Perioperative Assessment of and Care for the Elderly and Frail

Rebecca S. Starr, MD[a,*], Mihaela S. Stefan, MD, PhD[b]

KEYWORDS

• Geriatric • Elderly • Frailty • Perioperative • Postoperative delirium
• Perioperative complications • Medical consultation • Geriatric consultation

HOSPITAL MEDICINE CLINICS CHECKLIST

1. More than one-third of surgical procedures involve patients 65 years of age or older.
2. Morbidity and mortality of major surgeries increase with older age, but the effect of age is significantly influenced by severity of illness, comorbidities, and functional status, making age an insensitive and nonspecific measure for use in individual decision making.
3. Preoperative evaluation should be considered an opportunity for a detailed assessment addressing the special needs of the geriatric patient and discussing treatment goals.
4. Frailty is characterized by decreased resilience to stressors and increased physiologic vulnerability, and is associated with an increased risk of postoperative complications.
5. A multidisciplinary approach considering the special needs of the elderly is effective in improving outcomes of frail older adults.

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[a] Division of Geriatrics, Palliative Care and Post-acute Medicine, Department of Medicine, Baystate Medical Center (BMC), Tufts University School of Medicine, 759 Chestnut Street, Springfield, MA 01199, USA; [b] Center for Quality of Care Research, Baystate Medical Center, Tufts University School of Medicine, 759 Chestnut Street, Springfield, MA 01199, USA
* Corresponding author.
E-mail address: rebecca.starr@baystatehealth.org

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BACKGROUND AND SIGNIFICANCE

The Aging of the Population and Surgery

The profile of aging in the United States has changed dramatically over the last 10 years; in 2013 there were 44.7 million adults greater than or equal to 65 years of age. By 2030, individuals 65 years of age or older will exceed 70 million and it is expected that individuals 85 years of age or older will triple in the next 4 decades.[1,2] The same pattern of changing demographics is seen in individuals undergoing surgeries; in 2008 one-third of the 44 million surgical procedures involved patients greater than or equal to 65 years old.[1] In 2010, more than 300,000 total hip replacements were performed and more than half of these patients were 65 years of age or older. The number of total hip replacements increased by 92% from 2000 to 2010 in patients greater than or equal to 75 years old, from 41,600 to 80,000 procedures.[3]

Current Challenges in Perioperative Management of Elderly and Frail Patients

The changes in physiology and anatomy caused by aging, the presence of chronic comorbidities, and the progression of disease states have profound impacts on elderly patients' responses to injury and stress. Geriatric patients have higher risk of complications, higher morbidity and mortality, longer lengths of stay, and higher readmission rates compared with younger patients undergoing the same procedures.

In 2012 the American College of Surgeons (ACS) National Surgical Quality Improvement Program (NSQIP) and the American Geriatric Society (AGS) jointly published a comprehensive guideline on the optimal preoperative assessment of geriatric patients.[2] The evidence-based recommendations include specific evaluations for geriatric patients, such as cognition, depression, risk of delirium, functional status, baseline frailty score, nutritional status, treatment goals, and expectations. Although justified, it may be unlikely for surgeons to complete all the elements of the evaluation because of either lack of time and/or skills in geriatric assessment, thereby requiring the involvement of primary care physicians, hospitalists, or geriatric care providers.

Is age an independent factor for perioperative complications?

Among patients greater than or equal to 65 years old, the rate of complications and death after surgery increases with age; for example, postsurgical in-hospital mortality is significantly lower in patients less than 80 years old than in those greater than 80 years old (0.7% vs 2.6%, respectively) and 1 in 4 patients older than 75 years develop postoperative complications.[4,5]

Although, in general, older age is associated with an increase in morbidity and mortality after major surgeries, age alone should not be used to determine the individual patient's eligibility for surgery. Elderly individuals are a heterogeneous group; some are highly functional in their 90s, whereas others are frail, disabled, or with multiple comorbidities. Several studies have shown that factors such as emergency surgery (rather than elective surgery), presence of comorbidities, frailty status, severity of illness, and a high American Society of Anesthesia (ASA) score have stronger impacts on mortality and postoperative complications than patient age.[5–7]

Perioperative Assessment of the Elderly

At present, the preoperative assessment focuses on individual system assessment; multimorbidity and frailty are often overlooked and providers do not devote sufficient attention to the specific needs of the elderly. In addition to a complete history and physical, the following elements should be assessed in older adults: baseline