

Retrospective analysis of postoperative opioid prescription after thyroidectomy before and after the passing of Florida House Bill 21

V. Claire James, Carol O. Dirain, Krishna S. Hanubal, Diana Wilke, Deepa Danan, Peter T. Dziegielewski, Natalie L. Silver
University of Florida, Gainesville, FL

BACKGROUND

Opioid misuse has led to an increase in opioid addiction and opioid-related mortality in the United States. It has now become a public health crisis. The Florida House Bill 21 was implemented on July 1, 2018, which places restrictions on prescribing opioids in the state of Florida, particularly on the number of days of opioids prescribed. It also requires providers to check an online opioid database prior to prescribing. The objective of this study was to evaluate opioid prescribing patterns of otolaryngologists at our institution after thyroid surgery and to evaluate any changes before and after the implementation of Florida House Bill 21 (HB21).

METHODS

- Retrospective study of patients who underwent thyroidectomy at a single academic center by four surgeons between January 1, 2018 and December 31, 2018
- The study period included patients who underwent surgery in the six months before and six months after the passing of HB21
- Patients who underwent thyroid lobectomy, partial thyroidectomy, total thyroidectomy, or thyroidectomy with central neck dissection for any diagnosis were included
- Patients who underwent lateral neck dissections or sternotomies for substernal thyroid extension were excluded
- Information obtained using the Electronic Health Record included patient age, patient sex, diagnosis, surgeon, procedure performed, final pathology, preoperative pain prescriptions, and postoperative pain prescription information. Additionally it was noted if the patient had any opioid prescription refills, phone calls to the clinic due to pain or Emergency Department (ED) visits due to uncontrolled pain in the 90 days after surgery
- Information regarding pain medications prescriptions and refills was also obtained from the Florida Prescription Drug Monitoring Program Database (PMDP) to account for any refills outside of our system
- Pooled T-test was used to compare means between groups before and after the implementation of HB21 (using p value <0.05) for the following data:

- Total days of opioids prescribed
- Opioid dose measured as morphine milliequivalents (MME) per day
- Any opioid refills (3 months)
- Postoperative phone calls related to uncontrolled pain

RESULTS

A total of 111 patients underwent thyroid surgery from January 1, 2018 to December 31, 2018 and met the study criteria. Of those patients, 55 underwent surgery prior to and 56 underwent surgery after the HB21 restrictions on opioid prescriptions. The most commonly prescribed opioid medication was oxycodone (55%) followed by hydrocodone-acetaminophen (22%) and oxycodone-acetaminophen (20%). Less commonly prescribed medications included tramadol (1%), acetaminophen-codeine (1%), or no opioid medication (2%). This remained similar between the two study groups. Prior to HB21, mean values for total tablets prescribed, MME per day, and total days prescribed were found to be 33 tablets, 35 MME per day, and 7.3 days. After HB21, the mean values were 18 tablets, 37 MME per day, and 3.1 days. We found a significant reduction in the total days prescribed ($p < 0.0001$) between the before and after groups, however there was not a significant difference in the MME per day prescribed ($p = 0.6224$). An outlier was identified in the before group with 30 days of opioids prescribed. Analysis was repeated with the outlier excluded and the difference remained significant ($p < 0.0001$). Four patients were prescribed refills of opioid medications within 90 days of surgery in the before group compared to 0 refills in the group after HB21. This was not determined to be significant ($P = 0.0522$). There were 3 patient phone calls related to postoperative pain in the before group compared to 0 in the after group. There was one patient who went to the ED with pain after surgery compared to zero in the after group.

Table 1. Comparison of opioid prescription data, patient refills and patient phone calls related to pain before and after the passage of opioid restrictions (Florida House Bill 21). HB21, Florida House Bill 21, MME, morphine milliequivalents.

	Before HB21	After HB21	P-value
MME per day, mean	35.23	37.11	0.6224
Total days prescribed, mean	7.32	3.07	<0.001
Total days prescribed, mean (outlier excluded)	6.91	3.07	<0.001
Refills, mean	0.11	0	0.0522
Phone calls related to pain, mean	0.07	0	0.0970

CONCLUSIONS

We found that after the implementation of opioid restrictions for prescribers in Florida, otolaryngologists at our institutions prescribed fewer total days of opioid pain medications after thyroid surgery. However, the daily dosage (MME per day) was not significantly changed. This directly reflects the restrictions placed by the passage of House Bill 21. Furthermore, in the group who was prescribed few days of pain medications, there was no increase in number of refills, patient phone calls, or ED visits related to pain. This suggests that patients undergoing thyroid surgery at our institution required less pain medication than previously prescribed.

Our study was limited as it was a single center review with a relatively small sample size, and therefore it may not be appropriate for generalization to other institutions. Additionally, we did not account for possible demographic differences between the two populations such as use of preoperative pain medications or medical comorbidities. However, in the midst of the opioid crisis, we encourage other centers to routinely conduct similar internal reviews of opioid prescribing habits in order to identify areas for improvement with the goals of both safely and effectively treating postoperative pain.

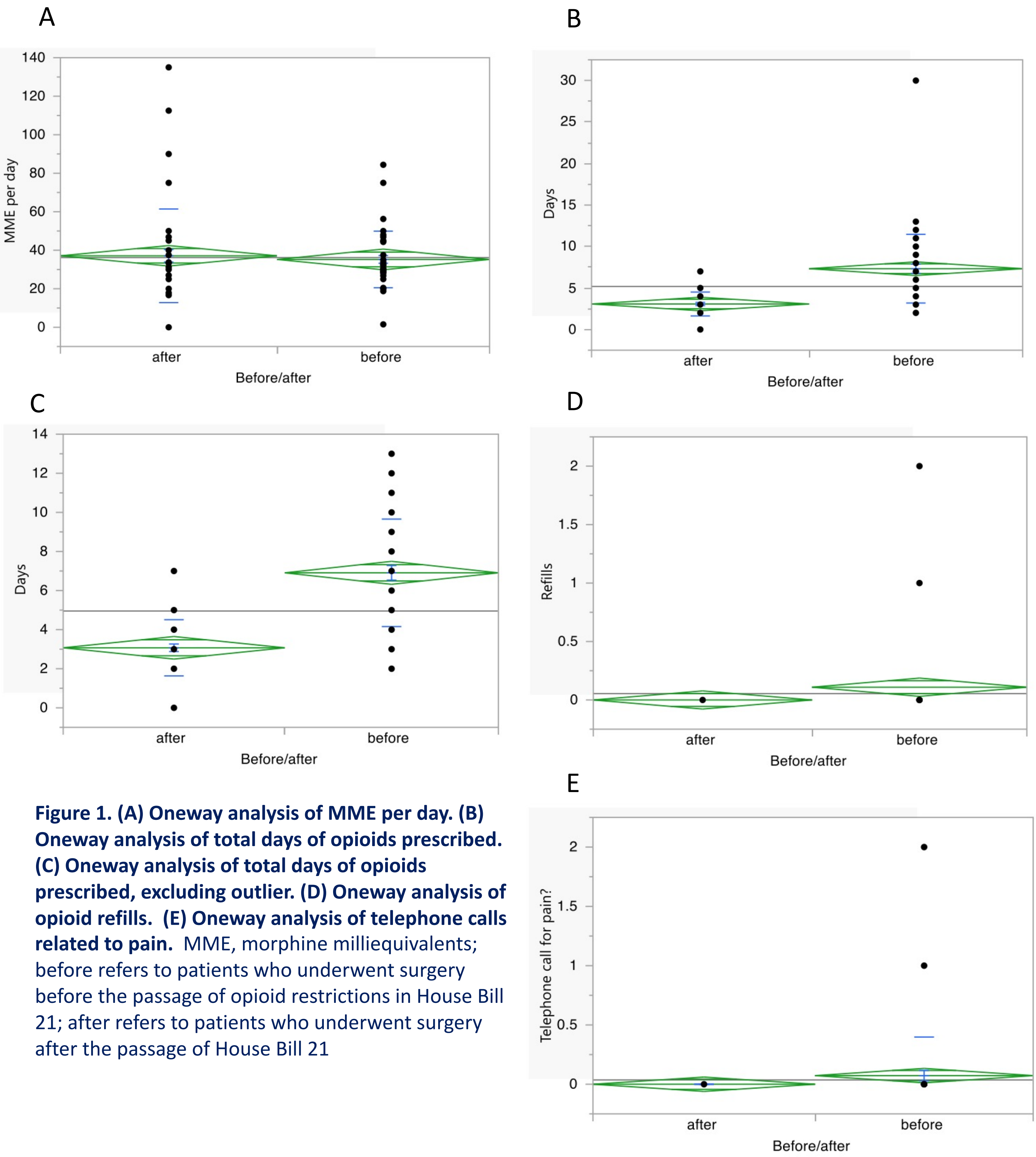


Figure 1. (A) Oneway analysis of MME per day. (B) Oneway analysis of total days of opioids prescribed. (C) Oneway analysis of total days of opioids prescribed, excluding outlier. (D) Oneway analysis of opioid refills. (E) Oneway analysis of telephone calls related to pain. MME, morphine milliequivalents; before refers to patients who underwent surgery before the passage of opioid restrictions in House Bill 21; after refers to patients who underwent surgery after the passage of House Bill 21