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

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

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

- 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 Anaesthesiology
University Malaya, Kuala Lumpur, Malaysia

Andi Husni Tanra, MD, PhD
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
As part of the Global Year Against Pain After Surgery, IASP and the European Pain Federation offer 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 [http://www.europeanpainfederation.eu/events/global-year-against-pain-2017](http://www.europeanpainfederation.eu/events/global-year-against-pain-2017) and [www.iasp-pain.org/globalyear](http://www.iasp-pain.org/globalyear) for more information.