ANESTHESIOLOGY NEWS

Pain Medicine

JULY 24, 2020

Careful Planning Can Reduce Post-Cesarean Oxycodone Use

Orlando, Fla.—The implementation of a two-step intervention to adopt opioid-sparing protocols resulted in a profound cultural change and radically decreased the number of women taking oxycodone after cesarean delivery, as well as their cumulative oxycodone dose.


Ruth Landau, MD

"It was obvious that the way the prescription of pain medicine was interpreted and deployed did not allow for the administration of nonopioids to women undergoing cesarean sections," said the study's senior author Ruth Landau, MD, the Virginia Apgar Professor of Anesthesiology at Columbia University Irving Medical Center, in New York City.

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"In other words, even though we thought prescriptions for pain medicines were written quite clearly on our order sets, nurses ultimately had the option to administer opioids even with low pain scores," Dr. Landau said. "So, the biggest paradigm shift was to say that patients need to take the nonopioid pain medicines regardless of their pain scores, with the intention that they might never need an opioid."

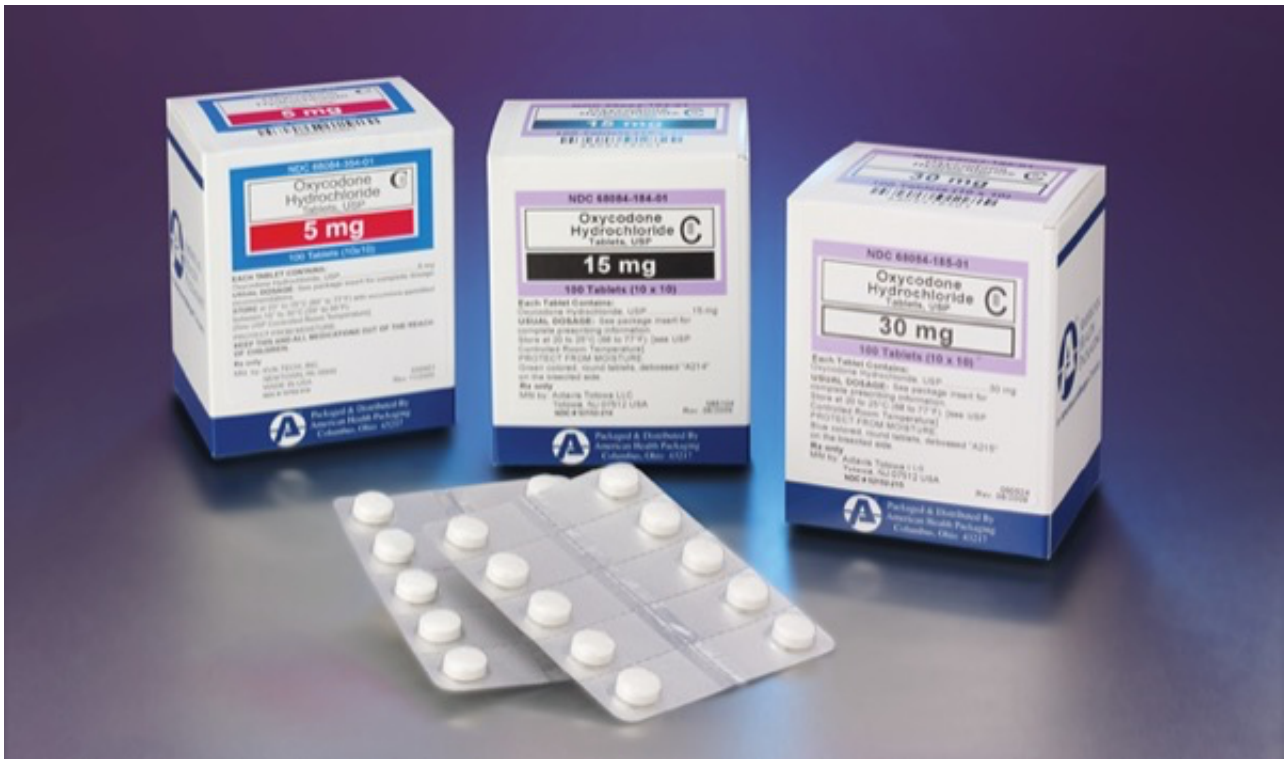
First Steps: Education and Order Sets

To help address the issue, Dr. Landau and her colleagues first introduced the concept of stepwise multimodal opioid-sparing analgesia through sustained provider education. These efforts were followed by changes in the institution's post-cesarean order sets.

The first step in the intervention took place between July and October 2017; all obstetric providers at the institution (nurses, nurse practitioners, residents and faculty) attended a one-hour lecture. The lecture focused on four primary themes:

- an overview of the opioid crisis;
- opioid overprescription;
- stepwise multimodal opioid-sparing analgesia to reduce in-hospital consumption; and
- a judicious approach to opioid prescribing at hospital discharge.

"It took me quite some time to explain this to everyone," Dr. Landau said in an interview with *Anesthesiology News*. "Initially I spent many sessions with everyone explaining the initiative and its goal."



This was followed, in November 2017, by an institution-wide change in computerized order sets for post-cesarean pain management. As part of this change, 600 mg of ibuprofen and 975 mg of acetaminophen were to be administered together every six hours, regardless of the patients' pain scores. The new order sets also dictated that oxycodone be administered only for moderate to severe pain.

"With mild pain, women would get more ibuprofen," said Ben Shatil, DO, a clinical fellow in obstetric anesthesiology at Columbia. "For moderate and severe pain, 5-mg oxycodone was given every three or four hours, depending on pain severity." The maximum daily

oxycodone dose was set at 30 mg. If nurses believed more was needed, the anesthesia team became involved.

“This is something that I feel very strongly about, because the administration of opioids to obstetric patients is very unique to North America,” Dr. Landau continued. “In the rest of the world, women primarily receive nonopioids after C-section—even if they’re not in pain—to prevent or reduce the likelihood of breakthrough pain that will require opioid medication.”

Another Step: Increasing Anesthesiology’s Oversight

One other major change included the involvement of the anesthesia department in the postoperative pain management protocol for all patients undergoing cesarean delivery, from the time they were admitted until the time they were discharged. Before the change, anesthesiologists were only involved in the first 16 hours postoperatively.

“This made more sense with respect to continuity of care to have us manage all the pain medications until patients went home,” said Dr. Landau, “and it really works much better than the fragmented approach that was in place previously.”

To determine the effect of the intervention, the investigators collected data for all cesarean deliveries between January and April 2017 (pre-protocol change) and between January and September 2018 (post-protocol change). The study’s primary outcome was the proportion of women not using any oxycodone during their hospital stay. Secondary outcomes included total cumulative oxycodone dose and the time to first oxycodone dose.

The researchers explained that 491 cesarean deliveries comprised the pre-protocol group, compared with 1,125 deliveries thereafter. There were several demographic and obstetric differences between the cohorts, most notably a reduction in primary and planned cesarean deliveries.

It was found that adherence to the new prescription regimen was 82.8%.

The proportion of women not using any oxycodone increased from 9.6% to 29.8%, and cumulative median oxycodone dose decreased from 60 to 25 mg. Finally, the time to first oxycodone dose increased by four hours.

As Dr. Landau explained, the investigators were pleased with the results of the initiative. “That’s because it’s working,” she said. “Ultimately, my goal in five years is to have women who take opioids in the hospital be the exception. It should really only be outliers, such as women with chronic pain issues, with chronic opioid use from before the C-section, or women who underwent a surgery that was more complicated than a simple cesarean delivery. But these should be the exceptions, not the other way around.”

Despite the success of the program, whose results were presented at the 2019 annual meeting of the American Society of Anesthesiologists (abstract A2105), the researchers recognize that their work is not finished, particularly with respect to how opioids are prescribed after discharge.

“For example, we found that 90% of the women who took no opioids after their C-section were still sent home with a prescription for opioids,” Dr. Landau said. “The average amount of opioid tablets prescribed in 2018 [20] was significantly reduced compared to 2017 [40-60], yet women who took no opioids in the hospital should have been sent home with zero. So, there’s still room for improvement.”

As Rachel Kacmar, MD, an associate professor of anesthesiology at the University of Colorado in Denver, noted, the opioid-sparing initiative by Dr. Landau and her colleagues helps demonstrate the beneficial effect of anesthesiologist involvement in postpartum pain protocols, both in terms of decreased opioid use and improved compliance. “Their initial results demonstrate nicely how an educational intervention can impact patient safety,” Dr. Kacmar said. “Similar continuing education of nursing staff, obstetric providers and patients may further improve outcomes,” she added.

—Michael Vlessides

Drs. Landau, Shatil and Kacmar reported no relevant financial disclosures.