



- **FACT SHEET No. 5**

## **Management of Postsurgical Pain in Adults**

Pain relief after surgery is important for the well-being and comfort of the patient because it contributes to faster and better recovery. Previous reliance upon morphine or similar opioids has evolved to a multimodal approach that includes non-opioids and, as feasible, regional anesthesia techniques to improve effectiveness and reduce side effects.

Ample scientific evidence has accumulated to guide the selection of appropriate medications and strategies according to the needs of each patient and each type of operation. This evidence supports three essential strategic components:

- Multimodal analgesia
- Procedure-specific analgesia
- Acute rehabilitation after surgery

### **Multimodal Analgesia**

Historically, postsurgical pain was mainly managed by use of opioids such as morphine, which most commonly were administered intramuscularly. Although opioids remain an important component in managing severe postsurgical pain, their use as the single therapeutic entity causes significant problems such as ventilatory impairment, sedation, nausea and vomiting, and delayed recovery of bowel function. These adverse effects endanger patient safety and/or impair recovery and rehabilitation and thereby delay discharge from hospital.

Evidence-based guidelines now recommend the use of combinations of two or more analgesic medications or techniques with different sites or mechanisms of action (“multimodal” or “balanced”) analgesia. Advantages of multimodal analgesia include:

- Improved analgesia
- Reduced opioid requirements (“opioid sparing”)
- Reduced adverse effects of opioids



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

**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.**

Current evidence supports the use, when feasible, of local anaesthesia and peripheral or neuraxial regional analgesia as important techniques within a multimodal approach. Systemic analgesics with proven or potential efficacy as components of multimodal analgesia used to treat postsurgical pain include:

- Paracetamol (acetaminophen)
- Non-selective and COX-2 selective NSAIDs
- Alpha-2-delta modulators (gabapentin, pregabalin)
- NMDA-receptor antagonists (ketamine)
- Alpha-2 adrenergic agonists (clonidine, dexmedetomidine)
- Systemic local anaesthetics
- Corticosteroids

### **Procedure-Specific Analgesia**

To date, most systematic reviews of postsurgical pain management pool data across clinical trials conducted in heterogeneous study populations. Such approaches may not discern specific effects of particular analgesic medications and techniques for a single type of operation or in a specific surgical subpopulation. Clearly, different surgical procedures cause

- Pain resulting from different mechanisms (musculoskeletal pain after orthopedic surgery or visceral pain after abdominal surgery, for example)
- Pain of different severity and different functional consequences
- Pain in different locations

These circumstances require analgesic approaches specific to each type of surgery and population.

Evidence-guided recommendations for procedure-specific management of postsurgical pain have become available (see the PROSPECT website cited below). Further research is needed to identify which specific combinations of these components are most suitable for individual patients in each operative and postoperative setting.

### **Acute Rehabilitation after Surgery**

It is now clear that provision of good postsurgical analgesia by itself is insufficient to improve postoperative outcome and recovery. However, multimodal protocols for enhanced recovery after surgery have been developed and address multiple dimensions of the recovery from surgery.

Application of such protocols can facilitate shortened hospital stays and reduced rates of complications. Such protocols emphasize:

- Reduction of the surgical stress responses and risk of organ dysfunction
- Optimized management of perioperative fluid and body temperature
- Avoidance of unnecessary surgical drains, nasogastric tubes, catheters, etc.
- Early enteral intake
- Early mobilization



International Association for the Study of Pain  
**IASP**  
Working together for pain relief

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

**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.**

Analgesic techniques that facilitate achievement of these goals, particularly while sparing in the use of opioids, may enhance recovery after surgery and permit implementation of “fast track” surgical pathways.

## RESOURCES

- *Acute Pain Management: Scientific Evidence* (4th edition, 2015) published by [Australian and New Zealand College of Anesthetists](#) and its Faculty of Pain Medicine
- [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](#)
- [PROSPECT](#) (Procedure Specific Postoperative Pain Management)
- [ERAS Society](#)

## AUTHORS

Stephan A. Schug, MD, FANZCA, FFPMANZCA  
Chair of Anaesthesiology  
Pharmacology, Pharmacy, and Anesthesiology Unit  
School of Medicine and Pharmacology  
University of Western Australia  
Director of Pain Medicine, Royal Perth Hospital  
Perth, Australia

Ramani Vijayan, MBBS, FRCA, FFARCS(I), FANZCA, FAMM  
Professor, Department of Anesthesiology  
University Malaya, Kuala Lumpur, Malaysia

Andi Husni Tanra, MD, Ph.D  
Anesthesiologist and Pain Management  
Faculty of Medicine  
Hasanuddin University, Makassar, Indonesia

## REVIEWERS

Norman Buckley, MD, FRCPC  
Professor and Chair, Department of Anesthesia  
Michael G. DeGroote School of Medicine  
McMaster University

Henrik Kehlet, Prof., MD, Ph.D.  
Section for Surgical Pathophysiology 4074  
Rigshospitalet  
Blegdamsvej 9  
Copenhagen, Denmark



International Association for the Study of Pain  
**IASP**  
Working together for pain relief

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

**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](http://www.iasp-pain.org/globalyear) for more information.**



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

**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.**