The Diagnosis of "Current Asthma" for the Research Asthmatic

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Abstract

The diagnosis of asthma is a constantly changing and depends on evolving knowledge. The classic diagnosis of asthma promulgated by the American Thoracic Society many years ago was: "a disease characterized by an increased responsiveness of the trachea and bronchi to various stimuli and manifested by a widespread narrowing of the airways that changes in severity either spontaneously or as a result of therapy." (1). With increased awareness of the inflammatory component of asthma and its interrelationship with airway hyperresponsiveness a more recent and broader definition of asthma is now embraced. This definition has the following three components: (1) airway obstruction that is usually (may not be totally reversible in some long-standing asthmatics) completely reversible either spontaneously or with treatment; (2) airway inflammation; (3) increased airway responsiveness to a variety of stimuli (2).

DISCUSSION

From the general practitioner's perspective in the office setting, this definition is a bit much and not practical. They usually rely on a history of episodic wheezing, episodic cough, and recurrent shortness of breath that is relieved with bronchodilators. Chest radiography to rule out other causes of wheezing and referral for allergy testing may be done over time depending on many factors. A consulting specialist in asthma may obtain pulmonary function tests to follow lung function over time and determine if there is a bronchodilator response to therapy in a subset of cases. This clinical definition of asthma serves the community well and treats the “wheezers”.

The emphasis on “current asthma” is also important from the perspective of asthmatic subjects who lose their bronchial hyperresponsiveness over time (3). Since asthma is a product of both genetic background and the environment, it is possible that the inflammation or other component that resulted in the initial hyperresponsiveness was alleviated with resolution of asthma as a diagnosis. Although this probably does not occur in most asthmatics, using this research diagnosis of asthma takes into account the possibility of a waxing and waning of the disease. This prevents enrollment of asthmatics who may not currently be asthmatic as well as those with the wrong diagnosis.

An addition to the “current asthma” diagnosis for the research asthmatic should be the asthmatic who cannot undergo a test of bronchial hyperresponsiveness due to a reduction in lung function. An alternative and safer test in this instance would be reversibility to a bronchodilator. A threshold might be the asthmatic with less than 60% predicted FEV1 prior to a methacholine challenge. An improvement in lung function after bronchodilator use of at
least 12% would suggest the active asthmatic with ongoing disease. This type of subject would be well defined for treatment purposes and would be hard to refute as a subject without asthma. In addition, this type of “current asthmatic” is the one who should be “currently” treated since they are demonstrating active disease through such tests.

A comment should be added regarding smoking. All that has been discussed is related to the nonsmoking asthmatic enrolled in research studies. In general and ideally, research studies looking only at asthma outcomes prefer to exclude smokers. This removes a potential confounding factor in the analysis. However, if smokers are included they are generally only included if they have a long history of asthma, have smoked less than 10-pack-years lifetime, and have not smoked in the last year. In addition, they should still need to meet the “current asthma” definition as noted above.

**CONCLUSIONS**

In conclusion, we suggest that for future “research studies” in asthmatics an unequivocal diagnosis of asthma encompass the “current asthmatic”. This asthmatic has a history of wheezing in the last year and either (preferably) bronchial hyperresponsiveness on methacholine challenge or a positive bronchodilator response to inhaled -agonist therapy. This diagnosis is objective in nature for comparative purposes, maximizes the chances that the asthma is currently active and not just a history, and should serve researchers well until more knowledge redefines what an asthmatic is.

**References**

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