Inadequate acute pain control and its consequences

Jasmina Smajic
University Clinical Center Tuzla, University of Tuzla

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Introduction

Pain

An unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage.

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

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Decade of Pain Control and Research

In the year 2000, the Joint Commission on Accreditation of Healthcare Organizations released new standards for the assessment and management of pain in the facilities they accredit and certify. C. Richard Chapman, Ph.D., then the President of the American Pain Society, described this as "a giant step...a major leap forward". A few months later Congress passed and the President signed a law that declared the ten-years beginning January 1, 2001 as the Decade of Pain Control and Research.

Kathryn L. Hahn, Pharm.D. is Affiliate Faculty, Oregon State University College of Pharmacy, Chair, Oregon Pain Management Commission, American Pain Foundation State Action Leader, and Pharmacy Manager, Bi-Mart Corp. She also serves on the Board of Directors of the Academy of Pain Management.

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Introduction

ACUTE PAIN	CHRONIC PAIN
Immediate	Lasts longer than 3-6 months
Warning	Has no purpose
Easier to treat	Harder to identify the cause
Has its end	Harder for treatment

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Acute pain

- It is the initial stage of a strong, permanent nociception cascade that, in a very short period of time, due to the development of central and peripheral sensitization, can develop into chronic pain.

- Reasons for frequent poor pain management:
  - lack of knowledge
  - fear of respiratory depression
  - fear of developing addiction

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Posttraumatic pain-acute pain

- 450 patient trauma - pain measured on admission
- Prevalence of pain on admission - 91%
- On release 86% - 2/3 moderate or pain on release

Berben et. al. Pain prevalence and pain relief in trauma patients in the Accident & Emergency department (2008) Injury; May;39(5):578-85

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Why to treat acute pain?

- Etic and human reasons
- Reduction of associated adverse physiological and psychological factors
- Reducing the risk of developing chronic pain

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Ad 1

- Pain relief is a basic human right

(Association for the Study of Pain, European Federation of IASP Chapters and Human Rights Watch

- Pain relief is the main and undeniable benefit of pain management.
- Providing effective pain control is a professional responsibility.
- Inadequate treatment of pain is poor medical practice.

Sedare dolorem opus divinum est!

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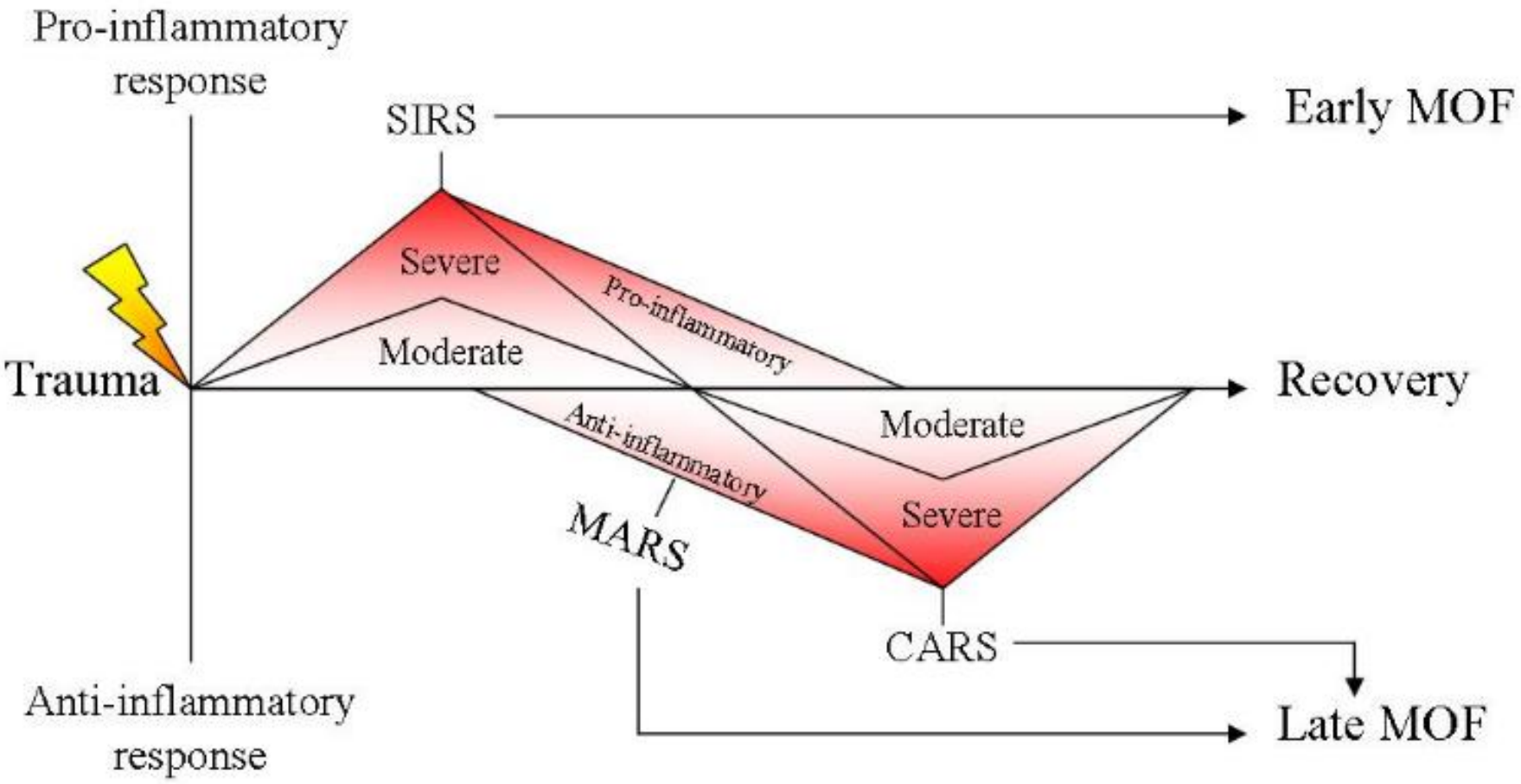
Ad 2



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Ad 2

- Respiratory system: surgery on the upper abdomen or chest results in limited diaphragm movements due to breathing pain, resulting in decreased coughs due to pain, decreased respiratory volume, secretion retention, atelectasis, infection and hypoxia.
- Cardiovascular system: tachycardia, hypertension, increased cardiac output and increased oxygen consumption can result in myocardial infarction in at-risk patients.
- Musculoskeletal system: decreased mobility and increased muscle spasm due to pain can lead to deep vein thrombosis.
- Gastrointestinal system: impaired peristalsis, gastric path and possible abdominal distension
- Urogenital system: bladder hypomotility, urinary retention
- Endocrine System: Increased levels of stress hormones such as cortisol and aldosterone can delay wound healing and cause fluid retention
- Central nervous system: suffering, anxiety, fear, insomnia
- Chronic post-surgical pain syndrome: chronic persistent pain at the site of the operative wound and after healing.

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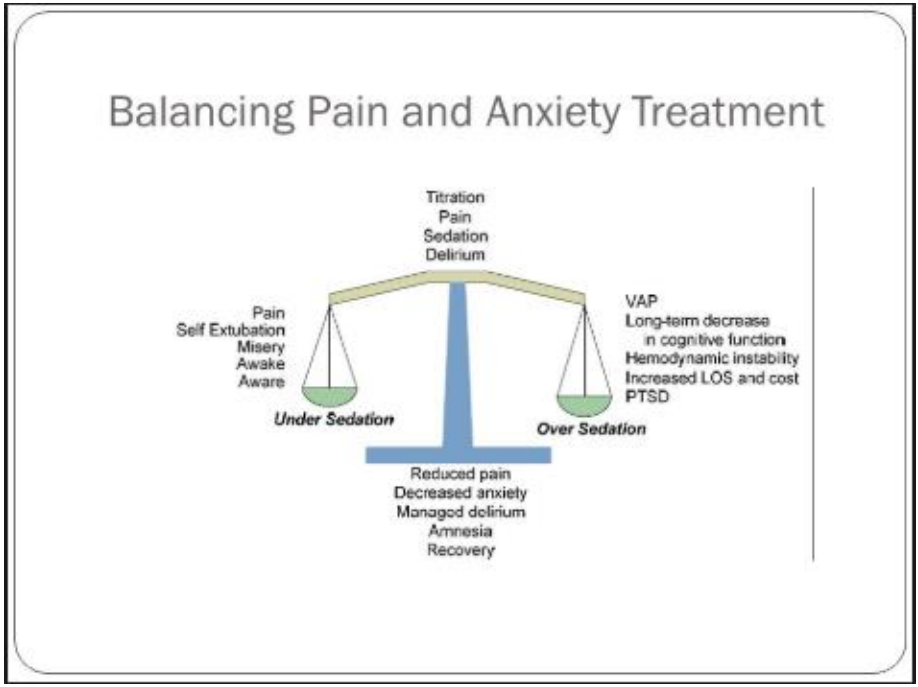
Ad 2

Improperly treated pain can cause or increase:

- Anxiety or fear
- Insomnia that leads to fatigue and exhaustion

When these psychological factors are alleviated, pain can be reduced.



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Ad 3

- Although pain decreases over time in most patients, some patients (~ 1 in 10 to 20) develop chronic pain after surgery or injury.
- Treatment is needed in about 50% of these patients.
- The risk of developing chronic pain is greater in patients who have experienced severe pain after surgery.
- Chronic pain is difficult to treat.
- Not to avoid strong opioids for acute pain tretament, the problem of developing addiction in these patients is negligible.

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Injury	Incidence of chronic pain
Amputation	30-85%
Chest injury/thoracotomy	5-67%
Spinal cord injury	>50%
Brain injury	32-51%
Vertebral fractures	>25%
Burns	35-52%
Complex regional pain Sy	1-5%

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Acute pain in ED

- In a study of 71 patients presenting to the ED with acute pain, most reported moderate to severe pain, and nearly half reported that their pain had not been relieved at discharge from the ED (*Guru V Dubinsky I. The patient vs caregiver perception of acute pain in the emergency department. J Emerg Med 2000;18(1):7–12.)*

highlight the lack of improvement in the management of acute pain in the ED setting despite the increased focus on pain by clinicians.

moderate to severe pain found that only 66% received analgesics, and 74% of patients continued to experience pain of moderate to severe intensity at discharge (*Todd KH Ducharme J Choiniere M et al. Pain in the emergency department: Results of the pain and emergency medicine initiative (PEMI) multicenter study. J Pain 2007;8(6):460–6*).

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Barriers to Pain Management

- Numerous factors can contribute to inadequate pain management

Relatively low proportion of patients suffering from moderate to severe pain actually receive opioids to control their pain.

- Opioids - the treatment of choice for moderate to severe pain and recommended for patients who are unresponsive to other types of analgesic agents

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Barriers to Pain Management

- ***Physician perceptions*** regarding analgesic therapy and ***lack of physician training*** in areas ***ranging*** from the ***recognition of inadequate pain management*** to the ***application of various available treatment modalities*** are ***factors*** that ***can contribute to inadequate pain management.***

- Medical school and postgraduate training programs have historically placed a low educational emphasis on pain management, which has contributed to many physicians' negative attitudes about opioids and a reluctance to prescribe them

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Barriers to Pain Management

For example, in a survey of 386 Texas physicians, 31% reported reluctance to prescribe opioids for patients with chronic pain, based on the belief that these analgesics should not be used for pain associated with benign conditions; a similar number (30%) believed opioids should be restricted to the treatment of severe intractable pain [8]. A high proportion of physicians expressed fear of addiction as a reason against the use of opioid analgesics—approximately 28% believed that patients receiving opioids for pain relief were at significant risk for addiction, and an even greater proportion of physicians (39%) were concerned about addiction if a family member were to be prescribed morphine [8].

Weinstein SM Laux LF Thornby JI et al. Physicians' attitudes toward pain and the use of opioid analgesics: Results of a survey from the Texas Cancer Pain Initiative. South Med J 2000;93(5):479–87.

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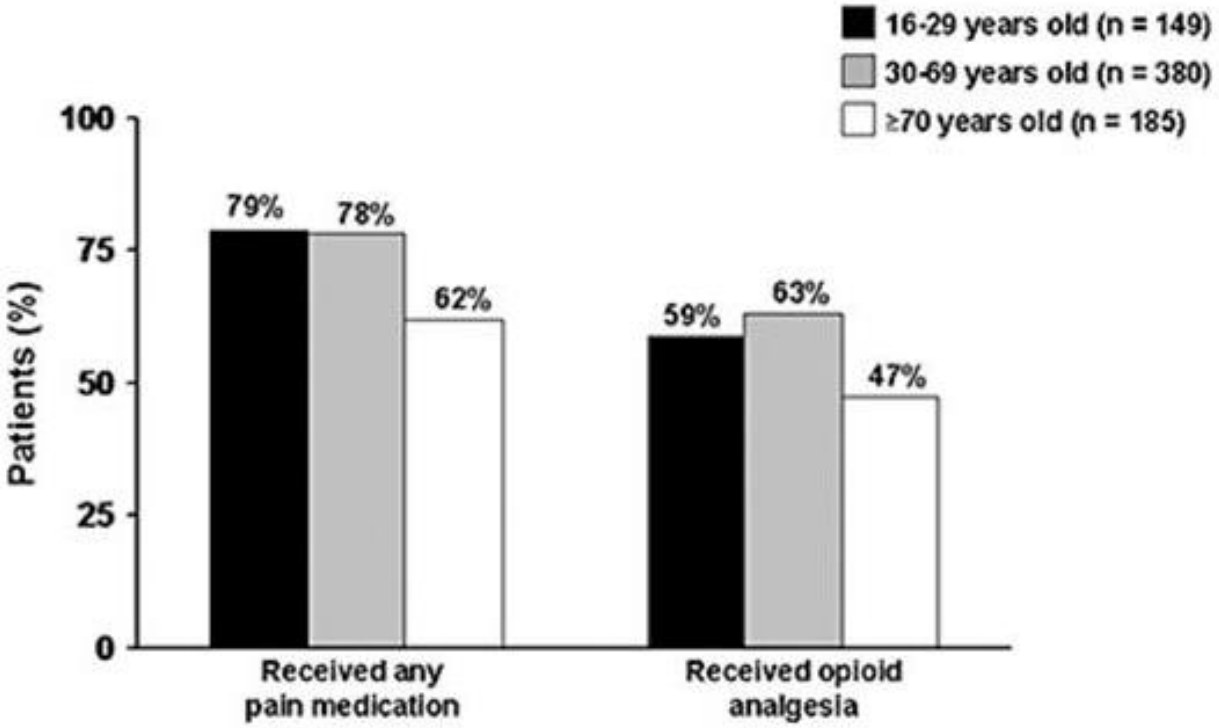
Barriers to Pain Management



Use of analgesics in the emergency department (ED) among patients with documented moderate or severe pain due to extremity or clavicular fracture. The ED component of the National Center for Health Statistics/National Hospital Ambulatory Medical Care Survey for the years 1997 through 2000 was analyzed. Use of any analgesic and opioid analgesic medication in the ED among patients with extremity or clavicular fracture was determined

Brown JC Klein EJ Lewis CW Johnston BD Cummings P. Emergency department analgesia for fracture pain. Ann Emerg Med 2003;42(2):197–205.

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Barriers to Pain Management

another barrier to appropriate use of these agents [3,10,11]. A survey of 250 postoperative patients revealed that of those who would choose a nonopioid agent for pain management (72%), almost half made their choice based on fear of addiction [3]. A similar attitude was observed in a study of 340 patients with chronic pain taking prescription analgesics, in which the majority of patients (69%) rejected opioids because they were convinced these drugs were addictive or habit forming [21]. Half of the patients believed major opioids were too strong for their pain, and 29% felt that opioids should be reserved only for patients with terminal illness, such as cancer [21].

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Inadequate Acute Pain Management Has Substantial Consequences for Patients

- Reduced Quality of Life
- Impaired Sleep
- Impaired Physical Function
- High Economic Costs of Unrelieved Pain
- Physiological Consequences

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Pain assessment

- A general history of pain

OPQRST- Onset of the event

-Provocation or palliation

-Quality of the pain

- Region and radiation

-Severity

-Time (history)

- Physical examination

- Additional testing
(laboratory, visualization

- **Scales and questionnaires for pain assessment**

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Pain assessment

- Ask the patient: Make the pain visible
- Pain is always subjective

Unless asked to express the intensity of pain,

patients tend to tolerate pain quietly

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Analgesia –when and how?

- Immediately after initial resuscitation (ABCDE principle) and stabilization of vital signs
- Caution in hemodynamically unstable patients

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Timely and adequate analgesia

- Accelerates the healing process of injuries
- Reduces stress response
- Reduces morbidity and mortality
- It reduces the length and cost of hospital treatment

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Sites of Action	Medications
Peripherally (at the nociceptor)	Cannabinoids, NSAIDs, Opioids, Tramadol, Vanilloid receptor antagonists(i.e., capsaicin)
Peripherally (along the nociceptive nerve)	Local anesthetics, Anticonvulsants (except the gabapentinoids)
Centrally (various parts of the brain)	Acetaminophen Anticonvulsants (except the gabapentinoids), Cannabinoids. Opioids, Tramadol
Descending Inhibitory pathway in the spinal cord	Cannabinoids, Opioids, Tramadol, Tricyclic antidepressants, SNRIs
Dorsal horn of the spinal cord	Anticonvulsants, Cannabinoids, Gabapentinoids, NMDA receptor antagonists, Opioids,. Tramadol, Tricyclic antidepressants, SNRIs

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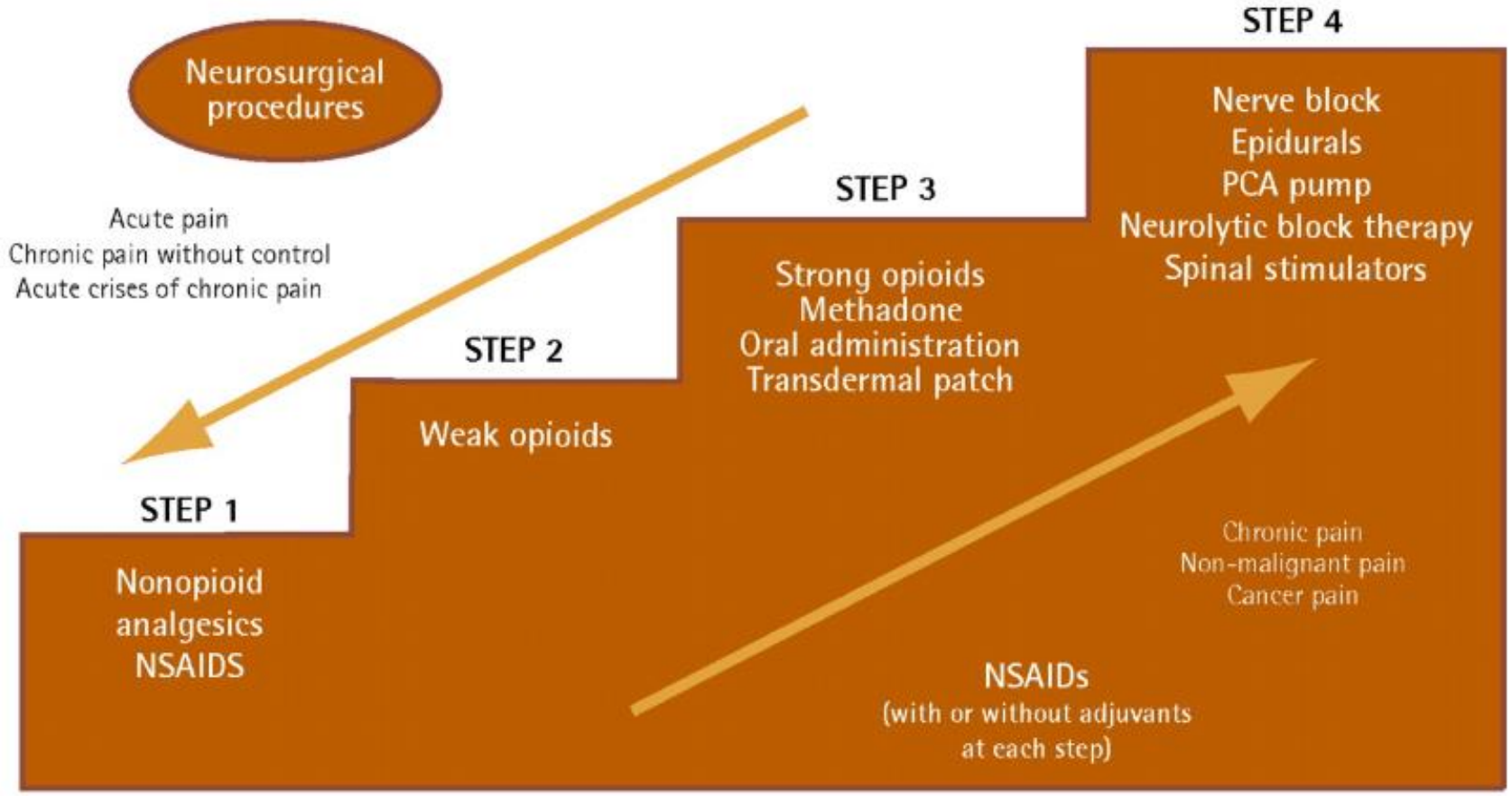
The adaptation of the analgesic ladder for acute pain, chronic noncancer pain, and cancer pain



NSAID—nonsteroidal anti-inflammatory drug, PCA—patient-controlled analgesia.

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Multimodal Analgesia

- *Multiple analgesics with different mechanisms of action has shown increasing promise in clinical practice.*

- Several clinical studies have documented not only the ability of this approach to provide better pain relief with a reduced consumption of opioids and/or superior tolerability/side effect profile, but also the potential to lower the incidence of chronic pain development.

Practice guidelines for acute pain management in the perioperative setting: An updated report by the American Society of Anesthesiologists Task Force on Acute Pain Management. Anesthesiology 2004;100(6):1573–81.

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Acute Pain Services

- Improving the treatment of acute pain moving forward
- Anesthesiologist typically plays a pivotal role at most major institutions
- Provide optimal pain management for every surgical patient, including children and outpatients, as well as regular review of institutional pain management policies and practices

Rawal N. Organization, function, and implementation of acute pain service. Anesth Clin North Am 2005;23(1):211–25.

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Take home messages

- Need for better acute pain management still exists
- Inadequate management of pain have an unacceptable negative impact on patients
- Failure to administer appropriate analgesic treatment may result in worsening of pain
- Multimodal approach to analgesia and establishment of acute pain services may have an important role in the future of acute pain management

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