Impact of Chronic Pain

Acute pain is the body’s response to environmental dangers, and it helps protect people from harm.¹ Chronic pain, which is defined by the International Association for the Study of Pain as “pain that persists beyond normal tissue healing time” (approximately three months), serves no physiologic purpose.² A survey conducted by the American Pain Society found that nine percent of the adult American population suffers from moderate to severe, chronic noncancer pain. Chronic pain negatively affects a patient’s quality of life and also has significant impacts on society. It is the leading cause of disability and is associated with annual costs estimated to be over $86 billion.¹ Management of chronic pain involves a balance between treating pain and minimizing the risks for the patient and the provider.

Trends and Concerns with Chronic Pain Management

Healthcare providers are encouraged to identify and treat patients experiencing pain because pain is often considered the fifth vital sign. Patients also take pain management into their own hands. Of the almost 150 million American adults reported to be using analgesics monthly, over 75% of the analgesics are non-prescription.² With an estimated 27 million adults using a non-narcotic analgesic almost daily, the top three drugs used in households are acetaminophen, ibuprofen, and aspirin.² Over-the-counter convenience does not necessarily equate to safety. Acetaminophen and nonsteroidal anti-inflammatory drugs (NSAIDs) can cause deleterious health effects. For example, acetaminophen can cause liver failure, and ibuprofen can cause gastrointestinal bleeding, hypertension, and renal failure.³⁴⁵ Americans consume approximately 80% of the world’s opiate supply, yet only account for 4.6% of the world’s population. Despite concerns with drug abuse and addiction, over 90% of patients presenting to and receiving treatment in a pain management setting are given opiates.¹ As a result, opiate prescription drug sales have substantially increased over the last decade. From 1997 to 2006, methadone usage increased 1,177%, oxycodone usage increased 732%, hydrocodone usage increased 244%, and morphine usage increased by 196%.¹ In 2006, the most commonly prescribed opiate was oxycodone; followed by hydrocodone, codeine and morphine.

Opiate Therapy Risks

With the increased use of opiates, there have also been increases in the incidence of poisonings, emergency department (ED) visits, and substance abuse. From 1999 to 2007, the number of poisoning deaths in the U.S. involving any opiate analgesic more than tripled (from 4,041 to 14,459), and accounted for 36% of the total poisoning deaths in 2007.⁶ During 2004 to 2008, the estimated number of ED visits for the nonmedical use of opiate analgesics increased 111% (from 144,600 to 305,900 visits). The highest numbers of ED visits were recorded for oxycodone, hydrocodone, and methadone.⁷ Although most people use prescription medications responsibly, an estimated 48 million Americans age 12 years or older have used prescription drugs for nonmedical reasons in their lifetimes.⁸ According to a national survey in 2007, 5.2 million Americans age 12 years or older were current nonmedical users of opiate pain relievers.⁹
Treatment Options

Short-Acting versus Long-Acting Opiates

Short-acting opiates (SAOs) are most frequently used for transient types of pain such as acute or intermittent pain. SAOs are often preferred for initial opiate therapy due to the fast onset of action and faster titration to effect. If the patient’s pain is continuous, SAOs need to be dosed around the clock to maintain plasma levels of the medication and avoid end of dose effects like pain breakthrough. When SAOs are dosed around the clock, effective analgesia requires meticulous medication adherence, and it can increase a patient’s pill burden substantially.10-12 Once an optimal daily dose of SAO has been established, switching to a long-acting agent may be appropriate.

Long-acting opiates (LAOs) are specially formulated to release a controlled amount of medication into the bloodstream for an extended period of time making them ideal for persistent pain conditions. Potential benefits of LAOs include a more convenient dosing schedule, reduced pill burden, improved medication adherence and sleep, and more consistently controlled analgesia.10-12 Many SAOs also have a long-acting formulation (i.e., buprenorphine, fentanyl, hydromorphone, morphine, oxycodone, tramadol, and oxymorphone),13 facilitating the transition to a long-acting opiate.

Treatment regimens for chronic pain often include both a long- and short-acting opiate.11 The long-acting component achieves adequate baseline pain control, while the short-acting agent is used as needed (PRN) for breakthrough pain or acute worsening of the chronic pain.10-12 However, if the SAO is being utilized disproportionately to the LAO, then a regimen adjustment should be considered after determining the cause for the increased utilization. It may be due to an acute event or because the LAO is not achieving adequate baseline pain control. It may also be due to misuse or abuse of the SAO, particularly if large quantities are being used in short time periods.

Potential for Adverse Drug Events with Combination Products

Codeine, hydrocodone, oxycodone, and tramadol are all available as combination products with acetaminophen and hydrocodone and oxycodone are also available with ibuprofen. In one study, 60% of unintentional acetaminophen overdoses involved the use of a combination drug product. Theoretically, most opiates have no maximum dose. However, when used in a combination product, the amount of opiate that can be used becomes limited by the amount of acetaminophen or ibuprofen (Figure 1). The maximum adult daily doses of acetaminophen and ibuprofen are 4000 mg and 3200 mg, respectively. Patients may inadvertently exceed these limits if they use a combination opiate product along with over-the-counter acetaminophen or ibuprofen. In an effort to improve patient safety, the U.S. Food and Drug Administration asked drug manufacturers to limit the strength of acetaminophen in prescription drug products to 325 mg per dosage unit. The FDA has given drug companies three years from the publication date of the Federal Register Notice, January 14, 2011, to implement these limits.

Standards of Practice and Prescribing Principles

The American Pain Society and the American Academy of Pain Medicine published guidelines for the use of chronic opiate therapy to manage chronic noncancer pain in 2009. The American Society of the Interventional Pain Physicians has their own guidelines. Randomized trials showing the benefits of chronic opiate therapy have demonstrated that these benefits are most applicable to patients with moderate or more severe pain who have not responded to non-opiate therapies.

Currently, there is insufficient evidence to indicate superiority of any particular opiate agent or dosing frequency in all pain situations. Medication selection should be tailored to the patient’s pain severity, medical and social history, previous opiate experiences and other individual factors. The available routes of administration and drug elimination may influence selection, particularly in patients with renal or hepatic impairment. In opiate-naive patients, therapy should be initiated with the lowest dose possible and titrated based on pain severity and tolerability. Short-acting agents may be preferred initially because the shorter half-life makes titration easier. Temporal pain patterns may suggest a benefit to around-the-clock dosing in certain patients. Clinicians should also consider if a patient would benefit from a long-acting opiate. Most of the assumed advantages of LAOs (e.g.,...
more consistent pain control, improved adherence, lower risk of addiction) are based on clinical experience rather than evidence from randomized controlled clinical trials.\textsuperscript{1,2,13}

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Figure 1. Shows maximum/day without exceeding 4000 mg of acetaminophen. This assumes the combination opiate product is the only source of acetaminophen.

**Risk for Misuse/Abuse**
Predicting the risk of opiate misuse is imprecise and can have significant consequences for both the patient and the prescriber if incorrect assumptions are made. Instituting a universal precautions approach for the assessment of every patient will help standardize this process. The assumption is that every patient has some degree of risk with opiate therapy.

Informed consent and opiate treatment agreements are key components of the universal precautions approach to pain management.\textsuperscript{1,2,12,16-18} Physicians should discuss the benefits and risks of using a controlled substance with a patient and how to minimize possible adverse effects before starting opiate therapy. The risks of tolerance, dependence, and possible addiction should be included in the discussion. Formalizing the pain management plan with an opiate treatment agreement helps to protect both the patient and the provider. These agreements outline the expectations of the patient and the provider and can be tailored to the specific situation. They typically include the goal of opiate therapy, responsibilities of the provider in opiate prescribing, and responsibilities of the patient with opiate usage. Treatment goals typically are to reduce pain and improve function or quality of life. Complete resolution of pain may not be attainable and should not be the patient’s expectation. Monitoring parameters such as random urine drug tests and frequency of office visits can be built into the treatment agreement as can behaviors or circumstances that would lead to continuation or cessation of opiate therapy.\textsuperscript{1,2,12,16-18}

**Patient Monitoring Programs**
Many states have implemented controlled substance prescription monitoring programs and these can be an effective tool to prevent and detect prescription drug diversion. These programs are intended to cut down on prescription fraud and doctor shopping by making a patient's controlled substance usage more transparent to both physicians and pharmacists.\textsuperscript{17} The National Association of Boards of Pharmacy (NABP) has developed a Prescription Monitoring Program InterConnect system (PMPi).\textsuperscript{19} The NABP PMPI system will facilitate the secure transfer of prescription monitoring program data across state lines and enhance the ability of participating states to fight
prescription drug abuse on a national scale. The goal of the NABP is for all 50 states to enroll in this program to reduce drug diversion and abuse.

**For more details regarding pain management and for patient education materials, please visit the following websites:**

American Pain Foundation [www.painfoundation.org](http://www.painfoundation.org)
American Pain Society [www.ampainsoc.org](http://www.ampainsoc.org)
The American Academy of Pain Medicine [www.painmed.org](http://www.painmed.org)

References

To report medical fraud, contact the Medicaid Quality Assurance Bureau at NMMedicaidFraud@state.nm.us or (505) 827-3100. We appreciate your continued support of our efforts to encourage quality care for our Medicaid clients.

Questions and/or comments about this newsletter may be directed to Diana Moya, R.Ph. at (505) 827-3174 or DianaJ.Moya@state.nm.us. DUR newsletters are posted on the New Mexico Human Services Department website: [http://wwwbsd.state.nm.us/providers/utilization-review.aspx](http://wwwbsd.state.nm.us/providers/utilization-review.aspx).

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**Follow-Up: Administration of Calcium Supplements**

Proper administration of calcium is important. As a follow-up to the osteoporosis newsletter, here is an important tip to share with your patients who take calcium supplements.

- Most calcium supplements should be taken with food or after a meal, especially calcium carbonate. Reduced absorption can occur if the amount of food is insufficient or the calcium is not absorbed. Eating food produces stomach acid that helps the body absorb calcium. When very little acid is available in the stomach, the calcium component in the product is not available for absorption. The body can absorb calcium citrate supplements at any time. These supplements can be taken with or without food, depending on patient preference.

**References**