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Evidence-informed management of chronic low back pain with opioid analgesics

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Abstract **EDITORS' PREFACE:** The management of chronic low back pain (CLBP) has proven to be very challenging in North America, as evidenced by its mounting socioeconomic burden. Choosing among available nonsurgical therapies can be overwhelming for many stakeholders, including patients, health providers, policy makers, and third-party payers. Although all parties share a common goal and wish to use limited health-care resources to support interventions most likely to result in clinically meaningful improvements, there is often uncertainty about the most appropriate intervention for a particular patient. To help understand and evaluate the various commonly used nonsurgical approaches to CLBP, the North American Spine Society has sponsored this special focus issue of *The Spine Journal*, titled Evidence-Informed Management of Chronic Low Back Pain Without Surgery. Articles in this special focus issue were contributed by leading spine practitioners and researchers, who were invited to summarize the best available evidence for a particular intervention and encouraged to make this information accessible to nonexperts. Each of the articles contains five sections (description, theory, evidence of efficacy, harms, and summary) with common subheadings to facilitate comparison across the 24 different interventions profiled in this special focus issue, blending narrative and systematic review methodology as deemed appropriate by the authors. It is hoped that articles in this special focus issue will be informative and aid in decision making for the many stakeholders evaluating nonsurgical interventions for CLBP.

Keywords: Chronic low back pain; Opioid analgesics; Pharmacological treatment

Description

The medical treatment of patients with chronic low back pain (CLBP) is most often directed toward decreasing pain and increasing function rather than curing the condition. Treatment is usually multimodal and might include rehabilitation, spinal injections, surgery, or medications. In turn, the choice of medication depends on the severity, duration, and type of pain, as well as each patient's values, responses, and circumstances. Pharmacological treatment should be just one part of a comprehensive program to improve pain and function. This paper will review the role of opioid analgesics for CLBP.

Terminology

The preferred terms for this class of medications are opioid or opioid analgesic rather than narcotic [1]. Opioids most suitable for long-term use can be divided into two categories: sustained-release opioids (SROs) and immediate-release opioids (IROs). SROs release medication continuously from the gastrointestinal tract or transdermally via a reservoir and are variously termed continuous release (CR), sustained release (SR), or extended release (ER). Examples include morphine-ER, oxycodone-CR, oxymorphone-ER, and transdermal fentanyl (TDF). IRO formulations such as oxycodone-IR, hydrocodone, and morphine sulfate-IR have a rapid onset of analgesia, are short acting, and preferred for severe episodes of pain not controlled by

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usual pain medication (termed ''breakthrough'' pain). The other category of opioids is termed long acting (LA) and includes methadone and levorphanol.

History

In patients with pain because of cancer, opioids have been the standard of care for years despite the lack of high levels of evidence proving efficacy or safety with long-term use. On the other hand, there has been bias against the use of long-term opioids (LTOs) for chronic pain that is not because of cancer, a bias that does not appear to be grounded on solid evidence. This nihilistic position began to change two decades ago and by 1999, case series suggested opioids were safe and effective in well-selected patients with CLBP [2,3]. In many spine centers, LTO therapy has become an integral part of care for well-selected patients with moderate to severe and otherwise refractory CLBP [2,4,5].

Frequency of use

Opioid analgesics have become an integral part of the sophisticated management of patients. In 2001, a large insurance plan reported that 55% of patients with low back pain received analgesics, 38% of whom received opioids [6]. Of those receiving opioids, 9% received more than a 180-day supply. In specialty spine practices, opioids were part of the plan after a single visit for 3.4% of more than 25,000 patients, 75% of whom had pain for longer than 3 months [5]. In a university orthopedic spine clinic, opioids were prescribed for 66% of patients and 25% received LTO treatment [4].

Subtypes

There are several opioid analgesics readily available for long-term use (Table 1).

Morphine

Morphine remains the gold standard against which other analgesics are compared and has been shown to be safe and efficacious for many patients with CLBP at an average final dose of 105 mg (range 6–780 mg daily) [7,8]. The various SR morphine can provide analgesia for 8 to 24 hours, depending on the formulation and individual patient factors (eg, rate of absorption and drug metabolism). There are many dose sizes available, which makes dose titration convenient. The dose can be titrated upward once or twice weekly until there is good pain control or significant side effects. For breakthrough pain, morphine-IR, 15 or 30 mg every 4 to 6 hours is preferred.

Transdermal fentanyl

TDF has been shown to be effective in the treatment of CLBP in opioid-naïve patients at a mean dose of 57 μg per hour (range of 12.5 to 250 mg) [8–10]. TDF can be more convenient than oral formulations because in most patients the patch needs to be changed only every 2 to 3 days, and there may be less constipation with the transdermal route of administration.

Oxycodone

Oxycodone is an effective analgesic for CLBP at an average dose of 60 to 55 mg per day, with a wide range [7,10–14]. Drawbacks to this otherwise good analgesic are a high cost and higher prevalence of abuse and diversion compared with other opioids.

Table 1
Opioid analgesics most useful for chronic pain

Opioid	Brand names	Duration of analgesia (h)	Comments
Morphine	MS-Contin Oramorph Kadian Avinza	8 to 12 to 24, depending on product and patient factors	Multiple dose sizes Convenient Gold standard
Fentanyl	Duramorph	72	Transdermal Five dose sizes Less constipating
Methadone	Dolophine	8	Very inexpensive Initially more complicated to use
Oxycodone	Oxycontin	8 to 12	Multiple dose sizes Convenient Very expensive ??Higher abuse potential
Levorphanol	Levodromoran	6 to 8	Only 2 mg dose
Oxymorphone	Opana-ER	12	Multiple dose sizes Convenient Newest Perhaps best data
Tramadol	Ultram Ultracet	6 (immediate release) to 24 (extended release)	Very good data Less potent