Acute Pain Management: Current Best Evidence Provides Guide for Improved Practice

Effective management of acute pain is a major priority for both patients and healthcare providers. Inadequate control of acute and postoperative pain can lead to adverse outcomes that include pulmonary and thromboembolic complications and additional time in hospital or intensive care, with associated increased costs [1]. It can also have negative effects on mobility and function, emotional well-being, quality of life, and overall recovery [2]. Although significant advances have been made in the understanding, assessment, and management of acute pain, further improvements in clinical practice are required. This can be assisted by the provision of up-to-date evidence-based guidelines.

The Australian and New Zealand College of Anaesthetists (ANZCA) and Faculty of Pain Medicine (FPM) have recently published the Second Edition of “Acute Pain Management: Scientific Evidence” [3]. This document is a compilation of current evidence and expert practice relevant to acute pain management across a wide range of patient populations and clinical settings, and therefore a systematic approach with multidisciplinary collaboration was required. A Working Party was convened by ANZCA to appoint contributors and edit submissions. Searches of electronic databases and recent publications were conducted (as outlined in Appendix B of the document) and were greatly aided by systematic reviews that had been published by the Cochrane Collaboration and Oxford Pain Group. Evidence was graded according to current Australian National Health and Medical Research Council (NHMRC) criteria (see Table 1) with assistance from the NHMRC Guidelines Assessment Register. Since the publication of the First Edition, “expert opinion” is no longer graded as evidence. However, as high levels of evidence are not available for all interventions, recommended best practice based on experience and expert opinion was included as “clinical practice points.” The initial draft document was reviewed by a multidisciplinary consultative committee, made up of members of the intercollegiate FPM [4] and representatives from specialist medical practice, allied health care, and consumer groups. Following further public consultation and revision by the Working Party, the document was approved by the NHMRC in June 2005.

As the number of publications related to acute pain management is rapidly expanding, guidelines and clinical practice recommendations need to be regularly updated, as evidenced by recent publications from the American Pain Society and the American Society of Anesthesiologists [1,5]. Significant changes, not only in the quantity but also in the quality of available evidence, have occurred since the First Edition of “Acute Pain Management: Scientific Evidence” was published in 1999. The number of Key Messages graded with Level I evidence has increased from less than 20 to more than 100 and, in the pediatric section (as one example), the proportion of citations based on Level I and II evidence has increased from 8% to 50%. The Working Party will continue to meet once or twice a year to consider topics where new evidence has become available, and updates will be available on the ANZCA Website. As NHMRC approval is granted for a period of 5 years only, future updated editions are planned.

Acute pain is produced by a wide range of physiological and pathophysiological processes, and includes inflammatory, neuropathic, sympathetically maintained, visceral, and cancer pain. Awareness and diagnosis of these different components can alter management, and mechanism-based treatments have been proposed to improve future pain management strategies [6]. Pain assessment must encompass not only measurement of pain intensity to assess severity of pain and response to treatment, but also a detailed pain history (site, quality, aggravating and relieving factors, response to treatment, pre-existing pain conditions) as this may have diagnostic implications and influence management. Therefore, “Acute Pain Management: Scientific Evidence” incorporates information from multiple aspects of pain management (e.g., neurobiology, pain assessment, pharmacological and non-pharmacological management) and includes clinical evidence relevant to different patient populations (e.g., elderly, pediatric, and obstetric) and specific medical conditions (e.g., burns, spinal cord injury, neurological diseases).

Due to the complexity of nociceptive transmission, multimodal therapy directed at different aspects of pain signaling has been recommended [1,2,5]. Evidence supporting a number of combi-
members, such as the opioid-sparing effects of acetaminophen (paracetamol) and non-steroidal anti-inflammatory drugs in the postoperative period and the use of adjuvant drugs for control of neuropathic pain, is outlined in the document. There is also increasing recognition that pain cannot easily be separated into “acute” and “chronic” management. The management of acute pain can have an impact on the likelihood of persistent pain, and acute episodes of pain in patients with chronic pain conditions can present specific management issues (e.g., opioid tolerant patients). Effects on physical and emotional function may impact on overall outcomes, and current evidence for non-pharmacological and psychological interventions (e.g., transcutaneous electrical nerve stimulation, cognitive–behavioral strategies) is also outlined. As the importance of patient education and involvement in treatment choices is increasingly recognized [1,5], a consumer version of the current document is being prepared.

A large proportion of acute pain management research involves controlled trials in postoperative patients, and this evidence is well represented in the current document. However, efforts have also been made to include current best evidence and practice points for specific patient groups that are: 1) often excluded from clinical trials (e.g., patients with hepatic or renal impairment); 2) at increased risk of poor assessment and management (i.e., cognitively impaired, pediatric, and geriatric patients); and 3) managed in different settings (intensive care, emergency departments, primary care). Information relating to acute pain associated with specific medical conditions (e.g., herpes zoster, spinal cord injury) as well as practical data (e.g., current safety data of drugs during pregnancy and lactation) is also presented. “Acute Pain Management: Scientific Evidence 2nd Edition” therefore covers a broad spectrum and provides information that is complementary to, but differs from, other recent publications. Some areas are covered in more detail in other specialized documents. The recent NHMRC guideline for Evidence-based Management of Acute Musculoskeletal Pain [7] is referenced with some of its key messages in the acute back pain section rather than producing unnecessary repetition. The PROSPECT group (Procedure Specific Postoperative Pain Management) (http://www.postoppain.org) has developed evidence-based perioperative management algorithms for specific surgical procedures (e.g., laparoscopic cholecystectomy, total hip arthroplasty, abdominal hysterectomy), and pediatric pain assessment guidelines that contain detail not possible in the current document can also be accessed online [8]. The American Pain Society has outlined broader system recommendations for improved healthcare quality, with the goal of providing efficacious, patient-centered, timely, efficient, and equitable pain management [5]. Availability of up-to-date evidence will assist attainment of these goals.

Adequate dissemination of evidence-based guidelines is an essential step toward changes in clinical practice, and was an important requisite for NHMRC approval of this document [9]. “Acute Pain Medicine: Scientific Evidence 2nd Edition” was launched at the International Association for the Study of Pain (IASP) World Congress in August 2005. As data were drawn from the worldwide literature, this document has international relevance, as reflected by endorsement not only by Australasian specialist colleges and the Australian Pain Society, but also by IASP and the Royal College of Anaesthetists (UK). In addition, the Executive of the American Academy of Pain Medicine (AAPM) has reviewed the document and recommended it to the readership of this journal by stating “...it is of sufficient interest to make it available to its members for their review and consideration.” A link to the document is available from the AAPM Website (http://www.painmed.org/productspub/), and it can be downloaded from both the ANZCA (http://www.anzca.edu.au/publications/acutepain.htm) and NHMRC (http://www7.health.gov.au/nhmrc/publications/files/cp94.pdf) Websites, or paperback copies can be ordered.

The aim of evidence-based acute pain guidelines is not to provide global standards or absolute
requirements, but to assist decision making about health care [1]. Evidence provides a basis for treatment choices for individual patients (subject to a clinician's judgement and the patient's wishes), and for the development of local protocols and procedures that are specific to a given clinical setting. As treatment settings vary markedly in size, resources, complexity, and patient populations, there can be no "one size fits all" treatment recommendation, and the efficacy of any intervention must be assessed and titrated in individual patients. Despite the availability of evidence-based guidelines, undertreatment of pain still occurs. Gaps between evidence and clinical practice may be due to lack of continuous analgesia, lack of assessment, healthcare provider biases, limited healthcare resources, and health economics [2]. A coordinated approach at multiple levels of healthcare provision, from education of staff to best use of available resources, is required to improve practice. Effective implementation of evidence-based guidelines also requires local audit and follow-up to evaluate compliance with new measures and both positive (e.g., improved outcome) and negative (e.g., increased side effects or complications) impacts on clinical practice.

Acute pain management is a dynamic field, with ongoing changes in our understanding of pathophysiological mechanisms, ability to assess the severity of pain and its impact on outcome, and the availability of new treatment strategies. Up-to-date and accessible evidence-based guidelines provide one measure to assist improvements in clinical practice and management.

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