

MEDICAL PRACTICE

Chronic Pain: Treatment Barriers and Strategies for Clinical Practice

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Background: Chronic pain is a clinical challenge for the practicing physician. Lack of knowledge about opioids, negative attitudes toward prescribing opioids, and inadequate pain-assessment skills combine to create major barriers to pain relief. Patient-related barriers, such as lack of communication and unwarranted fears of addiction, further complicate pain assessment and treatment. The health care system itself can hinder pain relief through practical constraints in the community and fear of regulatory scrutiny by the physician.

Methods: Information was gathered by doing a literature search, collating clinical information from practice and additional research findings from national meetings, and reviewing the *Bulletin of the American Pain Society*. Key search terms included “pain,” “chronic pain,” “pain management,” “pain assessment,” “pain treatment,” and “barriers to pain management.”

Results and Conclusions: Concrete steps for the clinician engaged in the treatment of chronic pain include selection and administration of an effective opioid, dose titration, short- vs long-acting opioids, opioid rotation, ongoing assessment, and consideration of patient preferences. In addition, communication, coping behaviors, and pain education play important roles in the pain equation. (J Am Board Fam Pract 2001;14:211–18.)

The prevalence of chronic pain among adults in the United States has been estimated to range from 2% to 40% of the general population^{1–3} and from 45% to 80% among nursing home patients,⁴ and it has been found in up to 75% of patients with advanced cancer.⁵ Because more than 40% to 50% of patients in routine practice settings fail to achieve adequate relief, chronic pain is now considered to be a public health problem of major proportions.⁶ Chronic pain can dramatically affect quality of life, a multidimensional concept that includes physical, psychological, spiritual, and social domains.⁷ Unrelenting pain is associated with anxiety, depression, loss of independence, and interference with work and relationships. The annual cost of chronic pain, including medical expenses, lost income, and lost productivity, is an estimated \$100 billion.^{3,8}

For all these reasons, it is essential that primary care physicians become knowledgeable in the area of pain management. Because pain is such a subjective experience, influenced by a host of nonmedical factors, including age, sex, culture, communication style, and fear of addiction, these demographic and behavioral barriers must be considered in assessment and treatment.^{9,10} This article presents an overview of the major barriers to chronic pain management, with strategies for overcoming them in clinical practice.

Methods

Information was gathered by doing a literature search, collating clinical information from practice, as well as additional research findings from national meetings, and referring to the *Bulletin of the American Pain Society*. Key search terms included “pain,” “chronic pain,” “pain management,” “pain assessment,” “pain treatment,” and “barriers to pain management.”

Barriers to Effective Pain Management

Undertreatment of Pain

In a recent study of 805 chronic pain sufferers, it was reported that more than 50% found it neces-

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sary to change physicians in their quest for pain relief. Specific reasons for changing physicians included lack of physicians' willingness to treat the pain aggressively, failure to take the pain seriously, and lack of knowledge about pain management.³ In a study of 1,308 outpatients with metastatic cancer,¹¹ 67% (871) of the patients reported that they had pain or had taken analgesic drugs daily during the week preceding the study, and 36% (475) had pain severe enough to impair their ability to function. Forty-two percent of those with pain were not given adequate analgesic therapy. A discrepancy between patient and physician in judging the severity of the patient's pain was predictive of inadequate pain management. One third of practitioners reported that they would wait until the patient had less than 6 months to live before starting the maximal tolerated analgesia for severe pain.

Although opioid use in the treatment of chronic cancer pain has gained increasing acceptance worldwide, the debate continues regarding the use of these analgesics in the treatment of chronic non-malignant pain.^{2,12,13} A recent review concludes that the reluctance to use opioids for noncancer pain treatment has resulted in ineffective relief for a large group of patients. Several researchers have found physician resistance to treating chronic non-malignant pain with opioids. Regulatory concerns, beliefs about the inevitability of tolerance, concern about long-term safety and durability of response—all combine to reduce the willingness of primary care physicians to prescribe opioids for chronic nonmalignant pain.¹⁴

Clinician Barriers

Gaps in knowledge, negative attitudes toward prescribing opioids, inadequate assessment skills, and timidity in prescribing are barriers that clinicians can unwittingly bring to clinical encounters with patients.^{15,16} The problem might begin with the low priority given to pain treatment in medical schools and residency training programs. When asked about their training in pain management, 88% of physicians reported that their medical school education in pain management was poor, and 73% reported that residency training was fair or poor.^{15,17} In a study of physician attitudes and practice, Von Roenn and associates¹⁵ asked physicians to describe barriers to pain relief in their practice settings. The 897 physicians who completed the survey were members of the Eastern

Cooperative Oncology Group, and all had patient care responsibilities. Approximately three fourths of the physicians (76%) cited their own sense of low competence in patient assessment as the major barrier to effective pain management. Reluctance to prescribe opioids was cited by 61% of the respondents as the second most important barrier.¹⁵ These clinician-related barriers have been borne out by subsequent research, and they tend to be compounded in the treatment of nonmalignant pain.¹²

Patient-Related Barriers

Patient-related barriers include communication, psychological, and attitudinal issues. In a sample survey of cancer patients receiving services from an outpatient social service agency, patients who reported communication problems with their physicians had significantly worse pain than those who did not.¹⁸ Several psychological factors can influence pain assessment and treatment, such as anxiety, distress, depression, anger, and dementia, all of which can complicate assessment by masking symptoms. Ward and colleagues¹⁹ measured the extent to which patients' attitudes toward pain and opioids pose barriers to treatment. Fear of addiction, tolerance, and side effects were described by patients as their most important concerns. Fatalism and the desire to please the clinician were also cited by a majority of respondents. Some patients expressed the belief that pain was inevitable, indicating that they did not expect medication to relieve their pain. In addition, patients associated pain with worsening disease. Such concerns can result in patients' reluctance to report pain or comply with a regimen that involves opioid medication.

Health Care System Barriers

The health care system itself can pose barriers to effective pain relief in the form of practical constraints. The lack of a neighborhood pharmacy, the lack of transportation to the physician or pharmacy, an absence of high doses of opioids at the pharmacy, and the lack of a home caregiver to assist with administering drugs pose major obstacles to pain treatment. Changes in reimbursement policies impose barriers, especially for older patients whose Medicare benefits do not pay the costs of outpatient prescription drugs.²⁰ In addition, patients and caregivers might confront increasing co-payments, out-of-pocket expenses, limits on the number of pre-

scriptions filled per month, and limits on refills. Finally, fear of regulatory scrutiny for prescribing controlled substances has been shown to discourage physicians from prescribing opioids of sufficient strength for the patient's pain, especially for chronic nonmalignant pain.¹¹ Such fears can result in the selection of less effective analgesics and, ultimately, undertreatment of the patient's pain.

Demographic Considerations in Assessment and Treatment

When assessing and treating chronic pain, the clinician would be wise to consider nonmedical factors, including age, sex, and race.

Age

Older patients with mild to moderate cognitive impairment often require extra time to assimilate questions, have a limited attention span, and are easily distracted. When assessing pain in these patients, good ambient lighting, amplified hearing devices, and visual cues in large print have been found to be effective. In addition, the clinician should always face the patient directly, speak slowly and clearly, and keep the interview brief. Repeating or rewording questions might be necessary.²

Sex

Variations in pain by the sex of the patient are likely to represent an interaction of biologic and psychological components. Some differences in prescribing by sex, however, might not be patient based. Instead, physicians' opioid-prescribing habits might be affected by gender stereotypes. McDonald²¹ reviewed the medical records of 101 male and 79 female adult appendectomy patients without postoperative complications and found that male patients received significantly larger initial doses of opioid analgesics than did female patients ($P < .001$), but no gender difference was noted in the total dose of opioid analgesic received in the postoperative period. McDonald suggested that the differences in initial doses of opioid analgesic might be due to gender stereotyping during the initial postoperative period, when the patient is still drowsy and unable to make his or her needs known. Similarly, a study by Cleeland et al¹¹ found that in a population of patients with metastatic cancer, being female was a significant predictor of inadequate pain management.

Race

In the same study, the percentage of patients with negative scores was three times higher in community clinical oncology programs that treated predominantly minority patients, primarily African Americans and Hispanics. Minority patients were more likely than nonminority patients to have inadequate analgesia.¹¹ Bernabei et al,²² in a study of end-of-life pain management and access to care, found that members of a minority race were among the least likely to receive analgesics. In addition, patient relief might be withheld because physicians fear drug-seeking and substance-misuse behavior in this subset of patients.²³

Selecting Effective Treatment for Chronic Pain

Guidelines issued by the US Agency for Health Care Policy and Research (AHCPR) for managing cancer pain incorporate various treatment modes, including the three-step analgesic ladder of the World Health Organization.⁵ On diagnosis of chronic pain, step 1 recommends prescribing a nonopioid medication with or without an adjuvant medication, if necessary. If the pain persists or increases, step 2 recommends prescribing an opioid medication for mild to moderate pain along with a nonopioid medication and an adjuvant medication, if necessary. If the pain continues to persist or increase, step 3 recommends an opioid medication for moderate to severe pain along with a nonopioid medication and an adjuvant medication, if necessary.¹⁵

Guidelines for Opioid Use

"Start low, go slow" is particularly apt for older patients, because they are likely to achieve optimal pain control from doses lower than those needed by younger patients. In general, pain is stabilized with immediate-release preparations; then treatment is switched to sustained-release forms, with immediate-release agents available as needed for breakthrough pain.

Dosing Intervals

The benefits of long-acting opioids for chronic pain include continuous pain relief, less peak-and-trough effect found with short-acting opioids, less sleep disturbance, fewer problems with patient compliance, and fewer reported side effects.^{12,24} Opioid analgesics should be administered at regular

Table 1. Dose Equivalencies.

Medication and Dose	Initiation	1st Titration	2nd Titration	3rd Titration
Oral morphine, mg/d q 12 h	45–134	135–224	225–314	315–404
Intramuscular or intravenous morphine, mg/d	8–22	23–37	38–52	53–67
Oral oxycodone, mg/d q 8–12 h	22.5–67	67.5–112	112.5–157	157.5–202
Intramuscular or intravenous oxycodone, mg/d	12–33	33.1–56	56.1–78	78.1–101
Oral codeine, mg/d q 3–4 h	150–449	450–749	750–1049	1050–1349
Intramuscular or intravenous codeine, mg/d	104–292	293–487	488–682	683–877
Oral hydromorphone, mg/d q 3–4 h	5.6–16.7	16.8–28	28.1–39.2	39.3–50.5
Transdermal fentanyl, $\mu\text{g/h}$ q 72 h	25	50	75	100

From: Duragesic dosage conversion reference guide. Titusville, NJ: Janssen Pharmaceutica, 1997.

intervals, not as needed. Avoiding sharp trough levels can reduce overall drug consumption.²⁵

Titration

Titration is the adjustment of medication to maintain optimal analgesia in response to patients' reports of pain. The titration of an opioid analgesic should be made, if needed, 3 days after the initial dose. Thereafter, dose titrations can be made in 24-hour periods. Opioids have no ceiling effect; therefore, the dose can be increased until the desired analgesic effect is obtained or until side effects become intolerable. Dose equivalencies are listed in Table 1.

Commonly Used Opioids

The least invasive route of administration should be used first, which generally means an oral or transdermal route. Some of the most commonly used long-acting preparations are discussed below.

Morphine is considered the reference standard of opioid analgesics. It is available in sustained-release form and may be given orally or parenterally. Sustained-release morphine does not release morphine continuously during the course of the dosing interval. For patients whose daily morphine requirements are expected to be 120 mg/d or less, the 30-mg tablet strength is recommended for the initial titration period. Once a stable dose regimen is reached, the patient can be converted to the 60-mg or 100-mg tablet strength, titrating upward until adequate analgesia is achieved. The 200-mg tablet strength is a high-dose tablet indicated for the relief of pain in opioid-tolerant patients only. The increased risk of morphine use in older patients should be taken into account, especially in patients with severe renal or hepatic impairment.³

Fentanyl is available as a sustained-release opioid analgesic administered through the skin via a transdermal patch. The patch is available in four strengths: 25, 50, 75, and 100 $\mu\text{g/h}$. The initial dose for opioid-naïve patients should not exceed 25 $\mu\text{g/h}$, with the dose titrated upward if needed for maximal pain control. Transdermal fentanyl is designed for duration of action of up to 72 hours, although its effective activity might exceed 72 hours in older patients. The peak effects of the first dose can take 18 to 24 hours to achieve. In this phase, immediate-release analgesics may be administered for breakthrough pain.^{3,25}

Oxycodone is available in a sustained-release form, although an immediate-release opioid is usually necessary for breakthrough pain, as is also the case for sustained-release morphine.^{8,25} A reasonable starting dose for most patients who are opioid-naïve is 10 mg every 12 hours. If greater analgesia is needed, the amount, but not the frequency, of the sustained-release dose may be increased. In controlled pharmacokinetic studies in older patients, the clearance of oxycodone appeared to be slightly reduced.

Methadone is a synthetic opioid derived from opium. Although methadone has been available for many years, primarily to treat opioid addiction, a resurgence of interest has occurred in its analgesic properties for patients with chronic, nonmalignant pain and cancer pain. Methadone accumulates with repeated dosing because of its long half-life of 17 to 128 hours, and it has enormous interindividual variability in clearance. It is recommended that this drug be prescribed as needed during initial titration to avoid excessive side effects during the titration period. There are no known active metabolites of methadone, which makes it attractive for patients at

risk for toxicity associated with metabolite accumulation. Other advantages include its low cost, relative potency and long duration of analgesia with on-going use, and multiple routes of administration.²⁶ Difficulties with methadone use include vast differences in pharmacokinetics among patients, a poorly defined equianalgesic potency, and its long half-life, which can be associated with toxicity, especially among the elderly. If clinicians heed the advice to start low and go slow, however, methadone can be used safely and effectively.²⁶

Pharmacokinetic differences exist among opioid analgesics. When selecting an analgesic, the activity of metabolites, cytochrome P-450 drug interactions, side-effect profiles, and potential for dehydration should be reviewed carefully. Before initiating pain therapy, careful attention should be paid to other drugs the patient might be taking. The patient's age and degree of renal or hepatic impairment are important considerations as well.⁷

Strategies for Clinical Practice

Clinicians can take several concrete steps to address the factors that influence the assessment and treatment of the patient with chronic pain.

Conducting Optimal Assessments

The clinician should assess pain frequently and at regular intervals, using one of several available brief self-report questionnaires, including the numerical 0 to 10 scale (in which 0 equals no pain and 10 the worst pain imaginable), pain diaries, pain logs, faces scales, and color scales. A complete listing of these tools can be found in the AHCPR guidelines on the management of cancer pain.⁵

Improving Communication

To improve communication, the practicing physician should initiate discussions about pain with the patient and the family, reassess pain more frequently (perhaps monthly or bimonthly if the pain is not well controlled), and encourage patients to report changes, both positive and negative, in pain status. Because family caregivers play a key role in chronic pain management, they should be included in assessment and treatment to ensure that they support the treatment plan in the home. Family caregivers are required to assess and report pain, fill prescriptions, administer medication, manage emergencies, and provide ongoing emotional sup-

port.^{7,27} In addition, caregivers encourage the patient to report pain, remind the patient to take medication, and legitimize or question the experience of pain and its treatment.

Recognizing and Treating Side Effects

When assessing the patient, the clinician should always inquire about side effects, develop a plan for treating them, and explain the plan to the patient.^{4,19} If the clinician does not inquire about side effects or does not initiate prompt treatment, patient compliance might be affected.

The most common side effect of opioid analgesia in patients with either malignant or nonmalignant pain is constipation.¹² Unlike the other common opioid side effects, constipation does not improve with time. A prophylactic bowel regimen should be initiated at the start of opioid therapy. Other common side effects include somnolence, confusion, nausea, and vomiting. Patients usually develop tolerance to these effects within 1 week to 10 days. If side effects become intolerable, relief can be attained through dose titration, adjuvant therapy, or opioid rotation.

Opioid rotation can be implemented to improve treatment efficacy, reduce side effects (especially sedation and myoclonus), and reduce tolerance.

Ongoing Assessment

The chronic pain patient should be monitored frequently after initiating treatment. The analgesic efficacy of the chosen opioid therapy, as well as the level of side effects and the effects on patient functioning, should be assessed with the aim of attaining improvement in the patient's ability to perform activities of daily living. For the patient on a new medication regimen, monthly follow-up is recommended. Once the treatment protocol has been established, follow-up visits can be extended to 3-month intervals. In all cases, the patient should be encouraged to contact the physician's office to report on their progress and side effects, if any.

Promoting Coping Behaviors

To maximize the success of a pain management strategy, physicians can assist the patient in reporting pain, taking pain medication exactly as prescribed, increasing activity level, participating in rehabilitation, and using cognitive behavioral techniques (for example, hypnosis, distraction, biofeedback, relaxation, and imagery). Patients might ben-

efit from psychotherapy, a group support, or a multidisciplinary rehabilitation program.

Ongoing Education

Pain practitioners can stay abreast of the latest developments in the area of pain management in a variety of ways, including continuing medical education conferences, pain journals, and pain Web sites, such as the following:

- <http://www.ampainsoc.org/>
- <http://www.medsch.wisc.edu/painpolicy/>
- <http://www.painmed.org/>
- <http://www.druglibrary.org/schaffer/asap/index.htm>
- <http://www.cancerpainrelief.com/>
- <http://www.StopPain.org>

Considering Patient Preferences

In a cross-sectional study of patients with late-stage cancer receiving either transdermal fentanyl (Duragesic) or sustained-release oral morphine (MS Contin, Oramorph SR), investigators found that patients receiving transdermal fentanyl were more satisfied overall with their pain medication than were those receiving sustained-release oral morphine ($P = .035$). Fentanyl patients also reported a significantly lower frequency ($P < .002$) and impact ($P < .001$) of side effects.²⁸

An open-label study of transdermal fentanyl was conducted in patients with chronic low-back pain of 6 months' duration or longer that was not adequately controlled with short-acting opioids. Transdermal fentanyl significantly reduced pain intensity scores as measured by both a visual analog scale, which declined from 79.78 to 44.22 ($P < .0001$), and a numerical pain scale, which declined from 8.02 to 6.02 ($P < .0001$). Although the results were less dramatic, transdermal fentanyl therapy also significantly reduced disability. At the conclusion of the study, 43 patients (86%) reported experiencing overall benefit from transdermal fentanyl in controlling low-back pain, while 7 patients (14%) did not experience measurable overall benefit. The 43 patients stated that they would recommend transdermal fentanyl to other persons with chronic low-back pain.²⁹

Concern About Addiction and Aberrant Drug-Taking Behavior

Confusion persists regarding the correct meaning of addiction, tolerance, and physical dependence.

The National Federation of State Medical Boards has defined addiction as psychological dependence on the use of substances for their psychic effects, characterized by compulsive use despite harm. Tolerance is a form of neuroadaptation to the effects of opioid or other medications administered long-term and is manifested by the need for increasing or more frequent doses of the medication to achieve the initial effects of the drug. Tolerance can develop both to the analgesic effects of opioids and to unwanted side effects, such as respiratory depression, sedation, and nausea. Tolerance is a natural and expected outcome of opioid therapy, which resolves during treatment and should not be misconstrued as addiction. Addiction and tolerance should be distinguished from physical dependence, which refers to the physiologic adaptation of the body to the presence of an opioid medication required to maintain the same level of analgesia. Even if physical withdrawal occurs when the opioid medication is abruptly withdrawn, physical dependence should not be confused with true addiction.⁵

A survey of published data of opioid use in the treatment of chronic nonmalignant pain revealed little risk of addiction in patients who had no history of substance abuse.²⁴ The factors that predispose to addiction have not been confirmed, however, and there is no proven method of screening people at risk for addiction. Accordingly, although addiction is unlikely for patients with no history of substance abuse, each behavior has to be addressed as it arises in practice.

Patients in unremitting pain might exhibit behavioral characteristics suggestive of addiction; these behaviors, however, should be distinguished from true aberrant activities. The term *pseudoaddiction* refers to the perception by observers of drug-seeking behavior by patients who have severe pain. These behaviors can include drug-seeking behavior, medications taken in larger amounts than prescribed, running out of medications prematurely, tolerance, and withdrawal symptoms. There is an emerging consensus that these behaviors are not often associated with true addiction but are a result of serious undertreatment for pain. It is increasingly believed that pseudoaddictive behavior can be distinguished from true addictive behavior if higher doses of an opioid analgesic result in elimination of these behaviors.³⁰

Of concern to the physician should be the following drug-related behaviors: forging or stealing

prescriptions, selling prescription medications, repeatedly escalating doses, or obtaining drugs from multiple sources.²⁴ Patients who exhibit such dysfunctional behaviors, even in the wake of genuine pain, probably warrant the involvement of addiction medicine specialists in the treatment plan.

Secondary Gain

Although most pain patients desire to be pain-free, there is a subset who engage in pain behaviors to avoid their responsibilities. In such cases, the pain behaviors could be considered to be dysfunctional and deliberate, resulting in secondary gain for the patient. For such complex patients an interdisciplinary treatment approach or specialized services through a pain treatment center might be optimal.³¹

Conclusion

The prevalence and impact of chronic pain warrant serious attention. Clinicians, researchers, and patients agree that pain can consume every aspect of life and influence overall quality of life. Physicians are in the position to improve the plight of the chronic pain patient but must overcome numerous barriers obstructing effective treatment. These barriers include a lack of basic knowledge about pain management strategies, the need for proper pain assessment and reassessment, concerns surrounding opioid use, and a treatment plan tailored to meet the physical and psychologic needs of the pain patient. With the myriad pain treatment options now available and with recognition of the high costs of undertreated pain, the primary care physician can effectively intervene to improve the quality of life for the chronic pain patient.

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