

Gastroesophageal Reflux Disease and the Elderly

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KEYWORDS

- Gastroesophageal reflux disease • Lower esophageal sphincter • Motility studies
- Barrett esophagus

KEY POINTS

- Gastroesophageal reflux disease (GERD) is a prevalent disorder in the elderly, and seems to be associated with more severe and advanced disease in a population that is growing in size in the United States.
- Changes in esophageal physiology predispose to more esophageal damage in older patients, as well as to a frequent disconnect between the type and severity of symptoms and severity of mucosal damage.
- Comorbidities make the diagnosis and treatment of GERD more challenging in aged patients, yet the treatment goals and approach are similar in older and younger patients.
- Older patients may be at increased risk of complications from reflux therapy, whether medical or surgical.

INTRODUCTION

Gastroesophageal reflux disease (GERD) is a common disorder affecting 20% of the United States population and 6% to 17% of the elderly.¹ GERD is not only common in the elderly, but when compared with younger counterparts, older patients have more intense patterns of abnormal acid contact time and advanced erosive disease.² The United States older population is growing and is at its highest level since 1900 according to the US Census Bureau. In 1900, there were fewer than 5 million Americans aged 65 and older. This rate increased to 35 million in 2000 and rose to more than 40 million by 2011, representing 13.8% of the total population.³ By the year 2050, more than 20% of the United States population will be older than 65 years, and approximately 20 million individuals will be older than 85.⁴

There were about 1.5 million nursing home residents in 16,100 facilities according to the 2004 National Nursing Home Survey. The number of Americans needing long-term

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care is projected to double between 2000 and 2050.⁵ A recent, retrospective cross-sectional study of almost 20,000 long-term care residents of nursing homes aged 65 years and older identified the 20 most common chronic conditions. GERD was the sixth most common disorder in the confined elderly, with 23% prevalence in men and women.⁶ In summary, GERD is a prevalent disorder in the elderly, and seems to be associated with more severe and advanced disease in a population that is growing in size in the United States.

ESOPHAGEAL PHYSIOLOGY AND AGING

Aging of the esophagus has been associated with several important changes in esophageal physiology that predispose to both the prevalence and severity of GERD. These factors are summarized in **Box 1** and **Table 1**.

Structural Studies

In a rodent model, aging impairs the cholinergic nerve cell population in the stomach and intestines.⁷ Studies of the animal or human esophagus appear scarce. In a study that evaluated the histology of the Auerbach plexus and esophageal smooth muscle in autopsy material from young and old subjects, the investigators found a significant decrease in ganglion cells per square centimeter ($P < .05$) and a heavier lymphocytic infiltration in comparison with younger counterparts.⁸ This situation could potentially produce disorders similar to idiopathic achalasia and diffuse spasm. Pathologic changes seen in the esophagus with aging are similar to changes seen in patients with the more specific spastic esophageal motility disorders.⁹

Hiatal hernias are an important factor in the genesis of GERD, and their presence and size has been noted to partially correlate with the severity of mucosal damage from GERD. For example, hernias of 3 cm or larger may predispose to lower pressures in the lower esophageal sphincter (LES), greater acid exposure, and higher prevalence of erosive esophagitis.¹⁰ Hernias are more common with increasing age, and were noted in 60% of patients older than 60 years.¹¹

Esophageal Motility Studies

Lower esophageal sphincter

There is no clear relationship between basal LES pressure and aging.¹² When acid exposure and LES pressures were compared, LES pressure was lower with more severe acid exposure, but did not correlate with advancing age.¹³ An additional study showed increased esophageal acid exposure with advancing age, and that these changes in acid exposure were associated with a decrease in both abdominal LES length and a weakening in esophageal motility.¹⁴ Most studies seem to suggest that

Box 1

Potential factors that may predispose to GERD in older patients

Decreased salivary flow and bicarbonate secretion

Weakened and/or disordered esophageal motility

Weakened lower esophageal sphincter pressure

Hiatal hernia

Declining prevalence of *Helicobacter pylori* allows continued acid secretion into old age

Increased rates of obesity

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