

Critical Care Issues of the Geriatric Patient



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KEYWORDS

- Geriatric critical care • Physiologic effects of aging • End-of-life care • Frailty

KEY POINTS

- Critical care of the geriatric patient is complicated by the interaction of disease with diminished physiologic reserves.
- Frailty, the vulnerable clinical phenotype that makes geriatric patients less able to overcome a stressor, provides a valuable measure of guiding course of care in geriatric patients.
- Improved outcomes in geriatric trauma will depend on geriatric-specific triage, assessment, and treatment protocols.

INTRODUCTION

Caring for critically ill patients in need of life-sustaining support has become a specialty of its own over the last 40 years. Critical care medicine has shown value to patients and care organizations by improving outcomes, controlling cost, and investigating and applying therapy in an evidenced-based manner. Because of changing demographics, critical care of the geriatric patient will become commonplace over the next 30 years. The intensivist must understand physiologic changes associated with aging, manage common comorbid states, and navigate end-of-life care in the geriatric patient. In critical illness, a systems-based approach is used to develop a daily plan, and the same format is used in this article to view the critically ill geriatric patient.

EPIDEMIOLOGY AND IMPACT

In the United States in 2010, there were 40 million people older than 65 years, accounting for roughly 13% of the population.¹ By 2050, an estimated 80 million people, approximately 20% of the population, will be age 65 years or older.¹ A smaller

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percentage of younger workers are predicted even if current immigration rates remain unchanged, thus placing a greater financial strain on funding the health care system.¹ This inevitable strain has implications for planning intensive care facilities, staffing the workforce, and financing the health care system.

In 2006, approximately 50% of all admissions to intensive care units (ICUs) were elderly patients, and those patients consumed 60% of all ICU days.² Further, during the last 6 months of life, ICU days account for 25% of all Medicare dollars spent.³ This financial burden has caused policy makers to focus on end-of-life spending as a target for bringing health care spending under control. This is a difficult task for the clinician, because it is debatable how much cost savings can really be obtained, because the cost of dying is known only in retrospect.⁴ With technological advancement, cost containment will continually be revisited while trying to optimize quality care to the critically ill geriatric population.

NEUROLOGIC SYSTEM

Normal aging results in less brain mass and consequently, less cerebral blood flow.⁵ As age increases, cognitive processing time and motor performance slow.⁶ The prevalence of dementia increases with age, resulting in half of 85-year-olds having this disease.⁶ Although causes of cognitive impairment are varied (including stroke, vascular dementia, and so forth), Alzheimer disease is responsible for 60% to 70%.⁷ Cognitive impairment and psychological morbidity can manifest in the ICU as delirium, anxiety, acute stress disorder, and depression.⁸ Absence of adaptive devices (hearing aids, eye glasses, dentures) can functionally disable patients and be a contributor to altered mental status in the elderly patient placed in a strange new environment: the ICU.

Pain

Chronic pain is common in the elderly patient, arising from a lifetime of strain from wear-and-tear and common disease states such as osteoarthritis. The prevalence of chronic pain in 85-year-olds reaches 40% to 79%.⁹ Despite the high prevalence of chronic pain, acute pain perception in the elderly may be blunted. One study reported less activity in the insular cortex on functional MRI to painful thermal stimulus.¹⁰ This blunted response may be explained by loss of pain and temperature fibers (A- δ) with age.¹¹ Thus, although acute increases in pain should serve as early warning signs in these patients, pain is less likely to be the presenting symptom in patients with peptic ulcers, myocardial ischemia, postoperative pain, and pneumonia,¹² diagnoses commonly seen in the ICU. Treatment of pain in the ICU is one of the primary functions of the intensivist-led team. Balancing treatment of chronic pain and acute pain from surgery or procedures can be difficult, because of limited physiologic cardiopulmonary reserve. In addition, assessing pain in patients with dementia can be difficult. Patients with dementia may not have cognitive ability to rate pain by number. Further, they have been shown to have increased facial expressions to pain¹³ but on the contrary have less change in vital signs when subjected to venopuncture or other noxious stimuli.¹⁴ This author places the postoperative elderly patient on scheduled acetaminophen. This therapy allows for a baseline level of pain control to be achieved without the dangerous side effect profile of opioids. Opioids should be started at 25% to 50% of the recommended adult dose in the elderly.¹⁵ In geriatric patients with minimal fat reserves, fentanyl transdermal patches may be less effective because of impaired absorption. Using nonopioid alternatives such as ketorolac, or weak opioids such as tramadol, is an option for mild to moderate pain, which can also avoid side effects of

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