CE

Managing Asthma in Older Adults

Karen Rance, DNP, CPNP, and Mary O'Laughlen, PhD, FNP-BC

ABSTRACT

Asthma is often considered a disease of childhood, but it is becoming increasingly prevalent among older adults. Asthma significantly reduces both the psychological and physical quality of life among older adults and accounts for exorbitant health care costs. There are more asthma-related deaths among older adults than in any other age group. Managing asthma in this age group is complicated by existing comorbidities, adverse side effects to common medications, and nonspecific symptoms that often go unrecognized. This article reviews evidence-based asthma management of older adults.

Keywords: asthma, chest tightness, cough, geriatric, older adults, shortness of breath, wheeze

Karen Rance, DNP, RN, CPNP, AE-C, works at Allergy Partners of Central Indiana in Indianapolis and can be reached at ksrance@gmail.com. *Mary O'Laughlen, PhD, RN, FNP-BC, FAAAAI, is an assistant professor in the School of Nursing at the University of Virginia in Charlottesville.*

While asthma is often considered a disease of childhood, it significantly affects adults as well. Asthma appreciably decreases the quality of life among older adults, and this age group experiences more asthma-related deaths than any other.[1] Asthma that begins in adulthood is more likely to persist throughout the lifespan compared to asthma that begins in childhood.[2] Asthma often goes undiagnosed or untreated in this older age group and accounts for significant health care costs.[3] This article presents an evidence-based review of asthma in older adults and discusses its management.

BACKGROUND

Current asthma prevalence among adults increased from 6.9% in 2001 to 8.2% in 2010.[1] Of the 25.7 million Americans that have asthma, 18.7 million are adults, of which 3.1 million are over 65.[1] Older adults with asthma report symptoms similar to younger patients, the most common being episodic wheezing, chest tightness, and shortness of breath.[2] When compared to young adults, older adults' asthma-related mortality, near-fatal asthma-related events, and asthma-related hospitalization rates were higher.[4] In addition, older adults who are hospitalized for asthma tend to have a longer length of stay.[4]

This CE learning activity is designed to augment the knowledge, skills, and attitudes of nurse practitioners as they diagnose and treat older patients with asthma.
At the conclusion of this activity, the participant will be able to:
A. Describe the epidemiologic pattern of asthma in aging patients
B. Construct a differential diagnosis for an older patient with respiratory complaints
C. Evaluate diagnostic and therapeutic strategies in older patients with asthma
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Older women with asthma tend to have a higher mortality rate than older men with asthma.[2]

Older adults, defined as those 65 and older, compose 13% of the US population.[5] It is estimated that the older adult population segment will grow to 25% by 2050.[6] The largest population growth is anticipated to be in those 85 and older.[5] In light of the anticipated population boom, managing asthma in older adults will come into greater focus among health care professionals.

NORMAL AGING OF THE RESPIRATORY SYSTEM

Asthma in older adults has similar clinical and physiologic consequences as seen with younger patients. However, the physiological effects of aging and the presence of comorbid disease profoundly affect its diagnosis, clinical presentation, and management.[2] Normal aging causes a decline in lung function and modifications in airway composition. Those airway changes include decreases in all of the following: collagen content, airway diameter on expiration, pulmonary muscle strength, pulmonary function, sensation/perception of dyspnea, cell immunity, and arterial partial pressure of oxygen.[6] Though these age-related changes are inevitable, they do not affect all patients to the same extent. When illness occurs, age-related changes exaggerate the stress put on the patient's oxygen reserve, further compromising the respiratory system. Age-related changes also increase the patient's risk of lower respiratory tract infections and airway obstruction.[6]

The recognition of asthma phenotypes, the set of observable characteristics of an individual resulting from the interaction of his or her genotype with the environment, has gained significant interest in recent years.[2] There are 2 identified phenotypes among older adults with asthma: those with a long-standing history of moderate to severe asthma that is only partially reversible and those diagnosed with asthma as an adult.[2] Current asthma guidelines do not differentiate asthma management between these phenotypes in older adults.[7]

DIAGNOSIS OF ASTHMA IN OLDER ADULTS

The National Heart, Lung and Blood Institute's National Asthma Education Prevention Program (NAEPP) published asthma guidelines in 2007 that still serve as evidence-based recommendations for diagnosis and management.[7] A patient's history is a key component of asthma diagnosis (see Table 1 for pertinent patient history questions). The history should include the patient's symptoms, pattern of symptoms, precipitating and/or aggravating factors, development of the disease, current treatment, family history, social history, and history of exacerbations and related hospitalizations.

It is important to understand the age of asthma onset because it will provide clues to disease progression and its triggers. For example, persistent asthma from an early age may have an allergic component that triggers symptoms, whereas asthma onset correlating to employment is likely to have an occupational trigger as the cause.

Allergies are certainly the result of both genetic and environmental factors, but researchers have discovered new evidence to suggest that at least 1 major genetic aberration could be behind everything from hay fever to food allergies to asthma.[8,9] While studying the genetics of 2 rare tissue disorders, Marfan and Loeys-Dietz syndromes, they discovered that abnormal signaling by a protein called transforming growth factor-beta (TGF-beta) may cause both of these syndromes and also the higher than normal rate of allergies associated with them.[8,9] Although preliminary, it is hypothesized that the disruption in TGF-beta signaling may be central to a key pathway that underlies the development of all forms of allergic disease.[8,9] Losartan, an angiotensin receptor blocker (ARB), inhibits TGF-beta, and researchers are testing to see if it can relieve allergy symptoms in animals.

Establishing a differential diagnosis for an older patient with respiratory complaints can be challenging. The 3 most common causes of chronic or intermittent respiratory symptoms (nocturnal cough, shortness of breath, wheezing, and chest tightness) are asthma, chronic obstructive pulmonary disease (COPD), and heart failure.[2] Gastroesophageal reflux disease (GERD) is a common differential to consider in older adults with asthma. The usual symptoms of GERD in older adults, such as reflux and heartburn, are sometimes absent. Symptoms of GERD may mimic asthma or be a provoking trigger.[10] In a study of older adults with GERD, 57% of the patients had a chronic cough, hoarseness, and wheezing,