



- **FACT SHEET No. 8**

Management of Postsurgical Pain in Older Adults

The numbers of older adults is rapidly increasing in developing and developed nations alike. Individuals in this age group undergo surgery more frequently than those in younger age groups. Yet for several reasons, pain after surgery in older adults often is not recognized or properly treated. Its incidence may be underreported or improperly assessed because of misconceptions and educational deficits in health-care professionals, or such elderly patients may suffer cognitive impairment, concurrent age-related or age-independent symptoms, or atypical manifestations of pain from pathophysiological processes [1,8].

Moreover, inadequate postoperative pain control may lead to significant functional, cognitive, emotional, and societal consequences [5,6,8].

Evidence-Guided Pain Management

Although much remains to be learned and translated into practice, the fast-growing population of older persons and great interest in understanding the unique challenges they pose for pain management have expanded the evidence base for guiding decisions concerning their care. For example, older subjects are less able to recruit descending inhibitory pathways to decrease pain during recurrent or continued peripheral nociceptive input. Evidence from populations of all ages, plus specifically in older persons, can now help clinicians assess and treat pain more effectively than ever and points them to favorable administrative systems to facilitate optimal pain care [5,6].

Patient Evaluation

- Preoperative assessment should include a standard history and review of systems to document preexisting pain and other conditions not only related to the reason for



reserved.

© Copyright 2017 International Association for the Study of Pain. All rights

IASP brings together scientists, clinicians, health-care providers, and policymakers to stimulate and support the study of pain and translate that knowledge into improved pain relief worldwide.

surgery but also that might influence the patient’s suitability to benefit from nonpharmacologic (e.g., psychobehavioral) or pharmacologic pain-control techniques. [8,9]

- Such a review spans cognitive function, including memory, as well as respiratory, cardiac, hepatic, endocrine, and renal systems that can alter pharmacokinetics and pharmacodynamics of administered drugs—thereby altering their benefit-to-risk ratios. Treatment of concurrent illnesses should be noted, especially when treatment such as chemotherapy may alter cardiac or pulmonary function or induce distal peripheral neuropathy (as may diabetes). Prior radiation therapy or earlier operations may predispose to localized neuropathic pain.
- Medication history is an integral part in managing pain in all patients, including perioperative management of the elderly. Preoperative opioid therapy requires special planning to overcome possible opioid tolerance [6,8]. Other Fact Sheets in this series address each of the forgoing circumstances.
- Even in the absence of symptoms, preoperative age and patient-appropriate laboratory testing may reveal organ dysfunction relevant to pain or pain treatment via biochemical or hematologic measures, electrocardiography, or imaging studies.
- It is important to assess chronological age and biological age, mental and cognitive status, functional status, and chronic pain conditions. The physical examination should devote special attention not only to the patient’s ability to communicate and mobilize but also to search for and document focal or diffuse neurological findings.

Postoperative Pain Assessment

- Consider supplementing or substituting self-reported numeric pain intensity or visual analog scale scores in elderly patients with cognitive impairment by incorporating the following:
 - Observational and behavioral assessments, including nonverbal signs of pain [11,13,15]
 - Verbal descriptive categorical scales or faces scales [4,16]
- Assess and document pain intensity at frequent and regular intervals [9]
 - Avoid awakening a sleeping patient simply to document pain intensity; however, if respiratory depression is to be monitored, then level of sedation and ease of arousability are useful for that purpose
- Assess “dynamic pain relief”—the ability of patients to move or cough without being limited by the associated pain



reserved.

© Copyright 2017 International Association for the Study of Pain. All rights

IASP brings together scientists, clinicians, health-care providers, and policymakers to stimulate and support the study of pain and translate that knowledge into improved pain relief worldwide.

Treatment

As for postoperative pain management generally, an individualized approach tailored to the patient and context (e.g., intensity of available monitoring) is optimal. The plan should:

- Be in written or electronic form for all care providers to see [5,9]
- Reflect realistic goals as determined through shared decision making with the patient and, as appropriate, family [5]
- Employ both nonpharmacological and pharmacological modalities whenever possible [5,9]

Nonpharmacological modalities include: [9]

- Education about what the patient should expect at each phase of recovery
- Counseling and supportive communication
- Psychobehavioral techniques, including cognitive behavioral therapies, mindfulness, relaxation, and hypnosis
- Supportive, soothing touch
- Topical cold or heat therapy
- Music therapy
- Transcutaneous electrical nerve stimulation (TENS)
- Therapeutic massage
- Physical therapy, including splinting as appropriate
- Acupuncture

Pharmacological interventions should:

- “Start low and go slow” (when increasing dosing or frequency) [5,6] but do not undertreat
- Consider frequently encountered patient, disease, and drug-related issues while planning treatment (e.g., alterations in mental status due to sleep deprivation and unfamiliar surroundings or secondary to electrolyte abnormalities)
- Avoid intramuscular injections and prefer the intravenous route as feasible [5]
- Consider shifting from parenteral to oral administration of analgesics when the patient is able to take them safely (and not vomit them out) [5]
- Closely monitor potential overmedication and other adverse effects [9]
- Assess liver and kidney function, particularly the latter, which is common perioperatively given frequent blood loss and hypovolemia superimposed upon subclinical renal insufficiency, plus common NSAID use



reserved.

© Copyright 2017 International Association for the Study of Pain. All rights

IASP brings together scientists, clinicians, health-care providers, and policymakers to stimulate and support the study of pain and translate that knowledge into improved pain relief worldwide.

- Prefer non-opioids for mild to moderate pain and consider opioids for moderate to severe pain—providing there are no contraindications for either [5,9]
- Consider preemptive analgesia
- Begin loading with analgesics prior to the end of surgery [5,9]

Analgesics Commonly Used in Older Persons

- **Acetaminophen** [1,3,5,6,10,12,14]
 - First line of treatment because of its efficacy and safety, particularly in mild-to-moderate pain [14]
 - Maximum dose not to exceed 4 gm/24 hours; for frail or malnourished patients, those older than 80 years, or with frequent alcohol use, the total 24-hour dose limit should be lowered to 2-3 gm
 - Use with caution in patients with liver disease
- **NSAIDs** [6,9,10,12]
 - Although effective, adverse events and side effects require cautious use.
 - Use lowest dose for shortest duration
 - Closely monitor for side effects including gastrointestinal bleeding, nephrotoxicity and delirium
- **Opioids** [2,6,8]
 - Commonly administered parenterally or via the epidural route for the first 24-48 postoperative hours.
 - Patient-controlled analgesia can be used for cognitively intact patients
 - Increased sensitivity to sedating effects of opioids is seen in elderly, based, e.g., upon pharmacokinetics (slow clearance of opioids and metabolites), pharmacodynamics (baseline cognitive impairment), or comorbidities such as pulmonary disease or electrolyte abnormalities (e.g., low serum sodium)
 - Close monitoring for side effects including respiratory depression, sedation, urinary retention and constipation is necessary.
 - A plan for tapering should be in place to avoid unnecessarily prolonged opioid therapy post-discharge.
- **Regional analgesia** [6,7,12]

- Regional analgesia such as epidural analgesia allows targeting of therapy and potentially denser analgesia.
 - Use peripheral nerve blocks when feasible
 - Combining epidural local anesthetic with opioid offers multimodal pain relief
 - The postsurgical care team (e.g., ward nurse, pharmacist, anesthesiology staff) must be specially trained to safely and effectively provide and monitor continuous infusions of regional anesthetics
- **Multimodal analgesia** [6,12]
 - Multimodal therapy combining different classes of medication, e.g., low, analgesic doses of ketamine, or antiepileptic drugs, often achieves better pain relief because of additive or synergistic action, dose sparing (especially for opioids), and fewer adverse effects.

Pain Management Plan at Discharge

- Communicate both to patients and primary health-care professionals:
 - List all analgesics along with individualized instructions to take, monitor, and cease the therapy as appropriate
 - Integrate nonpharmacological interventions
 - Clarify whom to contact in case of uncontrolled or persistent pain

REFERENCES

- [1] Abdulla A, Adams N, Bone M, Elliott AM, Gaffin J, Jones D, Knaggs R, Martin D, Sampson L, Schofield P; British Geriatric Society. Guidance on the management of pain in older people. *Age Ageing* 2013;42(Suppl 1):i1–57.
- [2] Aubrun F. Management of postoperative analgesia in elderly patients. *Reg Anesth Pain Med* 2005;30:363–79.
- [3] Bollinger AJ, Butler PD, Nies MS, Sietsema DL, Jones CB, Endres TJ. Is scheduled intravenous acetaminophen effective in the pain management protocol of geriatric hip fractures? *Geriatr Orthop Surg Rehabil* 2015;6:202–8.
- [4] Brown D. Pain assessment with cognitively impaired older people in the acute hospital setting. *Rev Pain* 2011;5:18–22.
- [5] Chou R, Gordon DB, de Leon-Casasola OA, Rosenberg JM, Bickler S, Brennan T, Carter T, Cassidy CL, Chittenden EH, Degenhardt E, Griffith S, Manworren R, McCarberg B, Montgomery R, Murphy J, Perkal MF, Suresh S, Sluka K, Strassels S, Thirlby R, Viscusi E, Walco GA, Warner L, Weisman SJ, Wu CL. Management of postoperative pain: a clinical practice guideline from the American Pain Society, the American Society of Regional Anesthesia and Pain Medicine, and the American Society of Anesthesiologists' Committee on Regional Anesthesia, Executive Committee, and Administrative Council. *J Pain* 2016;17:131–57.



reserved.

© Copyright 2017 International Association for the Study of Pain. All rights

IASP brings together scientists, clinicians, health-care providers, and policymakers to stimulate and support the study of pain and translate that knowledge into improved pain relief worldwide.

- [6] Falzone E, Hoffmann C, Keita H. Postoperative analgesia in elderly patients. *Drugs Aging* 2013;30:81–90.
- [7] Halaszynski TM. Pain management in the elderly and cognitively impaired patient: the role of regional anesthesia and analgesia. *Curr Opin Anaesthesiol* 2009;22:594–9.
- [8] Herr KA, Garand L. Assessment and measurement of pain in older adults. *Clin Geriatr Med* 2001;17:457–78.
- [9] Horgas AL, Yoon SL, Grall M. Pain management. In: Boltz M, Capezuti E, Fulmer T, Zwicker D, editors. *Evidence-based geriatric nursing protocols for best practice, 4th ed.* New York: Springer; 2012. p. 246–67.
- [10] Karani R, Meier DE. Systemic pharmacologic postoperative pain management in the geriatric orthopaedic patient. *Clin Orthop Relat Res* 2004;425:26–34.
- [11] Licht E, Siegler EL, Reid MC. Can the cognitively impaired safely use patient-controlled analgesia? *J Opioid Manag* 2009;5:307–12.
- [12] McCartney CJ, Nelligan K. Postoperative pain management after total knee arthroplasty in elderly patients: treatment options. *Drugs Aging* 2014;31:83–91.
- [13] McDonald DD, Molony SL. Postoperative pain communication skills for older adults. *West J Nurs Res* 2004;26:836–52.
- [14] McNicol ED, Ferguson MC, Haroutounian S, Carr DB, Schumann R. Single dose intravenous paracetamol or intravenous propacetamol for postoperative pain. *Cochrane Database Syst Rev* 2016;5:CD007126.
- [15] Rakel B, Herr K. Assessment and treatment of postoperative pain in older adults. *J Perianesth Nurs* 2004;19:194–208.
- [16] Stolee P, Hillier LM, Esbaugh J, Bol N, McKellar L, Gauthier N. Instruments for the assessment of pain in older persons with cognitive impairment. *J Am Geriatr Soc* 2005;53:319–26.

AUTHOR

Babita Ghai, MD, DNB, MAMS
Professor, Department of Anaesthesia
Post Graduate Institute of Medical Education and Research
PGIMER Campus
Chandigarh, India

REVIEWERS

Mary Korula, Prof., Dr. Med.
Dept. of Anesthesia & Pain, Christian Medical College, Vellore
Academic Head, Dept. of Anesthesia & Pain Services,
Rural Development Trust Hospital, Bathlapalli, Ananthpur
Andhra Pradesh, India

Baraa O. Tayeb, MS, MD
Department of Anesthesia
Faculty of Medicine
King Abdulaziz University
Jeddah, Kingdom of Saudi Arabia



reserved.

© Copyright 2017 International Association for the Study of Pain. All rights

IASP brings together scientists, clinicians, health-care providers, and policymakers to stimulate and support the study of pain and translate that knowledge into improved pain relief worldwide.

About the International Association for the Study of Pain®

IASP is the leading professional forum for science, practice, and education in the field of pain. [Membership is open to all professionals](#) involved in research, diagnosis, or treatment of pain. IASP has more than 7,000 members in 133 countries, 90 national chapters, and 20 Special Interest Groups.

As part of the Global Year Against Pain After Surgery, IASP offers a series of Fact Sheets that cover specific topics related to postsurgical pain. These documents have been translated into multiple languages and are available for free download. Visit www.iasp-pain.org/globalyear for more information.



reserved.

© Copyright 2017 International Association for the Study of Pain. All rights

IASP brings together scientists, clinicians, health-care providers, and policymakers to stimulate and support the study of pain and translate that knowledge into improved pain relief worldwide.