

Defining and Reducing the Risk of Persistent Postoperative Opioid Use

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It is now well understood by physicians and laypersons that opioid misuse has reached epidemic proportions in the United States. Indeed, in 2017, 4.2% of the population over 12 years of age misused opioids, and 47,600 people died from an opioid overdose.¹ Exposure to opioids occurs via both legitimate and illegitimate routes including prescriptions from health care providers, a subset of which are prescribed for perioperative pain management. Some patients, including those who are opioid naïve, will become chronic opioid users after receiving perioperative opioid analgesics and are at a high risk for numerous adverse events.² However, it is still not entirely apparent which patients are at increased risk for persistent postoperative opioid use and what strategies should be utilized perioperatively to decrease this risk.

In view of the ongoing opioid use epidemic in the United States, it is vital to better define at-risk populations and the patient characteristics that further increase the risk within those populations. While a number of publications have independently and heterogeneously attempted to do just that, to date, there is no rigorously reviewed body of work to determine a single, clinically appropriate definition of persistent postoperative opioid use and its associated risk factors. In their article, “American Society for Enhanced Recovery and Perioperative Quality Initiative Joint Consensus Statement on Persistent Postoperative Opioid Use: A Surgery Specific Systematic Review,” Kent et al³ describe the results of a systematic review designed to establish a standard definition of persistent postoperative opioid use, characterize its frequency, and determine patient attributes associated with its occurrence.

Studies assessing persistent opioid use after surgery have utilized a wide variety of definitions. One prospective study of patients undergoing total knee arthroscopy that found an incidence of 8.2% in previously opioid-naïve patients defined persistent opioid use as any intake at the studied postoperative time points.⁴ Others use more strict definitions such as having filled >120 days supply or ≥10 prescriptions in the 3 to 12 months after surgery. The incidence of persistent opioid use after total knee arthroscopy in one such retrospective study was found to be 1.2%.⁵ Given the varied definitions, it is not surprising that there may also be differences in reports of the patient characteristics that relate to the increased risk for persistent postoperative opioid use.

The article by Kent et al³ details the current literature and then presents the recommendations of a team of international experts from nursing, surgery, and anesthesiology. Their recommendations for the definition of persistent postoperative opioid use include the use of postoperative prescription data as a proxy for opioid consumption, using the period of 90–365 days after surgery to define the period of time that should be assessed for persistent postoperative opioid use, and designate the filling of ≥60 days of opioid from 90 to 365 days after surgery as defining persistent postoperative opioid use in the opioid-naïve patient and any increase in opioid use during the same time period as defining persistent postoperative opioid use in the non-opioid-naïve patient. The time period was chosen by the authors as it is a common interval used in the literature and acute pain should have resolved by this time. Using these definitions, the authors found the incidence of persistent postoperative opioid use in the literature to range from 0.6% to 25% in opioid-naïve patients and 35%–77% in non-opioid-naïve patients. Patient characteristics that were more consistently found to be associated with persistent postoperative opioid use include preoperative opioid use, mood disorders, and substance use disorders. Unfortunately, as noted by the authors, little data are available to show which systems factors are associated with persistent postoperative opioid use. Only a single study was located, which found that the duration of the initial opioid prescription was associated with persistent postoperative opioid use.⁶ Finally, the authors recognize the contribution to persistent postoperative opioid use risk from the health care system and suggest assessment of public health policies and legislation to decrease risks to patients.

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In a second article in this issue of *Anesthesia & Analgesia*, Wu et al⁷ discuss the evidence and provide recommendations for strategies for persistent postoperative opioid use prevention and the use of opioid-sparing analgesic strategies perioperatively.

In “American Society for Enhanced Recovery and Perioperative Quality Initiative Joint Consensus Statement on Opioid Minimization in Opioid-Naïve Patients,” the authors suggest that implementation of enhanced recovery programs could be a method for decreasing persistent postoperative opioid use. Reduction in perioperative opioid use is one of the key elements of enhanced recovery programs, which typically incorporate preoperative multimodal analgesia and intraoperative opioid-sparing or opioid-free anesthesia. However, while implementing an enhanced recovery program does create a heightened awareness of the adverse effects of opioid use and the effectiveness of multimodal nonopioid analgesics, it may not automatically result in a reduction in opioid prescriptions after the patient leaves the hospital. Attention to physician discharge prescribing practices, appropriate patient counseling, and multidisciplinary team collaborations to reduce opioid use could further enhance the short and long outcomes of enhanced recovery programs.

A recent study involving colorectal patients in an enhanced recovery program found that despite having a perioperative enhanced recovery program that minimized opioid use, 78% of the study population received an opioid prescription at the time of discharge compared to 85% before implementation of the program.⁸ Seventy-two percent of the patients in the enhanced recovery program group were opioid naïve preoperatively and had very low opioid consumption before discharge and may not have required an opioid prescription at discharge. Discharge medications are typically prescribed by the surgeons, and the investigators recognized that, while they had developed an enhanced recovery program in collaboration with their surgical colleagues, they had not addressed the traditional practice of including an opioid prescription at the time of discharge. In addition, the patient’s postoperative analgesia was managed by an acute pain service, and the surgeons may not have been aware of their low pain scores and minimal opioid requirements. Incorporating simple tools such as standardized order sets for discharge prescriptions will promote opioid minimization at discharge.

Prescribing discharge analgesics is a challenge for the surgeon, and there are wide variations in prescription patterns.⁹ Some surgeons may be accustomed to using discharge order sets that include a standard number of opioid tablets. Others prescribe opioids because of a concern that the patient may experience pain and desire to satisfy analgesic needs and avoid inconvenience to both surgeon and patient. However, overprescription results in a reservoir of unused opioids that could be diverted or used for non-medical purposes. A recent review found that 67%–92% of surgical patients reported having unused opioids in their possession.¹⁰ This is highly relevant because 84% of opioid users report obtaining their drug supply from a friend or relative who was prescribed opioids by their physician.¹¹

Preoperative optimization is an essential component of enhanced recovery programs, and the categories developed

in the guidelines will help providers to identify patients at risk for persistent postoperative opioid use and develop appropriate perioperative analgesic plans.¹² A simple preoperative questionnaire has been described that can be used to identify opioid-tolerant patients.¹³ There is evidence that tapering off opioids or transitioning to nonopioids preoperatively is associated with improved outcomes.¹⁴

Extensive preoperative patient education is integral to enhanced recovery programs which encourage patients to actively participate in their care. The authors have cited a study showing that a patient educational session describing the impact of opioids on recovery was associated with reduced opioid use after surgery.¹⁵ Patient education also reduces opioid hoarding and sharing.¹⁶ Only 1% of patients return their unused tablets, and education initiatives promote proper disposal which decreases the chance of diversion.¹⁷

The concepts of multimodal analgesia and anesthesia have been incorporated into all enhanced recovery programs, and significant reduction in opioid requirements is well documented. However, despite widespread evidence of the benefits of multimodal analgesia, it is only applied to 25%–50% of patients.¹⁸ Increased information sharing between the health care providers may result in a better rate of compliance with the use of nonopioid analgesics.

The multidisciplinary collaborations established in enhanced recovery programs could facilitate plans to minimize opioids and optimize analgesic regimens after discharge and include the continued involvement of pain specialists. However, not all practices will have access to specialists in pain medicine, and in those instances, liaison between hospital and community health care providers will be essential.¹⁹

Persistent postoperative opioid use contributes to the opioid use epidemic, and it is critical for anesthesiologists and surgeons to recognize our contribution to this ongoing public health issue. Understanding the true risk of persistent postoperative opioid use starts with a universal precise definition. In addition, it is important to appreciate patient and health care system factors that are associated with persistent postoperative opioid use. And finally, while the use of enhanced recovery programs may be 1 method to combat this issue, further research is critical to understand how perioperative care can decrease persistent postoperative opioid use and its associated health care issues. ■

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