Behavioral Interventions Alter Urologists’ Opioid Prescribing Practices

According to a new study, a behavioral intervention designed to decrease the amount of opioids that surgeons prescribe achieved that goal and did not adversely affect patient-reported outcomes.

The research, which focused on patients undergoing prostatectomy or nephrectomy at the University of Pittsburgh in Pittsburgh, Pennsylvania, appears in Cancer (doi:10.1002/cncr.33200).

As gatekeepers of postoperative opioid prescriptions, surgeons can play a sizable role in stemming the country’s opioid crisis. However, investigators note that changing physician behavior can be challenging, and how well behavioral science methods work in moving surgeons toward prescribing fewer opioids has been unclear. “This study is the first of its kind to demonstrate a dramatic decrease in opioid prescribing after major surgery, after a behavioral intervention,” wrote the study authors, led by Bruce L. Jacobs, MD, MPH, an assistant professor of urology at the University of Pittsburgh School of Medicine. “We observed a significant decrease in opioid prescribing throughout the department for both prostatectomies and nephrectomies.”

Study Details

The study examined the extent to which medical education, individual-level feedback, and peer comparison feedback might reduce the postdischarge prescribing of opioids to patients after prostatectomy or nephrectomy. Approximately 382 patients who underwent prostatectomy and 306 patients who underwent nephrectomy were included in the study. The procedures were performed between November 2018 and July 2019 by any of 13 urologists from the university’s academic department with either open or minimally invasive procedures.

The study consisted of 3 phases. During pre-intervention, which occurred over a 4-month period before the intervention, investigators collected the baseline opioid prescribing data. The second phase, a 6-month period, covered the behavioral intervention. The third, or washout phase, covered the 3 months of post-intervention data collection.

The primary outcome that the researchers investigated was the quantity of opioids prescribed in OMEs after patients were discharged. “We converted the number of opioid pills prescribed into OMEs by using the morphine conversion factor provided by the Centers for Medicare and Medicaid Services, which accounts for variation in opioid concentrations in pills,” they wrote.

Of the 382 prostatectomies, 120 were in the pre-intervention phase, 178 were in the intervention phase, and 84 were in the washout phase.

KEY POINTS

• The opioid prescribing patterns of 13 urologists changed after they participated in a multipronged behavioral intervention.
• The median number of oral morphine equivalents (OMEs) prescribed at hospital discharge decreased from 195 to 19 for prostatectomies and from 200 to 0 for nephrectomies.
• The study’s authors are not advocating for the total elimination of opioid prescribing but note that most patients who undergo these 2 procedures will not need opioids after discharge.
Of the 306 patients who received a nephrectomy, 92 were in the pre-intervention phase, 142 were in the intervention phase, and 72 were in the washout phase.

The primary exposure was a multifactor behavioral intervention to decrease opioid prescribing. The intervention included 3 components:

- **Formal education**: Researchers gave a grand rounds presentation to the majority of urology residents and attending surgeons that covered risks of patients becoming chronic opioid users and possible alternative pain management choices.
- **Individual audit feedback**: A principal investigator sent text messages and emails to participating urologists based on individual results during the preceding month to serve as reinforcement.
- **Peer comparison performance feedback**: Monthly reports listed the quantity of opioids each urologist prescribed in comparison with the quantities prescribed by the other surgeons in the study were distributed to the department.

The researchers also assessed patients’ perceptions about their postoperative pain management as a secondary outcome with the International Pain Outcomes questionnaire, which was administered 2 weeks after surgery. The questionnaire addressed several aspects of postoperative pain management, including perceived pain control, activity level, and psychiatric and somatic symptoms scored on a scale ranging from 0 (no symptoms) to 10 (severe symptoms).

### Study Results

The researchers found that the median OMEs prescribed by surgeons decreased significantly between the pre-intervention and intervention phases and between the pre-intervention and washout phases for both prostatectomy patients (from 195 to 19; \( P = .01 \)) and nephrectomy patients (from 200 to 0; \( P = .01 \)).

They found no difference in the median OMEs prescribed between the intervention and washout phases for either procedure \((P > .05 \text{ for both})\), and this indicated the durability of changes in prescribing behavior.

By the conclusion of the study, the researchers found that the attending surgeons were prescribing 0 opioids for 40% of the prostatectomy surgeries and for 60% of the nephrectomy surgeries. Overall, by the end of the study time frame, the researchers reported that the median number of OMEs prescribed decreased from 195 to 19 for prostatectomies and from 200 to 0 for nephrectomies.

However, the study authors were quick to point out that they are not advocating for completely avoiding opioid prescriptions for all patients after discharge. “Some patients,” they wrote, “such as those with prior opioid use, may require opioids. However, the majority of patients will not need opioids after discharge.”

They added that they found it reassuring that patients who underwent prostatectomy and nephrectomy were discharged without opioids reported pain control similar to that of patients discharged with opioids.

They also reported that patients discharged with or without opioids reported similar pain management, activity levels, psychiatric symptoms—other than increased anxiety in patients who underwent prostatectomy and were discharged with opioids—and somatic symptoms. “This supports the notion that the majority of patients can have adequate pain control with a non-opioid pain regimen upon discharge.”

In an accompanying editorial in the same issue of Cancer (doi:10.1002/cncr.33199), 3 surgeons from the Department of Urology at the University of Wisconsin in Madison say that the study “provides one of the most effective single-institution examples of engaging surgeons in opioid stewardship after major surgery.”

Emily C. Serrell, MD, Caprice C. Greenberg, MD, MPH, FACS, and Tudor Borza, MD, MS, wrote that there are 2 key factors that make this study stand out. “[Researchers] underscore the degree to which surgical opioid prescribing is driven by surgeon behavior rather than patient need, and they demonstrate the effectiveness of non-opioid regimens for treating surgical pain, even after what are historically considered painful major surgeries.”

However, they added, “The success of this intervention was predicated on provider access to meaningful, granular prescribing data at an individual and department level. These types of data are largely absent at the state or national levels, and even when present, these data are often shown in aggregate across a surgeon’s panel of patients and represent many heterogeneous procedures; this makes interpretation and practice change difficult. This is a likely reason behind the disappointing effects of policy interventions and a barrier that will need to be addressed.”

The surgeons added that it is crucial for surgeons to admit to their responsibility in combating the opioid epidemic while promoting interventions “that are scalable across geographic areas and surgical specialties. This will require surgeon engagement locally, regionally, and nationally.”

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