MANAGING DENTAL PAIN WITH ALTERNATIVES TO OPIOIDS

EVIDENCE & CONSIDERATIONS FOR NON-OPIOID ANALGESIC PRESCRIBING

Center for Evidence-based Policy
Oregon Health & Science University
3030 SW Moody, Suite 250
Portland, OR 97201
Phone: 503.494.2182
Fax: 503.494.3807
centerforevidencebasedpolicy.org

CENTER FOR EVIDENCE-BASED POLICY

Almost 89 Americans die each day from prescription opioid overdoses[1]

Up to 12% of patients develop opioid use disorder after being prescribed opioids[2]

Adolescents prescribed opioids are 33% more likely to misuse opioids later in life[3]

The majority of opioids prescribed to adolescents for surgical dental extractions are not used[4]

Nearly 80% of heroin users started by misusing prescription opioids[5]

Prescription opioid misuse costs the U.S. $78.5 billion each year[6]

PRESCRIPTION OPIOIDS
A GROWING PUBLIC HEALTH CRISIS

Medical and dental providers have relied on opioids to help treat acute and chronic pain, but misuse and abuse of opioids have become significant public health issues. Patients exposed to opioids are at increased risk of developing physical tolerance, dependence, addiction, and death from overdose. Nationally, deaths from opioid overdose have been increasing across all regions and demographics, and accounted for 66% of all overdose deaths in 2016.[1,7] In particular, the rate of overdose deaths from prescription opioids increased by more than 11% in one year.[7]

Many factors contribute to the opioid epidemic, but medical and dental providers have a critical role in reducing unnecessary and potentially harmful exposure to opioids. Dental providers in particular are essential to mitigating exposure in adolescents—dentists are the most frequent prescribers of opioids for adolescents.[8] Adolescents prescribed opioids are 33% more likely to misuse opioids later in life.[3] Additionally, the majority of opioids prescribed to adolescents for surgical dental extractions are unused,[4] and leftover prescription opioids fuel non-medical use.[9]

In the absence of a Centers for Disease Control and Prevention (CDC) guideline for opioid prescribing for acute pain, the American Dental Association (ADA) recommends that dental providers follow relevant guidance in the CDC's chronic pain guideline.[10] Current clinical recommendations are to use non-opioid analgesics as first-line therapy to reduce unnecessary exposure to opioids and mitigate long-term harms. The ADA has a range of resources available for providers and patients related to opioid prescribing and use on its website.

NON-OPIOID ANALGESICS

In 2016, the CDC released guidelines[10] for clinicians prescribing opioids, suggesting a variety of tactics to reduce patient reliance on opioids, including the management of non-cancer pain with non-opioid pharmacological treatment. Non-opioid analgesics are a potential alternative to opioids for effectively managing pain and potentially cause fewer side effects with a lower risk of addiction.[11]

Non-opioid analgesics provide an alternative pain management strategy, and current evidence suggests comparable pain reduction to opioids.[11] Additionally, there is some evidence of improved physical function for patients using non-opioid analgesics compared to those using opioids.[11] Research specific to oral surgery has found that non-steroidal anti-inflammatory drugs (NSAIDs) were either similar or more effective at reducing patients' pain, and resulted in fewer adverse events.[12] This means that patients are able to manage pain with non-opioid medications similarly to opioids, with potentially better physical function.

Despite the advantages of non-opioid analgesics, they are not without risks. For example, the use of NSAIDs can damage the gastrointestinal tract, and acetaminophen presents risk of toxicity and liver damage.[14] It is critical that providers evaluate patients' medical history and weigh the analgesic benefits against the potential harms for any pain medications considered.

Current evidence and clinical guidelines from the ADA and CDC[10] recommend that dental providers consider use of non-opioid analgesics as a first-line pain management strategy. These guidelines also suggest that dental providers consider prescribing combinations of NSAIDs and acetaminophen for oral surgery pain, including use of medications immediately prior to surgery, unless contraindicated. Contraindications include, but are not limited to[13]:

- ***NSAIDS:*** Known drug hypersensitivity, history of gastrointestinal bleeding, aspirin-sensitivity asthma, severe renal disease
- ***Acetaminophen:*** Known drug hypersensitivity, severe liver disease related to high doses

Current guidelines[13] note that providers should adjust dosing for patients with renal impairment and those who consume more than two alcoholic drinks per day. Providers may also refer patients to the FDA's Taking Acetaminophen Safely video for additional information. In the event that an opioid prescription is warranted, the following guidance has been adopted from the CDC's 2016 Guideline for Prescribing Opioids for Chronic Pain[10] and the Bree Collaborative's[13] Dental Guideline on Prescribing Opioids for Acute Pain Management.

Non-Opioid Analgesics

Acetaminophen

Common NSAIDS

Aspirin
Celecoxib
Diclofenac*
Etodolac
Fenoprofen*
Ibuprofen
Indomethacin
Ketoprofen*
Ketorolac
Meclofenamate**
Mefenamic acid
Naproxen
Piroxicam

** Approved for adult use only*

*** Not approved for use in patients under 14 years old*

MANAGING SEVERE PAIN

The current evidence base supports clinical recommendations for use of non-opioid analgesics for first-line therapy to manage acute pain, including pain from surgical dental procedures. Patients experiencing severe pain that cannot be effectively treated with non-opioid medications and/or short-term opioids should be seen and evaluated for alternative treatment strategies. The ADA has resources and the CDC provides guidelines for managing chronic non-cancer pain.

CLINICAL CONSIDERATIONS

Based on current evidence and clinical guidelines,[10,13] dental providers should only consider opioids if the expected benefits for pain management and function outweigh the risks. If use of opioids is warranted, clinical guidelines[13] recommend discussing potential risks and treatment expectations with patients using plain-language and easily understood patient education tools—including considerations of culturally appropriate messages and patients' health literacy needs. Discussions may include the risk of combining opioids with other medications, illicit drugs, or alcohol, and what to do with unused medications. *The Bree Collaborative[13] asserts that opioids should not be prescribed if a patient or parent has stated they do not want an opioid prescription.* Clinical guidelines[10,13] recommend the following approach to opioid prescribing:

EVALUATE treatment goals and your patient for current or past use of opioids, benzodiazepines, sedative-hypnotics, and anxiolytics. This includes checking your state's prescription drug monitoring program, if applicable.

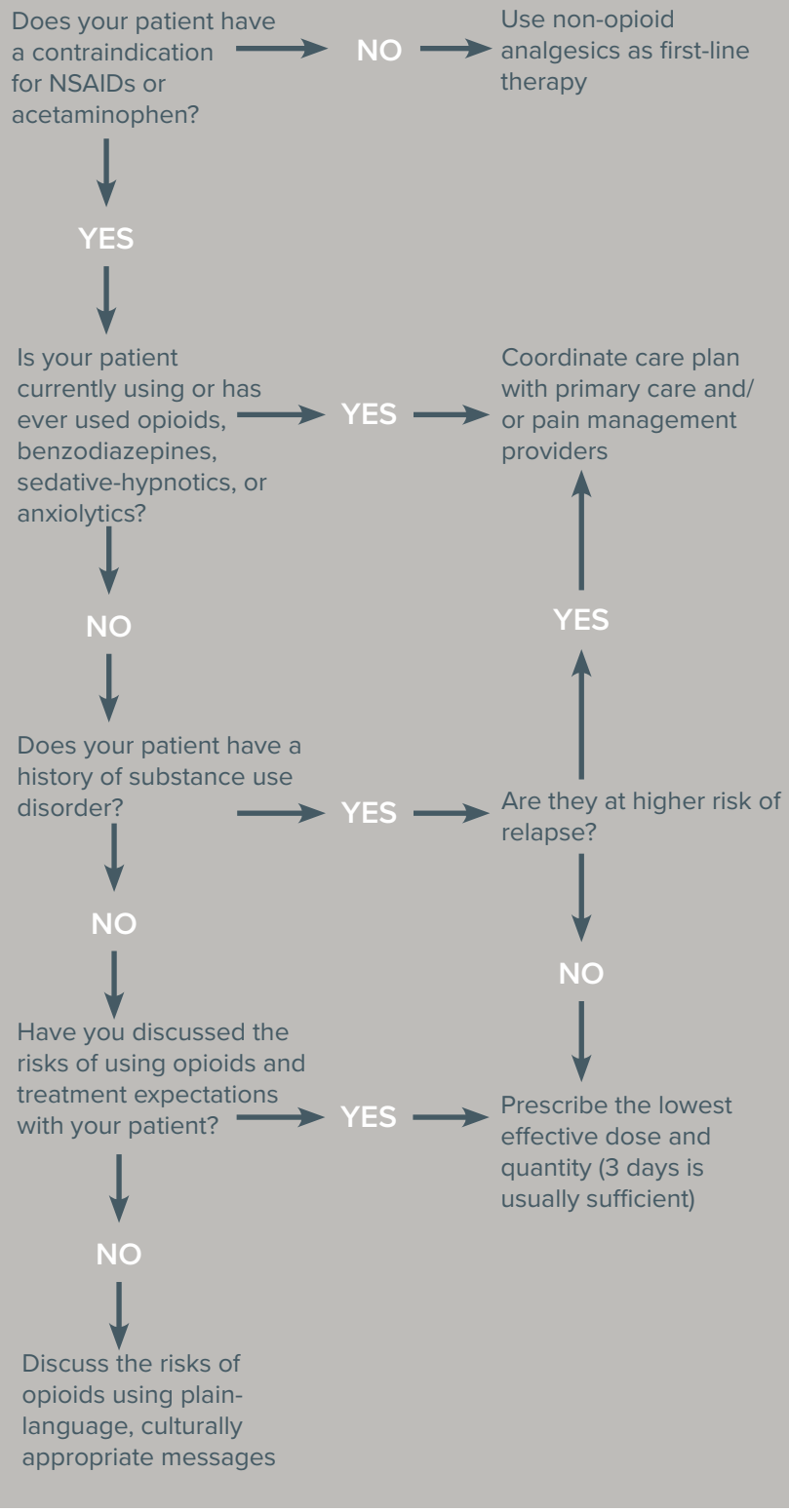
COORDINATE care with other providers if your patient has been or is currently prescribed opioids, benzodiazepines, sedative-hypnotics, or anxiolytics.

ASSESS your patient for a history of substance use disorder and risk of relapse.

COMMUNICATE treatment goals, expectations, and potential risks with patients. Consider providing written guidance or other patient education materials.

The decision process to the right is an example of how the CDC[10] and Bree Collaborative[13] clinical guidelines may inform opioid prescribing and is not a clinical recommendation.

SHOULD YOU PRESCRIBE OPIOIDS?*



** Based on guidelines from the CDC and Bree Collaborative*

If opioids are determined to be the most appropriate pain management strategy for a patient, the following considerations from the CDC[10] and Bree Collaborative[13] clinical guidelines may help guide prescribing during dental preoperative, intraoperative, and postoperative periods. As per current clinical recommendations,[10,13] dental providers should aim to prescribe opioids in the lowest effective dose and quantity necessary—recognizing that a 3-day supply is usually sufficient, and more than 7 days is almost never needed.[10,13] The following is a summary of clinical recommendations from the Bree Collaborative[13] and is not intended as a clinical guide. To access the full clinical recommendation, visit the Bree Collaborative website.

PREOPERATIVE

Prescribe the lowest effective dose of opioids and the lowest quantity necessary[13]

Do not exceed 12 opioid tablets for people younger than 25 years undergoing minor oral surgery[13]

Avoid prescribing codeine or tramadol to anyone under age 18, and do not prescribe to anyone under age 12[13]

Avoid multiple acetaminophen-containing preparations when prescribing opioids in combination with non-opiod analgesics (acetaminophen can be hepatoxic at more than 3 to 4 grams per day, or even less for patients with alcoholism or liver disease)[13]

Do not prescribe opioids in combination with benzodiazepines, sedative-hypnotics, or anxiolytics[13]

Coordinate care by checking your state's prescription drug monitoring database (if available), and conferring with your patient's primary care provider

INTRAOPERATIVE

Use preemptive analgesia such as long-acting anesthetic injections, unless contraindicated[13]

Consider a corticosteroid burst to reduce edema and pain after oral surgery; corticosteroid initiation has been studied most often in the intraoperative period, but has also been studied starting in the preoperative and postoperative periods[15,16]

POSTOPERATIVE

Prescribe the lowest effective dose of opioids and the lowest quantity necessary[13]

Prescribe opioids in combination with first-line therapy, avoiding multiple acetaminophen-containing preparations[13]

Do not exceed 12 opioid tablets for people younger than 25 years undergoing minor oral surgery[13]

Avoid prescribing codeine or tramadol to anyone under age 18, and do not prescribe to anyone under age 12[13]

Do not prescribe opioids in combination with benzodiazepines, sedative-hypnotics, or anxiolytics[13]

Recommend complementary pain management strategies such as ice on the affected area[13]

Discuss medication disposal options with patients for any unused prescriptions

REFERENCES

1. Centers for Disease Control and Prevention. Opioid data analysis. https://www.cdc.gov/drugoverdose/data/analysis.html. Updated February 9, 2017. Accessed June 26, 2018.

2. National Institute on Drug Abuse. Opioid overdose crisis. https://www.drugabuse.gov/drugs-abuse/opioids/opioid-overdose-crisis#six. Updated March 2018. Accessed June 12, 2018.

3. Miech R, Johnston L, O'Malley PM, Keyes KM, Heard K. Prescription opioids in adolescence and future opioid misuse. *Pediatrics*. 2015;136(5):e1169-e1177.

4. Voepel-Lewis T, Wagner D, Tait AR. Leftover prescription opioids after minor procedures: an unwitting source for accidental overdose in children. *JAMA Pediatrics*. 2015;169:497-498.

5. Muhuri PK, Gfroerer JC, Davies MC. Associations of nonmedical pain reliever use and initiation of heroin use in the United States. *CBHSQ Data Rev*. 2013. https://www.samhsa.gov/data/sites/default/files/DR006/DR006/nonmedical-pain-reliever-use-2013.htm. Accessed June 12, 2018.

6. Florence CS, Zhou C, Lou F, Xu L. The economic burden of prescription opioid overdose, abuse, and dependence in the United States, 2013. *Med Care*. 2016;54(10):901-906.

7. Seth P, Scholl L, Rudd RA, Bacon S. Overdose deaths involving opioids, cocaine, and psychostimulants—United States, 2015-2016. *MMWR*. 2018;67(12):349-358.

8. Volkow ND, McLellan TA, Cotto JH, Karithanom M, Weiss SR. Characteristics of opioid prescriptions in 2009. *JAMA*. 2011;305(13):1299-1301.

9. McCabe SE, West BT, Boyd CJ. Leftover prescription opioids and nonmedical use among high school seniors: a multi-cohort national study. *Journal of Adolescent Health*. 2013;52:480-485.

10. Dowell D, Haegerich TM, Chou R. CDC guideline for prescribing opioids for chronic pain-United States, 2016. *MMWR Recomm Rep*. 2016;65(No.RR-1):1-49.

11. Welsch P, Sommer C, Schiltenwolf M, & Hauser W. Opioids in chronic noncancer pain—are opioids superior to nonopioid analgesics? A systematic review and meta-analysis of efficacy, tolerability and safety in randomized head-to-head comparisons of opioids versus nonopioid analgesics of at least four week's duration. *Der Schmerz*. 2015;29(1),85-95.

12. Isiordia-Espinoza MA, de Jesus Pozos-Guillen A, Aragon-Martinez OH. Analgesic efficacy and safety of single-dose tramadol and non-steroidal anti-inflammatory drugs in operations on the third molars: a systematic review and meta-analysis. *Brit J Oral Max Surg*. 2014;52(9),775-783.

13. The Bree Collaborative. Dental guideline on prescribing opioids for acute pain management. http://www.breecollaborative.org/wp-content/uploads/2017-10-26-FINAL-Dental-Opioid-Recommendations_Web.pdf.

14. Warren-Stomberg M, Brattwall M, Jakobsson JG. Non-opioid analgesics for pain management following ambulatory surgery: a review. *Minerva Anestesiol*. 2013;79(9):1077-1087.

15. Dan AE, Thygesen TH, Pinholt EM. Corticosteroid administration in oral and orthognathic surgery: a systematic review of the literature and meta-analysis. *J Oral Maxillofac Surg*. 2010;68(9):2207-2220.

16. Ngeow WC, Lim D. Do corticosteroids still have a role in the management of third molar surgery? *Adv Ther*. 2016;33(7):1105-1139.

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