



Invited Commentary | Substance Use and Addiction

Nonopioid Treatments for Chronic Pain—Integrating Multimodal Biopsychosocial Approaches to Pain Management

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Chronic pain is a major health burden in the US, with recent estimates indicating that 1 in 5 adults has chronic pain.¹ Nearly 40% of these individuals experience substantial impairments in function or daily activities as a result of their pain.¹ The prevalence of chronic pain has been growing in the past 2 decades, accompanied by an increase in opioid prescribing for pain. However, the exponential increase in opioid-related deaths prompted the development of the 2016 Centers for Disease Control and Prevention (CDC) guideline to reduce opioid prescribing for chronic pain.² This guideline, along with several other efforts to limit opioids, has been associated with decreased opioid prescribing rates across multiple settings and patient populations.^{3,4}

Although promising, minimizing the use of 1 treatment strategy without ensuring access to other effective and viable alternatives may expose patients to inadequate treatment and worsening of chronic pain. The CDC guideline attempts to address this issue by recommending nonopioid medication and nonpharmacologic pain management as first-line treatments for chronic pain.² However, a major question remains: has the reduced use of opioids been accompanied by greater use of alternative treatments for chronic pain?

The study by Goldstick et al⁵ takes a major step toward answering this question. The authors assessed the prescribing rates of several classes of nonopioid pain medications before and after the release of the 2016 CDC guideline. They included a large nationwide cohort of commercially insured patients with some of the most common types of chronic pain: neck or back pain, osteoarthritis, nonmigraine headaches, and fibromyalgia. The analysis focused on specific medication classes that have been commonly prescribed for chronic pain: nonsteroidal anti-inflammatory drugs, acetaminophen, gabapentinoid and carbamazepine anticonvulsants, and antidepressants. These medications have been shown to provide small-to-moderate short-term benefit and are recommended by guidelines for chronic pain treatment.⁶ Medications whose evidence was primarily for acute pain management (eg, skeletal muscle relaxants) were not included. The authors constructed sequential cohorts to analyze the prescribing patterns over time for the overall population and for specific subpopulations.

Similar to previous work, the study by Goldstick et al⁵ found greater reductions in opioid prescribing after the release of the 2016 CDC guideline compared with the preguideline pattern. The authors also found that, although nonopioid prescribing rates had remained relatively constant over the 4-year period before the release of the guideline, these rates steadily increased during the 2 years after the release. Similar patterns were found when examining specific subpopulations, including those with chronic pain, previous opioid exposure, substance use disorder, anxiety disorder, or mood disorder.⁵

These shifts suggest that nonopioid medications replaced opioid medications, but the overall increase in nonopioid prescribing rates was small. On the other hand, claims data analysis cannot account for commonly used over-the-counter medications (eg, nonsteroidal anti-inflammatory drugs and acetaminophen). Furthermore, although not guideline-recommended, other medication classes (eg, benzodiazepines and topical lidocaine) that are sometimes prescribed for pain were not included in the analysis. Thus, these findings may potentially underrepresent the increase in clinician recommendations for nonopioid pain medications.

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In addition, this study did not assess the extent to which populations affected by health disparities experienced differential prescribing of nonopioids. In particular, the insurance claims data set from this study did not include patients with public insurance (eg, Medicaid) or no insurance, nor were demographic subgroups analyzed.⁵ Previous studies found that patients of Black race, with low income, without insurance, and with Medicaid coverage received fewer opioids, nonopioids, and referrals for nonpharmacologic treatment for pain.^{7,8} Therefore, a related but unanswered question is whether the 2016 CDC guideline played a role in nonopioid prescribing among historically minoritized populations.

Chronic pain can be difficult to treat, and medication treatments are just one approach to managing pain. A related limitation of claims data is that they cannot be used to assess whether different treatment approaches were effective for managing pain. Most evidence-based treatments show person-level variability in treatment response and small-to-moderate overall effect sizes for any individual therapy.⁶ Moreover, given that every medication has some degree of adverse effects and/or contraindications, it is challenging to apply the same treatments to all patients. Some nonopioid medications still have high adverse effect profiles, habit-forming potential, and low levels of benefits, making them poor alternatives to opioids.⁶ For instance, gabapentin is an anticonvulsant drug that is commonly used for pain with substantial adverse effects (eg, sedation, dizziness, and nausea) and that frequently leads to medication intolerance and cessation of the drug for many patients. For other patients, gabapentin has abuse and dependence potential that is similar to that of opioids.

Another pitfall is that medications rarely treat all of the factors associated with pain, because pain is now well established as a biopsychosocial phenomenon.⁹ This means that an individual's underlying biological, psychological, cognitive, and social characteristics interact in a complex way and in combination with both the situation and the environment, producing the individual's pain experience. Downstream, pain further affects an individual's health and quality of life, including physical and emotional health, psychological and behavioral responses, physical and social function, mood, and daily activities. Accordingly, a holistic, biopsychosocial approach is key to understanding the pain experience as well as developing and incorporating effective strategies for pain management.

Multimodal treatments incorporate both pharmacologic and nonpharmacologic strategies, have a growing evidence base, and are recognized as effective for treating chronic pain.¹⁰ Nonpharmacologic approaches (eg, therapeutic exercise, manual therapy, and cognitive behavioral therapy) are delivered by clinicians across the rehabilitative spectrum, including acupuncturists, chiropractors, nurses, osteopaths, physical therapists, and psychologists. Subsequently, nonpharmacologic approaches compared with medications likely target a larger breadth of biopsychosocial factors. Yet, the study by Goldstick et al⁵ did not assess whether the 2016 CDC guideline was associated with an increase in referrals to such nonpharmacologic approaches. Thus, nonpharmacologic management referral is an important area of investigation.

A major barrier to the use of nonpharmacologic pain strategies and a limitation to using claims data to assess this outcome is that public and private insurance plans have been slow to provide robust coverage for nonpharmacologic treatments despite the clinical evidence for these important, safe, and effective modalities. For specialties that are covered by insurance, such as physical therapy, the copayment is frequently higher than for opioid medications, and the allowed number of treatment sessions is restricted. For many treatments, such as acupuncture and massage therapy, few or no insurance plans cover the costs. Specifically, Medicaid coverage for most of these modalities is much more limited and only available in a few US states. Consequently, the health inequities associated with pain medication prescribing may be more pronounced regarding access to nonpharmacologic pain management.

It is important to consider a precision medicine approach to pain management. Such an approach identifies and delivers the right combination of treatments to the right patient at the right time to maximize benefits, minimize adverse effects and adverse events, and align with patient

treatment goals and preferences. However, a precision medicine approach to pain management is difficult because of limited available data on the complexity and interactions of these factors at the individual level. Identifying the best way to tailor treatment options and delivery to the individual is a new area of investigation. Innovations in clinical research, including pragmatic and adaptive clinical trials; stepwise treatments; responder analyses; and machine learning approaches to predictive modeling of the interaction of biopsychosocial factors in response to various treatments are poised to revolutionize the field. Until we collectively prioritize pain management to include comprehensive multimodal, person-centered treatments, the problem of chronic pain will continue to grow.

ARTICLE INFORMATION

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