ISSN: 1607-8322, e-ISSN: 2220-5799 Anaesthesia, Pain & Intensive Care
Vol 27(2); April 2023 DOI: 10.35975/apic.v27i2.2179

EDITORIAL VIEW PERIOPERATIVE MEDICINE

Farewell to opioids

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ABSTRACT

Up till recent times, various opioid products have been the main stay for pain management during surgeries and in the postoperative period. The clinicians had to adopt multiple ways to control the troublesome side effects associated with opioid use; especially the ileus and nausea / vomiting. Wide spread use of in-hospital and prescription use of opioids lead to an alarming rise in the addiction rates, ultimately termed as opioid epidemic. The clinicians had to think about other effective but safe methods to control pain. This invited editorial throws some light on this topic with an aim to involve clinicians in this debate.

Key words: Addiction; Opioids; Opioid epidemic; Pain

Citation: Zahid MA. Farewell to opioids (Editorial). Anaesth. pain intensive care 2023;27(1):150−153.

DOI: 10.35975/apic.v27i2.2179

Received: February 19, 2023; **Reviewed:** February 28, 2023; **Accepted:** February 28, 2023

The most powerful medications for treating severe pain have been the opioids. For a very long time, general anesthesia has been supplemented with opioids. Opioids, however, are linked to well-known adverse effects including addiction, sedation, ileus, disorientation, delirium, respiratory depression, increased postoperative pain, hyperalgesia, and chronic postoperative pain, as well as nausea and vomiting.[1] The recent opioid epidemic has raised more concerns about the usage of opioids during surgery.[2] Opioid misuse, overuse, addiction, and diversion have become significant public health concerns in the under-developed world and reached epidemic levels in the developed countries. Opioid abuse has increased six-fold over the past ten years, and it now accounts for 68% of all overdose-related fatalities. Reports state that one-fifth of all individuals given prescriptions for opioids were not familiar with the medication.[3] Additionally, 10% of patients who had never used opioids before, continued using them chronically a year after their cancer surgery with the intention of curing their condition.[4]

In opioid-free anesthesia (OFA), no intraoperative systemic, neuraxial, or intracavitary opioid is administered along with the anesthesia. Opioid-free analgesia likewise keeps away opioids in the perioperative period. Inhaled anesthetics and high-dose pentothal were used to induce anesthesia (hypnosis, forgetfulness, and immobility) before opioids were widely used in anesthesia practice in the late 1960s. The unfortunate side effect of this was hemodynamic instability and suppression, which necessitated extra help.

The development of potent opioid derivatives gave birth to the idea of ‘balanced anesthesia’, which gained popularity for not having an adverse impact on the cardiovascular system. Opioids are preferred for induction of anesthesia because they stabilize hemodynamics by inhibiting the sympathetic nervous system. Additionally, the opioids are amongst the powerful analgesics and thus became a crucial component of balanced anesthesia.[5,6]

Alpha-adrenergic agonist like clonidine and dexmedetomidine, local anesthetics administered intravenously (lidocaine), and magnesium are currently available medications that can help to balance the sympathetic nervous system.[7] Drugs like gabapentin, which modulates gamma-aminobutyric acid, can reduce the need for opioids.[8] When administered in a high enough dose alone, most of these will decrease the intraoperative opioid consumption; although it may cause prolonged drowsiness. However, if these are administered concurrently using a multimodal strategy, these might be able to reduce, if not completely oust,

opioid use and limit severe sedation. The benefit of this kind of multimodal strategy is that the need of postoperative opioids is significantly decreased. It is important to note that although many of these drugs are frequently combined successfully by general care and pain physicians, there is not yet enough evidence regarding the safety of each individual combination amongst different age groups or procedures.

From the anesthetic standpoint, it is possible to administer an opioid-free anesthetic (OFA) and also achieve adequate pain management. Jan Mulier and colleagues at Algemeen Ziekenhuis Sint-Jan Brugge-Oostende in Bruges, Belgium, discovered that patients undergoing bariatric surgery can fully omit opioids from their anesthetics with superior results, particularly if suffering from obstructive sleep apnea (OSA).[5,6] In a group study of 5000 patients at their facility, postoperative opioid use was drastically reduced during the initial 24 h; (21 ± 0.99 mg vs 6 ± 0.48 mg), had less problems and a shorter length of stay (LOS). OSA patients in this group did not have worse side effects from OFA than those who did not.

It has been showed by several reports that multimodal adjuncts can be used to produce the same results as that by usage of opioids.[9] So the point to ponder is why the anesthesia community, as a whole, has not readily adopted this strategy. We need to educate ourselves about OFA. Many practitioners have changed their way of thinking as a result of OFA. When OFA pathway was first introduced at Department of Anesthesiology, Duke University, there was a healthy amount of skepticism; nonetheless, it has since gained widespread acceptance for minor-to-moderate painful operations and dramatically decreased, if not completely eliminated, the need for opioids to control pain. Although the opioids may not be frequently administered intraoperatively, these are almost always offered postoperatively by the post-anesthesia care unit (PACU) staff. Of course, the patients must never be allowed to suffer from excruciating agony after surgery, we must aim to provide them with adequate pain management with a regimen that is effective and devoid of the serious side effects of the opioids.[2]

It has been repeatedly demonstrated that multimodal analgesia is superior to opioid-only treatment.[10] Should we go too far with this and just use medications like beta-adrenergic blocking agents to lessen the stress response to surgery while completely banning opioids? There is a lot of proof that cutting back on opioids and relieving postoperative pain is a noble goal. Another concern is whether it is necessary to entirely stop using opioids for all surgical procedures. Even if we are successful in developing an anesthetic regimen that is fully free of opioids, we would still need to combine it with an analgesic strategy that goes far beyond the operating room and hospital discharge.

The results of implementation of improved recovery and opioid-free anesthesia were compiled by Brandal et al. in 2017.[11] Though intraoperative opioids may be drastically decreased, opioids administered during the time of discharge remained the same. This shows that decreasing opioid use requires official effort, and that the culture and norms across a number of services need to be changed. Our intra-operative attempts to limit opioids will be ineffective if we can't alter how the recovery room, patient wards, and patients themselves view opioids and pain. According to what we currently understand, an insufficient use of fentanyl in the operating room will probably not significantly affect the lives of the patients. In contrast, prescribing excessive amounts of potent opioids and discharging patients while still on postoperative opioids may be what puts these patients at risk.[12]

We should implement smart opioid-free tactics and prevent patients from opioids as fast as feasible, rather than laboriously attempting to dispose of all of the opioids in the surgery room. Patients who can't wean off opioids straight away in a chronic pain management must be closely monitored to prevent them from progressing toward long-term reliance.[13]

Opioids are undoubtedly less than ideal analgesics because they cause tolerance and hyperalgesia, which make treatment progressively more challenging with time. Dose-dependent opioid-induced hyperalgesia, which is most effectively produced by remifentanil, is clinically relevant during excruciating operations or over an extended period of time in chronic pain patients. But it seems that simultaneous infusion of low-dose ketamine can easily decrease this hyperalgesia. Hyperalgesia is thus a serious issue, but it is also relatively manageable, at least in the early postoperative setting.[14,15]

While it makes sense and has been shown to be successful in many clinical environments to reduce the number of opioids being used, ‘pure’ OFA is currently not supported by enough evidence to be considered for a standard practice.[10] To accomplish OFA, numerous organizations and individuals have created their own ‘cocktails’ of medications and analgesic methods. Despite the fact that more healthcare professionals are using OFA, there is remarkably little information in the studies, a dearth of experimental studies, and a lack of prospectively collected big indication that transitioning from a modern multimodal analgesic treatment plan to OFA offers the patient any real benefits that would defend these frequently complex and costly treatments. We don't know enough about patients' postoperative outcomes or how they differ from individuals getting

opioids within the context of effective multimodal analgesia. Which operations and procedures can be successfully completed with OFA and which cannot be. To recommend that all patient for all procedures, from craniotomies to knee arthroscopies must go through with OFA sounds nearly ridiculous. It makes sense that opioid-sparing techniques would have a greater impact on patients whose surgeries are painful and lengthy.[16] However, the majority of OFA articles currently available do not present rigorous clinical evidence but rather the authors' personal opinions based on their own clinical experiences. The issue of implementation is still open. New analgesic methods have historically been adopted slowly in the medical field. Even simple multimodal analgesia has taken a long time to implement and is still not universally practiced.

Future insights

Opioids have been used more frequently in recent years for the perioperative period and for the treatment of a variety of chronic pain disorders. The negative effects of opioids are many, especially in older people. Additionally, recent research has demonstrated that using opioids before surgery results with inferior outcomes, a lengthier hospital stays, and higher healthcare expenses.[17] It is difficult to choose the optimum anesthesia protocol for a patient having cancer surgery, and the literature does not offer any clear-cut solutions. In cancer patients, however, a practical approach can be recommended taking into account the available possibilities and the viability in the various circumstances. When it's feasible, OFA tactics ought to be taken into account when making sure that pain is well managed. Opioid administration may be required, but it should be done as measure of a multimodal analgesic approach and in the smallest amounts possible. Comprehensive patient education programs and other non-pharmacological therapies should be taken into account when appropriate, especially in light of the advantages and negligible risks. To obtain a firm judgement regarding the use of opioid free anesthesia, additional well-designed research is required so that opioid usage can be waved off entirely and I believe it is not that far away to say farewell to opioids on strong scientific grounds completely.

CONCLUSION

More research is required to examine long-lasting consequences, incorporating the prevalence of chronic pain as well as factors like the overall number of opioids used following surgery, how long they were used, and return to function. We should take the lead in changing clinical practice in the present opioid crisis environment to decrease the usage of perioperative opioids, which may have effects beyond only length of stay or decreased nausea. When a surgeon or anesthesiologist needs hypnosis with amnesia, the novel kind of anesthesia can deliver it while still preserving adequate tissue perfusion and sympathetic steadiness to save organs.

We concur that reducing the use of opioids during the perioperative period is usually a good goal, but multimodal analgesia should be the main focus of our attention right now because it is backed by scientific research. Although OFA is now commonly used in many clinics, there is still limited proof that it provides patients with better or equal results than contemporary multimodal analgesic regimens, which may include targeted regional anesthesia. We would want to request to the medical experts who frequently use OFA to conduct the carefully monitored clinical problems that are necessary to fully understand the advantages and disadvantage of this unique approach.

Conflict of interest

None declared by the author.

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