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EDITORIAL

Is Asthma Really Different in the Elderly Patient?

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Bronchial asthma is a surprisingly heterogeneous condition that is modified in each individual patient by environmental factors, degree of reversibility, associated disease states, and individual response to medication and dosage—as well as, of course, by age (1). With an increasing proportion of individuals surviving until the seventh or eighth decade, treatment of the elderly asthmatic has become a common office problem. Age can be an important factor in determining prognosis because of the increased likelihood of associated cardiovascular disease and the complications of prior pulmonary disorders, i.e., influenza, pneumonia, emboli. The article by Traver and her associates in this issue of the *Journal of Asthma* reviews some of the important epidemiological data related to this increasingly important subject.

Estimates of prevalence of asthma differ greatly from country to country and even within the same country because of the variable criteria employed to establish the diagnosis. Large community studies offer the best insight into this issue. Broder et al. published one such study in the 1970s based on the community of Tecumseh in Michigan (2). Results from the latter study were remarkably

similar to a later study in Phoenix, Arizona (3). Both these studies show a peak of asthma prevalence between 8 and 10% in childhood, declining to about 5% in early adulthood, and rising again to between 7 and 9% in the elderly population. It has been variously estimated that between 27 and 38% of adults with childhood remission of asthma have recurrence of disease after 45 years of age (4–6).

Since many cases of childhood asthma either persist or recur, it seems likely that the original pathogenetic factors persist in some degree into adult life. There is a demonstrated correlation between the development of positive skin tests to ingestants, and later inhalants, and the subsequent evolution of asthma in childhood (7). The severity of childhood asthma has also been shown to correlate with the presence of skin-sensitizing antibody (8). Although the most common pathogenetic mechanism in childhood asthma is an allergic response to environmental allergens, this is not true to the same degree for the elderly asthmatic (9). Persistence of skin-sensitizing antibody may be observed on skin testing, but its role in initiating symptomatic asthma is not a major

factor in the majority of older asthmatics (10,11). In this respect, it is important to be critical in the interpretation of allergy skin tests in this population (12).

In an analysis of 283 cases of nonallergic adults with bronchial asthma, Rackemann noted that the condition was frequently precipitated by a viral respiratory infection in the majority of subjects (13). Some developed asthma as part of aspirin idiosyncrasy syndrome, with associated sinusitis and polypsis. Viral infections also play a role in the precipitation of asthma in children. Respiratory syncytial virus and parainfluenza virus are common in children, whereas adults are more often affected by rhinovirus and influenza.

Most elderly patients with asthma have some degree of chronic irreversible obstructive disease. Recent studies have reported larger-than-predicted reductions in pulmonary function parameters in the older asthmatic, supporting the hypothesis that chronic asthma may lead to some irreversible airflow obstruction (14). Many of these patients have been prior smokers and have elements of chronic bronchitis and emphysema (10,15,16). Chronic tobacco abuse significantly complicates the whole issue of asthma diagnosis. Other patients in this age group may have secondary lung pathology associated with a variety of protracted industrial exposures. Chronic sinusitis with and without aspirin intolerance is also a frequent complicating infectious disorder affecting the progression and severity of underlying asthma (17). In addition to the presence of underlying pulmonary disease, the elderly have a greater likelihood of complicating cardiovascular disease (18). In particular, asthma and systemic hypertension frequently coexist, and treatment of the latter and asthma may be complicated by drug interactions between antiasthmatic and antihypertensive agents. Finally, cardiac failure may masquerade as asthma and, in a patient with pre-existing asthma, may confuse the unwary examiner.

Diagnosis of *de novo* asthma in the elderly patient may present a significant challenge to the clinician. Recent studies suggest the con-

dition is significantly underdiagnosed (19). The predominant presenting symptom is persistent cough (19). A lucid, meaningful history may be difficult to obtain in the presence of confusion, depression, and dementia in the elderly patient (20). Clearly, the evaluation of the older patient with persistent respiratory symptoms should elicit a high index of suspicion, particularly in the never-smoker. The judicious use of pulmonary function studies with bronchodilators can be especially helpful in reaching a diagnosis (21). Connolly et al. concluded that the measurement of bronchial hyperresponsiveness using methacholine inhalation challenge is not only feasible, but clinically valuable, in many subjects over age 65 (21).

In considering various types of treatment, patient differences in pathogenetic mechanisms, metabolism of drugs, preexistent disease, and tolerance for certain classes of drugs must be seriously considered (11). This is especially true in the elderly asthmatic. The crux of any successful therapeutic program depends on careful education of the patient. Many elderly patients who develop *de novo* asthma are confused about why their disease developed. Many erroneously believe that they suddenly developed an environmental allergy, which, if uncovered and eliminated, would "cure" their asthma. Although this may be true in a small number of patients, it is not the case in the majority (9-13). The patient's expectations for improvement should be discussed to ensure they are realistic. Extra time should be taken to explain the likely pathogenesis of the disease and its tendency to worsen with viral infections, sinusitis, environmental irritants, cold air, gastrointestinal reflux, exposure to certain drugs, and occasionally by psychic upset. The elderly patient should also be informed that asthma tends to worsen during sleeping hours and that much of their pharmacological program may be directed at achieving nocturnal protection. Finally, older asthmatics should be educated on the nature of the drugs they are given and how they work. Careful evaluation of how they use metered-dose inhalers will yield dividends in their later course. They should have some

written literature explaining medication side effects (11). Recent studies have shown that appropriate comprehensive care of the elderly asthmatic patient should also encompass aggressive psychosocial as well as somatic interventions (22).

In summary, we are likely to see an increasing proportion of the elderly with bronchial asthma. Some of these patients will have had lifelong asthma, others a reappearance of childhood asthma, and still others will have developed de novo adult asthma. Pathogenetic factors are different in the elderly than in a younger population. Although atopy may be a genetic characteristic, the role of environmental allergens in the induction and perpetuation of geriatric asthma is uncommon. Viral infection and chronic sinusitis play a much larger role in the initial presentation and subsequent exacerbations of geriatric asthma. In contrast to childhood asthma, the elderly patient is more likely to have other complicating disease, in particular, the presence of chronic bronchitis and emphysema. Diagnosis and treatment may present unique challenges to the clinician. Although clearly an integral part of a continuum of disease, asthma in the elderly patient may be quite different!

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