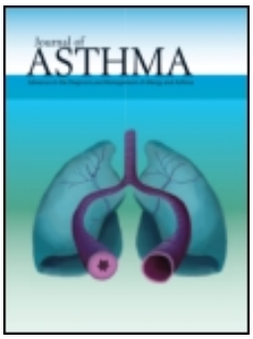

Journal of Asthma

ISSN: 0277-0903 (Print) 1532-4303 (Online) Journal homepage: informahealthcare.com/journals/ijas20

Is Asthma Really Different in the Elderly Patient?

Emil J. Bardana

To cite this article: Emil J. Bardana (1993) Is Asthma Really Different in the Elderly Patient?, Journal of Asthma, 30:2, 77-79, DOI: 10.3109/02770909309054501

To link to this article: https://doi.org/10.3109/02770909309054501

Journal of Asthma, 30(2), 77–79 (1993)

EDITORIAL

Is Asthma Really Different in the Elderly Patient?

Emil J. Bardana, Jr., M.D.

Department of Medicine
Division of Allergy and Clinical Immunology
The Oregon Health Sciences University
Portland, Oregon

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 idiosyncracy syndrome, with associated sinusitis and polyposis. 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 preexisting 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 condition 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!

REFERENCES

1. Aas K: Heterogeneity of bronchial asthma: subpopulations—or different stages of the disease? *Allergy 36*:3–16, 1981.
2. Broder I, Higgins MW, Mathews KP, et al: Epidemiology of asthma and allergic rhinitis in a total community. Tecumseh, Michigan. IV. Natural history. *J Allergy Clin Immunol 53*:127–138, 1974.
3. Dodge RR, Burrows B: The prevalence and incidence of asthma and asthma-like symptoms in a general population sample. *Am Rev Respir Dis 122*:567–575, 1980.
4. Blair H: Natural history of childhood asthma: 20 year follow-up. *Arch Dis Child 52*:613–619, 1977.
5. Ryssing E: Continued follow-up investigation concerning the fate of 298 asthmatic children. *Allergy 14*:433–444, 1959.
6. Burney PGJ, Britton JR, Chinn S, et al: Descriptive epidemiology of bronchial reactivity in an adult population: results from a community survey. *Thorax 42*:38–44, 1987.
7. Van Asperen PP, Kemp AS: The natural history of IgE sensitization and atopic disease in early childhood. *Acta Pediatr Scand 78*: 239–245, 1989.
8. Zimmerman B, Feanny S, Reisman J, et al: Allergy in asthma. I. The dose relationship of allergy to severity of childhood asthma. *J Allergy Clin Immunol 81*:63–70, 1988.
9. Braman SS, Kaemmerlen JT, Davis SM: Asthma in the elderly. A comparison between patients with recently acquired and longstanding disease. *Am Rev Respir Dis 143*:336–340, 1991.
10. Lee HY, Stretton TB: Asthma in the elderly. *Br Med J 4*:93–95, 1972.
11. Bardana EJ: Treating the elderly asthmatic patient. *Comprehen Ther 10*:15–23, 1984.
12. Bardana EJ: What characterizes allergic asthma? *Ann Allergy 68*:371–373, 1992.
13. Rackemann FM: Intrinsic asthma. *J Allergy 11*:147–162, 1940.
14. Barley WC, Richards JM Jr, Brooks CM, et al: Features of asthma in older patients. *J Asthma 29*:21–28, 1992.
15. Bronnimann S, Burrows B: A prospective study of the natural history of asthma: remission and relapse rates. *Chest 90*:480–484, 1986.
16. Burrows B, Barbee RA, Cline MG, et al: Characteristics of asthma among elderly adults in a sample of the general population. *Chest 100*:939–942, 1991.
17. Stevenson DD: Diagnosis, prevention, and treatment of adverse reactions to aspirin and NSAIDs. *J Allergy Clin Immunol* 74:617–622, 1984.
18. Kaplan NM: *Heart Disease: A Textbook of Cardiovascular Medicine*, 2nd ed. Braunwalt E, Ed. WB Saunders, Philadelphia, 1984, p. 853.
19. Banerjee DK, Lee GS, Malik SK, et al: Underdiagnosis of asthma in the elderly. *Br J Dis Chest 81*:23–29, 1987.
20. Connolly MJ, Jarvis EH, Hendrick DJ: Late-onset asthma in a demented elderly patient. The value of methacholine challenge in diagnosis. *J Am Geriatr Soc 38*:539–541, 1990.
21. Connolly MJ, Kelly C, Walters EH, et al: An assessment of methacholine inhalation tests in elderly asthmatics. *Age Aging 17*:123–128, 1988.
22. Schrier AC, Dekker FW, Kaptein AA, et al: Quality of life in elderly patients with chronic nonspecific lung disease seen in family practice. *Chest 98*:894–899, 1990.