of smoking is a common finding. Overall, past smoking habit and/or active smoking is reported in up to 50% of elderly asthma patients [5]. Clinical features and a history of smoking may confound this asthma phenotype and COPD. However, the diagnosis of asthma should be made based on the fact that these patients usually not only need ICS, but daily treatment with oral steroids, to remain close to their individual best FEV₁. An elevated fractional exhaled nitric oxide level and eosinophilia in the sputum and white blood-cell count may help to identify these patients.

Fig. 1. Spirometry showing the lung function of a predominant inflammation-type asthmatic with fixed obstruction completely reversible after an oral steroid trial of 14 days with a 40-mg prednisolone equivalent. When reducing the oral dose to below 5 mg daily – in addition to high-dose ICS – he again developed a drop in prebronchodilator and postbronchodilator FEV₁ of 0.7 liters, as well as blood eosinophilia of 7% and an elevated fractional exhaled nitric oxide value of 47 ppb (normal value <25 ppb). The 48-year-old male, having smoked cigarettes for 30 pack-years, suffered from progressive exertional dyspnea without acute attacks prior to the steroid trial. The clinical picture mimicked COPD and obscured the necessity of an intense daily ICS treatment due to severe steroid-dependent eosinophilic asthma.

References

- Al-Kassimi FA, Abba AA, Al-Hajjaj MS, Alhamad EH, Raddaoui E, Shaikh SA: Asthma masquerading as chronic obstructive pulmonary disease: a study of smokers fulfilling the GOLD definition of chronic obstructive pulmonary disease. *Respiration* 2011;82:19–27.
- Barnes PJ: Inhaled glucocorticosteroids in COPD: a controversy. *Respiration* 2010;80:89–95.
- Turner-Warwick M: On observing patterns of airflow obstruction in chronic asthma. *Br J Dis Chest* 1977;71:73–86.
- Haldar P, Pavord ID, Shaw DE, et al: Cluster analysis and clinical asthma phenotypes. *Am J Respir Crit Care Med* 2008;178:218–224.
- Bauer BA, Reed CE, Yunginger JW, et al: Incidence and outcome of asthma in the elderly: a population-based study in Rochester, Minnesota. *Chest* 1997;111:303–310.