

# Pain Management Issues for the Geriatric Surgical Patient



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## KEYWORDS

- Physiology of aging • Opioid risks • Postoperative delirium • Respiratory depression
- Multimodal analgesia • Pain measurement in older adults • Regional anesthesia

## KEY POINTS

- The geriatric patient population is the fastest growing segment of society. Members of this group routinely undergo complicated surgical procedures with high levels of postoperative pain that require aggressive treatment.
- Because of complex comorbidities, older patients more commonly have adverse events related to pain therapy and complications related to inadequately treated pain.
- Opioids can be safely used in older adults by reducing dosage and being aware of the unique physiology of the older geriatric patient.
- Certain opioids and nonopioid adjuvants are inappropriate in geriatric patients.
- Careful selection of multimodal agents and use of regional and neuraxial anesthetic techniques can improve postoperative outcomes and reduce opioid-related complications.

The alleviation of pain in the perioperative period has generally been an unattained goal over the last half century since postoperative analgesia began to be studied.<sup>1</sup> However accurate this statement holds across the spectrum of age, it is a proven fact that uncontrolled pain is even more common in older adults, particularly those with cognitive impairment.<sup>2,3</sup> Inadequate analgesia contributes to several adverse postoperative outcomes:

- Cardiopulmonary morbidity
- Longer hospitalization
- Lengthier rehabilitation
- Frequent readmissions
- Development of chronic pain syndromes

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These factors take on even more serious meaning when applied to the aged patient with multiple comorbidities who is already at increased risk for nosocomial complications (eg, delirium), or who has preexisting functional limitations or problems with chronic pain.<sup>4</sup> For older patients, successful control of pain can significantly alter the postoperative course in a truly positive way.

Uncontrolled pain is the greatest fear of hospitalized patients, be they surgical or nonsurgical.

- The United States geriatric population is growing at an unprecedented rate, with 10,000 individuals reaching the age of 65 every day.
- This population surge mirrors an upward trend over the last decade of increasing numbers of hospitalized geriatric patients.
- In 2007, adults 65 and older comprised only 13% of the United States population but represented 43% of all inpatient hospital days.<sup>5</sup>
- By 2030, the population older than 65 will be 20%.

Common surgical procedures for older adults include elective surgeries such as joint replacements, emergent orthopedic procedures such as fall-related fractures, and surgeries for cancer. All of these are associated with high levels of postoperative pain. As greater numbers of older patients present for complicated surgery over the next decades, anesthesiologists must be prepared to treat pain with ready cognizance of the physiologic changes and comorbidities that are common in the elderly. All those caring for older patients must also be familiar with the safe and appropriate use of analgesic modalities, both pharmacologic and interventional, in the unique context of the older patient.

Given the aging population and increasing number of patients undergoing surgery, all anesthesiologists must be capable of providing expert-level pain treatment for geriatric patients.

## RISKS OF PAIN TREATMENT

Older adults are at higher risk for adverse side effects from analgesic treatment in comparison with younger patients, for a variety of reasons.<sup>6</sup> Major areas of risk are listed in [Table 1](#). The prevalence of chronic illness and end-organ dysfunction is higher in older adults, but decline in routine organ function is a more specific explanation for increased sensitivity to drugs in the aged. Older adults in the United States take, on average, 5 prescription medications daily; the risk of adverse drug reaction when taking 5 or more is 50%. Pharmacokinetics are altered in a way that predisposes the older adult to drug toxicity. Frail adults are at increased risk not only for side effects and toxicity but also major morbidity and mortality from the complications of analgesics and interventions.

The aged patient with cognitive impairment is at greater risk than cognitively intact patients for undertreatment of pain.<sup>7</sup> Laboratory studies indicate that individuals with cognitive impairment maintain normal pain perception thresholds.<sup>8</sup> Nevertheless, altered central processing of pain stimuli at the cortical level where neurodegenerative deterioration is present alters the way in which pain is expressed by the patient; this is particularly true of the affective component of pain. Because affect and pain behavior strongly influence the clinician's perception of pain, it is easy to understand how significant pain in the cognitively impaired patient could be underappreciated. The type of pain with which a patient presents may also harbor bias toward undertreatment.<sup>9</sup>

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