

Pain Management in the ED

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Recent regulatory and legal scrutiny has raised concerns about the over- and undertreatment of pain in the hospital. This debate stems from either the overly aggressive approach to the management of pain with opioids or, alternatively, to the barriers preventing the appropriate prescribing of these medications. The media attention on diversion of controlled substances for illicit purposes has intensified this debate, highlighting the possible overuse of these medications in the treatment of nonmalignant pain. Because pain is a highly common presenting complaint in the ED, EPs are pivotal players in these controversies. Accordingly, they must apprise themselves of pain management skills and continue to help those in need of appropriate medications while thwarting inappropriate prescribing. This review offers a synopsis of the pitfalls associated with ED pain management and provides recommendations for selected conditions. (Am J Emerg Med 2004;22:51-57. © 2004 Elsevier Inc. All rights reserved.)

Effective pain management is an important component of emergency medical practice. Nonetheless, concerns range from whether some patient populations receive inadequate analgesia to whether some patients receive too much opioid medication, needlessly placing them at risk for adverse effects. Despite the wide array of analgesic options in the ED, some patients could be undertreated or even denied treatment for pain in the ED because of the fear that their pain is “not real.” EPs might be concerned that a patient is exhibiting “drug-seeking behavior,” whereby amplification or falsification of a somatic complaint is offered by a patient to receive a prescription for opioids. Alternatively, an EP could encounter patients who are “allergic” to multiple nonnarcotic medications and request a specific type of pain medication, raising concerns about possible addiction. Some EPs might consider themselves adept in the identification of such patients. Although such partial evidence could seem compelling, proving these allegations of misuse is usually impossible. Also, it is becoming increasingly difficult to defend the practice of denying opioids because

of suspicions that pain is inexplicable or that the patient is a “drug seeker.” Differentiating between true addiction and the patient whose analgesic requirements are not being met (pseudoaddiction) is often difficult. There is no laboratory test or imaging study that can verify acute or chronic pain. Ultimately, pain cannot be completely proven or disproved. Although office-based primary care and pain management specialists are usually responsible for the ongoing management of chronic pain, EPs often must intervene in such cases and must have a clear understanding of the issues surrounding pain management, particularly as they pertain to prescription drug abuse.

Although opioid analgesics are among the most potent and effective analgesics for pain, the stigma of addiction remains a barrier to their use. Oxycodone hydrochloride controlled-release, better known as OxyContin[®], produced by Purdue Pharma (Stamford, CT), offers a current example of this. Recent media reports of OxyContin[®] abuse have led healthcare providers and regulators to question the wisdom of liberalization of opioid-prescribing. The current revelations of illicit use suggest that some prescription opioids are being diverted for recreational use rather than a “legitimate medical purpose” as required by the Controlled Substances Act of 1970. The pharmacologic properties of OxyContin[®] make it a suitable substitute for heroin¹ and, in recent years, OxyContin[®] has been responsible for several fatal overdoses.² Although its time-release properties enable the active ingredient to work for prolonged periods, abusers have crushed or dissolved the tablet and then inhaled it or injected the drug intravenously. The U.S. Food and Drug Administration (FDA) has ordered the pharmaceutical manufacturer to place a warning on this prescription painkiller.

Some individual states have put restrictions on OxyContin[®]'s distribution to Medicaid recipients, whereas others have introduced legislation to heighten penalties for theft of prescription pads and drugs, as well as for those who use multiple doctors to obtain more of the drug.³ The Drug Enforcement Agency (DEA) has stepped up education and enforcement efforts to slow the drug's diversion, whereas others are using lawsuits in hopes of curbing its illicit use.⁴ As a result of the virtual banning of this potentially diverted medication, public interest groups are responding to the threat of denying patients necessary analgesic medications. A joint statement by 21 healthcare organizations (Table 1) and the DEA stated that healthcare professionals, law enforcement officials, and regulatory personnel share a duty for ensuring that prescription pain medications are available for the patients who need them and for preventing these

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TABLE 1. A Listing of the 21 Healthcare Organizations and the Drug Enforcement Administration Unified in Their Support of Appropriate Prescribing for Pain⁵

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| American Academy of Family Physicians |
| American Academy of Hospice and Palliative Medicine |
| American Academy of Pain Medicine |
| American Alliance of Cancer Pain Initiatives |
| American Cancer Society |
| American Medical Association |
| American Pain Foundation |
| American Pain Society |
| American Pharmaceutical Association |
| American Society of Anesthesiologists |
| American Society of Law, Medicine & Ethics |
| American Society of Pain Management Nurses |
| American Society of Regional Anesthesia and Pain Medicine |
| Last Acts |
| Midwest Bioethics Center |
| National Academy of Elder Law Attorneys |
| National Hospice and Palliative Care Organization |
| Oncology Nursing Society |
| Partnership or Caring, Inc. |
| University of Wisconsin Pain & Policy Studies Group |
| Drug Enforcement Administration |

drugs from becoming a source of harm or abuse.⁵ Although these efforts are well intended, the war on drugs can have an unintended chilling effect on the war on pain. We review current issues of pain control in the ED. In particular, we focus on opioid-prescribing, particularly in the context of our new climate of increased vigilance surrounding pain and addiction.

UNDERSTANDING PAIN

Pain can be divided into 2 broad categories: acute and chronic. Within either of these 2 groups, pain can be nociceptive, neuropathic, or idiopathic. Pain can be viewed as a biologically necessary alarm system without which our sense of impending tissue damage is muted. Although most of us dread and avoid pain, individuals born without the neural machinery to feel pain typically have shortened and poor-quality lives. It might be helpful to think of pain as either having a purpose or being purposeless. Purposeful pain is exemplified by acute pain that identifies an obvious injury and serves to raise vigilance and isolation of an affected area. Purposeless pain can be exemplified by post-herpetic neuralgia with chronic suffering that remains as a ghost of an otherwise healed episode of zoster. An interesting debate surrounds conditions that could be somewhere in between such as the pain of childbirth. One can argue evolutionary benefits to advancing the species of crescendo pain in childbirth. It serves to prioritize an event that requires attention and discontinuation of other usual activities. Once a delivery is in the setting of a hospital, however, one can argue that the value of such pain is greatly reduced while the suffering it brings is unmitigated and immeasurable. Others might argue that there remains some value to the experience of pain that overshadows the suffering. However, once the suffering far outweighs the diagnostic or protective value of pain, treating suffering becomes a fundamental imperative for any clinician.

Acute pain is usually associated with trauma or other known pathologic conditions and generally resolves once the condition resolves. In acute pain, nociceptors fire repetitively, stimulating activity in the dorsal horn of the spinal cord. This type of pain can be treated effectively with opioids and other analgesics such as nonsteroidal antiinflammatory drugs (NSAIDs). As a result of the transient nature of acute pain, the risk of prescription drug abuse is less than that in chronic conditions because prescribing is usually brief. In contrast, chronic pain can be caused by nervous system malfunction, degenerative conditions (e.g., arthritis), or neoplasm. Experiments in animal preparations have shed light on the processes that govern chronic pain. Available research suggests that prolonged exposure to tissue injury can sensitize certain nerves in pain-signaling pathways. As a result, these nerves can continue sending pain signals to the brain well after the pain-causing condition has resolved, producing neuropathic pain or pain arising from dysfunction in the nervous system. This type of pain is often difficult to treat and could require use of multiple medications, including tricyclic antidepressants (TCAs), anticonvulsants, NSAIDs, and opioids. The latter are the medications most implicated in cases of prescription drug abuse involving patients with chronic pain. Although opioids can be abused for many different reasons, their sedative and anxiolytic effects are prime targets for misuse. Likewise, there could also be a tendency to misuse nonopioids such as benzodiazepines and muscle relaxants like carisoprodol (which is converted in the liver to the barbiturate, meprobamate). In some cases, the overuse of benzodiazepines or other sedative-hypnotics could be related to the anticipatory anxiety associated with chronic pain.

UNDERSTANDING THE PROBLEM

As most EPs have come to recognize, individuals seeking prescription medications for nonmedical use present to the ED with a wide variety of complaints. This constitutes malingering or otherwise a form of deception for secondary gain. Such individuals could complain of syndromes that are impossible to absolutely refute such as a toothache, renal colic, migraine headaches, acute back pain, or sickle cell crisis.^{6,7} Alternatively, they can present with a chronic pain problem that is being treated with opioids by their primary care doctor or specialist who is “not available to refill the medication.” They can present stating they are without the opioids that they take regularly and perhaps are now visiting a relative in a distant city and need a prescription on an emergency basis. Consultation with their primary care physician could reveal a history of self-escalation of medications, calling for early refills secondary to lost or “stolen” prescriptions, multiple telephone calls, and/or visitations without an appointment to obtain medications. If a patient is known to be a prescription drug abuser, options other than opioids should be considered and a careful risk-benefit ratio analysis must clearly support their use. Documentation in the medical record is vital if a decision is made to deny a patient opioid analgesic. Nonsteroidal antiinflammatory agents are widely used in this situation. Commonly, prescription drug abuse and chronic pain are comorbid with anxiety and depressive disorders. In the presence of addiction or other psychiatric comorbidities, queries about the

availability of a mental health provider should be made and consultation or referral considered. Safe treatment of the underlying cause of distress, even if not directly related to the pain complaint, will likely reduce pain and suffering.

Dependence needs to be distinguished from addiction. Physical dependence is routinely present once an individual has been taking opioids for a prolonged period. This can be significant in the ED because abrupt opioid discontinuation leads to the development of the opioid withdrawal syndrome. Although physical dependence is possible with many drugs, including nonaddictive drugs, abrupt withdrawal from some drugs can be life-threatening (i.e., benzodiazepines or clonidine). Thus, although physical dependence and opioid withdrawal are often confused with addictive behavior, opioid withdrawal is usually not life-threatening or necessarily associated with addiction. Nonetheless, it is physically uncomfortable, and consideration should be given to either using medications to reduce the unpleasant symptoms or to avoiding it altogether by tapering the patient in 10% to 15% increments of the opioid equivalent dose every 48 to 72 hours. Symptoms of withdrawal can be mitigated with agents such as the α_2 -adrenergic agonist clonidine that decrease sympathetic responses (tremor, diaphoresis, and agitation), cyclobenzaprine for muscle cramps, and dicyclomine for gastrointestinal symptoms.⁷ However, these interventions treat physical symptoms only; treatment of anxiety, insomnia, or other forms of psychologic distress might also be required.

UNDERSTANDING PREVENTION PROGRAMS FOR PRESCRIPTION DRUG MISUSE AND ABUSE

The National Institute of Drug Abuse (NIDA) launched a new initiative on prescription drug misuse because of increasing concerns about prescription pain relievers, sedatives, and stimulants.⁸ The NIDA stated that the number of people who abuse prescription drugs each year roughly equals the number who abuse cocaine, approximately 2% to 4% of the population. No differentiation between pain relievers and other forms of prescription drug abuse were presented in this analysis. Data from the National Household Survey on Drug Abuse reveal that an estimated 9 million Americans, 12 years or older, used prescription pain relievers, sedatives, or stimulants for nonmedical reasons in 1999; more than one-fourth of them reported that they had used prescription drugs nonmedically for the first time in the previous year. The most dramatic increases in new nonmedical use of prescription drugs that act on the central nervous system (CNS) were among 12 to 25 year olds. Between the ages of 12 and 17, girls are more likely than boys to begin prescription drug abuse and are more likely to abuse stimulants and sedatives than other prescription drugs. Although young Americans are at risk, the elderly (persons aged 65 or older) are somewhat more vulnerable than are younger patients to unintentionally misuse and becoming habituated to prescription medications. In one study of more than 1,500 elderly patients, 50 patients, roughly 3%, were abusing prescription drugs.⁸ Research suggests that the elderly are less likely than younger patients to carefully follow instructions for taking medication, making them more vulnerable to the dangers of prescription drug misuse.

In response to the trend of young Americans to experiment with prescription drugs, NIDA has devised programs

to deliver information about drug abuse into classrooms.⁹ Teachers are provided with detailed instructions, background information, and lesson planning materials. Student materials include worksheets and, in lower grades, colorful trading cards. Prescription drug abuse is also being countered in physicians' offices. The use of an opioid contract is being used at multiple university pain clinics¹⁰ and family physicians' offices.¹¹ These types of agreements are widely used in the chronic administration of potentially abusable substances and are intended to improve adherence and enhance the therapeutic relationship by initiating an alliance between the patient and the physician. Contracts usually attempt to improve treatment through dissemination of information, plotting a mutually agreed-on course, and enhancement of adherence. The "opioid contract" often includes clear descriptions of medication use and abuse, as well as the consequences for violating the contract, and the procedure for opioid discontinuation should this become necessary. Terms for routine, random substance testing as part of the treatment plan are often explicitly stated. At present, there is no standard for what should comprise an effective opioid contract. The American Academy of Pain Medicine recently published suggested terms for obtaining written informed consent for prescribing opioids.¹² Unfortunately, it is not known exactly how effective contracts and consent forms are in preventing prescription drug abuse. Studies reviewing use of contracts for patients in methadone programs indicate that improved compliance is transient, with efficacy only in the few months of treatment.¹³ Saxon et al.¹⁴ found that the use of contracts in opioid-abusing patients was most effective when the terms were specific and placed increased responsibility on the patient. Although contracting does not usually come under the purview of an EP, it is critical for the ED clinician to be knowledgeable of their use so that the presence of a contract can be anticipated and even used during the ED visit. For instance, most contracts make it clear that there should only be one physician writing opioid prescriptions. If feasible, the medical record or physician responsible for prescribing opioids should be contacted, helping to establish the legitimacy of refilling a prescription in the ED.

There are practices unique to the ED for confronting potential prescription drug abuse. Some EDs maintain logs of problem patients or make telephone calls to other institutions about "drug-seeking patients." Patients with this moniker often have high ED visit rates. Improving communication theoretically would help identify patients who might benefit from more appropriate care using addiction specialists.¹⁵ However, caution should be exercised when implementing such "frequent flier lists" in the ED because confidentiality and accountability cannot be controlled.¹⁶ A case-management program for frequent users of the ED appears to be an alternative to improve the care for these difficult patients.¹⁷

PRESCRIPTION DRUG MISUSE AND ABUSE IN THE NEW AGE OF PAIN MANAGEMENT

As a result of the paradigm shift to promote pain management, physicians have begun to rethink the treatment of pain in the ED. One of the most visible forces behind this change has been the new guidelines promulgated by the

TABLE 2. Assessing Prescription Drug Abuse: Modified CAGE Pneumonic

Four Simple Questions²³

Have you ever felt the need to Cut down on your use of prescription drugs?

Have you ever felt Annoyed by remarks your friends or loved ones made about your use of prescription drugs?

Have you ever felt Guilty or remorseful about your use of prescription drugs?

Have you Ever used prescription drugs as a way to “get going” or to “calm down?”

Joint Commission on Accreditation of Healthcare Organizations. As a basis for accreditation, the revised guidelines mandate that hospitals treat pain as a “fifth vital sign” (along with temperature, pulse, respiration, and blood pressure).¹⁸ Despite this legitimization, pain still remains undertreated for both patients with chronic conditions and those who are critically or terminally ill.¹⁹⁻²² It is now agreed that pain management is an essential aspect of quality medical care and pain complaints should be taken at face value. Although opioid analgesics could be the most effective way to treat pain in the ED, there continues to be resistance to their use despite evidence that the liberalization of opioids has not brought about an increase in prescription drug abuse. A retrospective survey of ED medical records²³ from 1990 to 1996 stored in the databases of the Drug Abuse Warning Network, a NIDA-sponsored source of abuse data from EDs, supports this proposition. This data revealed expected increases in medical use of most opioids over the first half of the last decade (morphine 59% increase, fentanyl 1168% increase, oxycodone 23% increase, and hydromorphone 19% increase) and a decrease in the medical use of meperidine (35% decrease). During the same period, the total number of drug abuse mentions per year resulting from opioid analgesics increased from 32,430 to 34,563 (6.6%), although the proportion of mentions for opioid abuse relative to total drug abuse mentions decreased from 5.1% to 3.8%. Thus, the trend of increasing medical use of opioid analgesics to treat pain did not lead to an increase in diversion of opioid medications. Nonetheless, identifying patients at high risk for prescription drug abuse remains an important goal in the ED. The NIDA has recommended that clinicians modify the CAGE pneumonic originally devised for detection of alcoholism and apply it to prescription drug abuse.²⁴ Table 2 offers 4 simple questions that can be asked for assessing prescription drug abuse.

TREATING CHRONIC PAINFUL CONDITIONS IN THE ED

Many common chronic pain conditions have no known pathophysiology. Presumably, part of their etiology resides in disturbances of the CNS with respect to abnormalities, including sensitization of higher-order neurons, abnormal sprouting of neurons into pain pathways, and disinhibition. This type of pain does not customarily respond to opioids as opposed to somatic pain where there is an identifiable bodily injury. Headaches and backache are 2 of the most common painful conditions with putative neuropathic components and are commonly seen in the ED. Controversy remains as to whether these conditions should be treated

with opioids. There is less controversy concerning other painful conditions seen in the ED. The vasoocclusive crisis of sickle cell disease and renal colic are familiar yet problematic pain syndromes that are often treated with opioids. Because these are some of the most common pain complaints seen in the ED, each is discussed further.

Headaches

Chronic severe headaches can present a challenge to even the most seasoned clinician. They rarely have clear underlying pathology and often present with additional comorbid issues, including affective disorders, substance abuse, as well as iatrogenic polypharmacy. Frequent use of analgesics (either ergots or opioids) can produce analgesic rebound headache, leading to a chronic daily headache that can become refractory to treatment. Intense interest has surrounded butorphanol nasal spray, a synthetic agonist-antagonist opioid analgesic that exerts its effect on the mu, kappa, and sigma opioid receptors. Although this medication might alleviate headache in some individuals, misuse is suspected in many cases in which the drug is used incessantly. It is recommended that patients who are diagnosed as likely to have a rebound syndrome should be detoxified, either in an inpatient or outpatient setting, depending on the severity and intensity of the symptoms and the accompanying degree of emotional distress.²⁵ When used in moderation, butorphanol and other opioids can provide breakthrough pain rescue therapy for patients who have failed to respond to the more common abortive headache medications. It is commonly recommended that these short-acting analgesics be used no more frequently than 2 days per week in an attempt to avoid rebound analgesic headaches. Although intramuscular opioids are frequently used in the ED setting, there is little proof of their efficacy for acute migraine. Belgrade et al.²⁶ compared the effectiveness of dihydroergotamine, meperidine, and butorphanol in acute migraine and found the least pain reduction with meperidine. Injectable narcotics are thought to be difficult to dose and can produce sedation or orthostatic hypotension, prolonging the ED length of stay. Yet, they are frequently used in the setting in which alternatives (sumatriptan and DHE, dopamine antagonists such as metoclopramide, chlorpromazine, and prochlorperazine, dexamethasone) fail. Other alternatives to opioids for acute migraine include NSAIDs^{27,28} as well as intravenous²⁹ or intranasal lidocaine.³⁰

Low Back Pain

Back symptoms are among the 10 leading reasons for patients to visit the ED.³¹ Although symptoms are usually acute and self-limited, low back pain often recurs, becoming chronic in 5% to 10% of these patients.³² Table 3 presents how acute low back pain is aided in its diagnosis by application of the Agency for Health Policy Research’s warning signs of serious disease,³³ the so-called “red flags” that prompt earlier use of imaging studies. A history of cancer, unexplained weight loss, back pain not improved with rest, and age over 50 at the onset of low back pain are indicative of the need to image the spine to rule out malignancy. A history of immunosuppression, urinary infection, intravenous drug use, or prolonged use of corticosteroids warrant

suspicion of an infective process (osteomyelitis of vertebrae, discitis, or epidural abscess). For spinal fracture, red flags include a history of significant trauma (e.g., a fall from a height, motor vehicle accident, a minor fall, or heavy lift in an osteoporotic elderly individual), prolonged use of steroids, and age greater than 70. For cauda equina syndrome or severe neurologic compromise, red flags include medical history or physical examination findings of acute onset of urinary retention or overflow incontinence, loss of anal sphincter tone or fecal incontinence, saddle anesthesia (about the anus, perineum, and genitals), and global or progressive motor weakness in the lower limbs. When these signs and symptoms are present, evaluation with magnetic resonance imaging of the lumbosacral spine is indicated. If not present, a more conservative approach to acute low back pain could be warranted to avoid the imaging of a false-positive finding.^{34,35} The latter could lead to unwarranted surgery because approximately 90% of acute cases of low back pain resolve within 3 months.³⁶ A short course of bed rest (2 days) and analgesic medications are prescribed with the advice to make an appointment with a primary care physician if the symptoms do not soon subside. Once the point is reached when limited activities and time have not reversed symptoms, physicians face a dilemma regarding when to use strong analgesics. Although the Agency for Health Policy Research low back management guidelines regard opioids as rarely necessary, it would appear that the patient's complaints regarding pain mandate the use of these medications if nonopioids (i.e., acetaminophen, NSAIDs, and so on) have not succeeded. In such cases, a brief course of a short-acting opioid (i.e., oxycodone, hydrocodone, acetaminophen with codeine), using the lowest effective dose, could be a reasonable option.

TABLE 3. "Red Flags" to Prompt Earlier Use of Imaging Studies: Agency for Health Policy Research's Warning Signs of Serious Disease³²

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|---|---|
| Warning signs for: | |
| Malignancy | |
| | History of cancer |
| | Unexplained weight loss |
| | Back pain not improved with rest |
| | Age over 50 at the onset of low back pain |
| Infective process (osteomyelitis of vertebrae, discitis, or epidural abscess) | |
| | History of immunosuppression |
| | History of urinary infection |
| | Intravenous drug use |
| | Prolonged use of corticosteroids |
| Spinal/fracture | |
| | History of significant trauma (e.g., a fall from a height, motor vehicle accident, or a minor fall or heavy lift in a, osteoporotic individual) |
| | Prolonged use of steroids |
| | Age greater than 70 |
| Cauda equina syndrome or severe neurologic compromise | |
| | Medical history/physical examination findings of acute onset of urinary retention or overflow incontinence |
| | Loss of anal sphincter tone or fecal incontinence |
| | Saddle anesthesia (about the anus, perineum, and genitals) |
| | Global or progressive motor weakness in lower limbs |

TABLE 4. Waddell's Criteria to Identify Patients Who Are Not Surgical Candidates*

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|--|
| Widespread lumbar tenderness |
| Pain during rotation of thoracolumbar unit (without spinal mobilization) |
| Absence of pain on distraction |
| Presence of nonanatomic weakness or sensory disturbance |
| Overreaction |

*presence of 3 or more of these factors suggests that there exists a significant biobehavioral component to the patient's pain³⁷

The role of opioid therapy in the management of chronic musculoskeletal pain is controversial because of the limited number of valid clinical trials investigating this approach. To add to the dilemma, psychiatric comorbidity is very common in these patients, especially depression, which has a prevalence approximately 3 to 4 times greater than that reported in the general population.³⁷ There is one well-described tool available to aid in distinguishing the patient who has a strong psychologic component to their back pain. Waddell³⁸ has developed and validated a number of criteria that can identify patients who are not surgical candidates. Table 4 displays the 5 elements to this evaluation; the presence of 3 or more of these factors suggests that there is a significant biobehavioral component to the patient's pain. The 5 elements include: widespread lumbar tenderness, pain during rotation of the thoracolumbar unit (without spinal mobilization), absence of pain on distraction, presence of nonanatomic weakness or sensory disturbance, and overreaction. Although this type of examination is not without its caveats and critics, it remains appropriate to consider the many factors in the patient's life and work that could affect their back pain. For example, return to work is directly correlated with job satisfaction. Deciphering the motivation and endurance issues in the patient with chronic low back pain can require time and continuity, which is a luxury in the ED. It would therefore be wise to have the patient with chronic low back pain managed by a primary care physician in concert with a multidisciplinary team adept at reviewing the various issues in the patient's life that are amplifying their problem. The role of the EP is to address acute exacerbations within the context of the patient's overall treatment plan. It is often prudent to consult with the patient's physicians before initiating new or potentially controversial treatments that could be of short-term value but which could disturb a delicate chronic opioid treatment plan. Decisions about long-term opioids are usually best made by the primary care physician, often in conjunction with a pain specialist. Opioids are considered only a fraction of the solution in this type of syndrome, which usually must be accompanied by a multidisciplinary approach toward physical and psychologic rehabilitation to bring about pain relief and improve patient functioning.

Sickle Cell Disease

The pain of a vasoocclusive crisis can be provoked by extremes or changes of temperature, infection, dehydration, high altitude, stress, fatigue, and menstruation; alternately, no cause might be found.³⁹ Patients with episodes of severe pain often require hospitalization. Function could be se-

verely impaired when attacks are frequent and severe. Patients with the highest rate of hospitalization resulting from painful episodes tend to die at earlier ages than patients with the lowest rates, thus making pain not only a symptom of clinical severity, but also an indicator of mortality.⁴⁰ Unfortunately, patients requiring frequent interventions for analgesia could be viewed by healthcare workers as being abusers who are addicted to opioids. There have been reports regarding the undertreatment of patients presenting with pain secondary to sickle cell disease. For instance, the perception of opioid misuse by healthcare providers was studied at the ED of an urban teaching hospital. This ED had a population consisting primarily of lower socioeconomic patients of African-American origin.⁴¹ This survey found that opioid dependence was suspected by medical personnel in a higher number of patients with sickle cell disease than for other types of pain. With the growing awareness of undertreatment of vasoocclusive disease during sickle cell crisis, studies have centered on patient control of analgesia in the ED with the use of patient-controlled analgesia (PCA) devices.⁴² PCA allows the patient to take an active role rather than wait for nursing personnel to administer the medication. In addition, there have been attempts to find alternative analgesics. First-line therapy with intravenous ketorolac can be tried, although it tends to be ineffective if there are multiple painful sites or when the pain is severe (Visual Analog Scale >7).⁴³

Renal Colic

Renal colic affects between 2% and 5% of the population, with a predisposition toward young adult males. Characteristically, patients present with acute flank pain with radiation into the groin or lower back with nausea, vomiting, and hematuria. A small minority (10-15%) of patients with renal colic do not have hematuria. An imaging study (intravenous pyelogram or helical computed tomography) can be helpful in establishing the diagnosis. Patients could also have symptomatic discomfort between episodes. One study demonstrated persistent hypersensitivity to painful experimental electrical stimulation of the flank between attacks of nephrolithiasis.⁴⁴ Pain thresholds were lower on the affected side with respect to both the contralateral side and control thresholds recorded in normal subjects. This human pain threshold study corroborates animal experiments that revealed abnormalities in sensitization of higher-order neurons in animal models of chronic pain.

Renal colic illustrates the importance of understanding the underlying pain mechanism when making analgesic choices. Although intravenous opioids are an important therapy option for the relief of pain caused by renal calculi, the underlying pain mechanism for renal colic is complex and appears to involve prostaglandin-mediated pain from increased intrarenal pelvic pressure and stretch resulting from peristalsis.^{45,46} Not surprisingly, therefore, NSAIDs have been found to be effective in nephrolithiasis as a result of their prostaglandin inhibition. Indomethacin, ibuprofen, diclofenac, and ketorolac have all been shown to be effective in nephrolithiasis. In one study, intramuscular ketorolac was used as a single agent for renal colic and was shown to be more effective than meperidine as well as to prompt earlier discharge of the renal colic patients from the ED.⁴⁷ In

a metaanalysis on the efficacy of NSAIDs in the treatment of renal colic, Labrecque et al.⁴⁸ found that NSAIDs were at least as effective as analgesic agents and more effective than placebo. They concluded that NSAIDs were an effective substitute for opioids in treating renal colic.

CONCLUSIONS

Pain relief is an essential component of care in EM. With recent advances in the state of the art of pain management and ongoing legal and regulatory changes, EM is now confronted with new analgesic options as well as new problems. EPs are likely to embrace new analgesic therapies that are well suited to the ED, which will improve outcomes. Alternatively, there might be less time to address the medical, psychologic, and social complexity that can accompany patients with chronic pain. In this new age where pain management is viewed by some as a patient entitlement and overuse of opioids is receiving increased media attention and socioeconomic stigma, ED physicians could see themselves caught in a bioethical dilemma. Increasing regulatory, legislative, and legal scrutiny has implicated physicians who have been judged to either over- or undertreat pain. Legal cases have been successfully brought against physicians on either side. Although such cases have not yet implicated the ED, EPs are potential players in such controversies in the future. However, more to the heart of the matter, as a guiding principle of medicine and core covenant with our patients, every EP must embrace providing timely and effective pain control as a fundamental duty. Thus, understanding and practicing rational and effective pain management in the ED is essential for the optimal care of patients, the protection of individual clinicians, as well as for the long-term credibility of the relatively young discipline of EM.

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