

# Endoscopy in the Elderly

## Risks, Benefits, and Yield of Common Endoscopic Procedures

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### KEYWORDS

- Gastroenterology • Endoscopy • Colonoscopy • Advanced endoscopy • Utility
- Screening

### KEY POINTS

- The elderly represent a vastly heterogeneous population with greater variation in health, disease, and debility than any other population group. Tailored approaches to clinical research and recommendations become necessary. Endoscopic procedures are generally well tolerated and being elderly should not be cause for withholding procedures.
- In many cases, the risks of preparation and sedation may be greater than the procedure.
- At the core of the decision to undergo diagnostic or therapeutic endoscopy is a vital discussion regarding personalized risk and benefit.
- In frail patients, the risks of a given procedure may be overshadowed by limited benefits in the setting of shortened life expectancy.

### INTRODUCTION

It is well known that human longevity continues to increase and that many individuals defined as elderly, older than the age of 65, are living healthy and full lives and are using gastroenterology services in greater numbers than ever before. The most recent World Health Organization report published life expectancies increasing with greater development, hygiene, and accessible health care throughout the world. In the United States, men and women can expect to reach 76 and 81 years, respectively.<sup>1</sup> The US census bureau estimates that by 2030, the number of people older than the age of 85 will double to 8.9 million and, more impressively, 130,000 centenarians will be counted in that same year.<sup>2</sup> The elderly account for a small but growing fraction of the population but use a tremendous amount of resources, accounting for 30% of primary care visits, 47% of total hospital days, and 60% of total health care expenditure.<sup>3</sup> There has been limited research examining the risks, benefits, and use of common

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endoscopic procedures in the elderly. Furthermore, gastroenterology training programs do not routinely incorporate elderly concerns when dealing with common gastrointestinal (GI) issues.

Although endoscopy has been shown to be generally well tolerated in the elderly, they represent a heterogeneous population.<sup>4</sup> There exists a broad array of endoscopic procedures with varying inherent risks that must be weighed with each elderly patient in mind. Discussion of the benefits and drawbacks of the most common procedures and indications for endoscopy including upper endoscopy, colonoscopy, endoscopic retrograde cholangiopancreatography (ERCP), endoscopic ultrasound (EUS), percutaneous endoscopic gastrostomy (PEG), and deep enteroscopy is indicated but not required. Population screening and surveillance colonoscopy issues in the elderly are paramount and require a separate discussion on shared decision making given the reality of increasing risk and diminishing benefit.

### AGE-RELATED CHANGES IN PHYSIOLOGY

Age-related physiologic changes in the GI tract must be addressed. Changes are apparent at the cellular level with regard to replication, cell growth, gut immunology, and differentiation leading to a multitude of disorders including GI malignancies, diverticular disease, and dysmotility.<sup>5</sup> The most common age-related changes are as follows:

- Aspiration pneumonia/pneumonitis<sup>6,7</sup>
  - Declining gag reflex with age
  - Increasing secretions
- Cholelithiasis and choledocolithiasis<sup>8,9</sup>
  - Decreased gallbladder emptying
  - Decreased responsiveness to cholecystokinin<sup>10</sup>
- Gastrointestinal bleeding requiring urgent endoscopy<sup>11</sup>
  - Higher rates of nonsteroidal anti-inflammatory drug use
  - Reduced mucosal protective barriers
  - Measurable age-related changes in the bicarbonate level
  - Loss or reduction of the gel protective layer

Additionally, alterations in physiology including decrements in renal function, hepatic function, and cardiopulmonary function have a dramatic impact on periprocedural risk. It is vital to understand systemic and specific GI changes in physiology because it effects the decision to undergo endoscopic procedures.

### PREPROCEDURE ASSESSMENT

Before any procedure, a detailed history and physical assessment should be performed to best assess the patient's comorbidities, degree of debility, ability to consent, and ability to successfully follow preprocedural and postprocedural instruction. In one cross-sectional study including 250 gastroenterologists, 71.1% attributed a lack of fundamental understanding regarding precolonoscopy instructions, which would result in an unsuccessful bowel preparation.<sup>10</sup> There are limited data on cognitive or educational barriers to colonoscopy in the elderly. However, studies extrapolating from the general population suggest that difficulty maintaining the preprocedural diet, preparation, and appropriate medication discontinuation are major issues that need to be addressed.<sup>10</sup>

Obtaining an accurate medication history with special emphasis on over-the-counter medications, anticoagulants, and antiplatelet agents is of key importance because

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