



Research Article

Non-Opioid Otolaryngology Medical Practice

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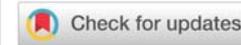
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Abstract

Introduction: Opioids have been used as pain medications in the United States since the late 1990s and have become increasingly common since then. Following the declaration of a public health emergency by the US Department of Health and Human Services (US-HHS), the author switched from opioid-based pain management to non-opioid-based pain management without any significant pain concerns from his postoperative patients. The primary purpose of this article was to demonstrate how much opioids in morphine milligram equivalents (MME) was prescribed per month by the author according to Michigan Prescription Monitoring Program (PMP) Prescriber Activity Reports before and after 2018 for management of pain in his otolaryngology postoperative surgical patients.

Methods: A retrospective research methodology was employed for this investigation. Michigan PMP Prescriber Reports were collected before and after 2018 and were included in this study.

Results: The author prescribed opioid pain medications before the HHS declaration. After the HHS declaration, the author prescribes acetaminophen and Nonsteroidal Anti-Inflammatory Drugs (NSAIDs). The number of opioid prescriptions from the author were remarkably low compared to similar prescribers and others within the author's specialty.

Prescription by MME showed no notable difference in MME values from 0-50 before and after the HHS declaration among the author and SP groups, but a notable drop of MME values from 51-90 among all groups after the HHS declaration.

Discussion: The author discourages the use of opioid pain medications for routine otolaryngology procedures. This study demonstrates the effective use of acetaminophen with or without NSAIDs (ibuprofen and diclofenac) to facilitate patient care absent of the well-established dangers of opioid use.

Introduction

Opioids have been used as pain medications in the United States since the late 1990s. Since then, opioid pain medication prescriptions increased exponentially after pharmaceutical companies informed medical practitioners that opioids were not addictive pain medications. There have been 42,000 deaths related to opioid overdoses in 2016 in the US, and 40% of the opioid overdose deaths involved prescription opioids [1]. Based on a significant number of opioid-related deaths, the US Department of Health and Human Services (HHS) declared a public health emergency and announced a five-point strategy to combat the opioid crisis on October 26, 2017 [2]. As an otolaryngologist, the author previously prescribed a remarkable amount of opioids for his patients' postoperative pain management. After the HHS declaration, the author switched from opioids to non-opioids without any notable reported pain concerns from his postoperative patients [3].

The primary purpose of this article was to demonstrate how much narcotic in Morphine Milligram Equivalents (MME) was prescribed per month by the author according to Michigan Prescription Monitoring Program (PMP) Prescriber Activity Reports (PAR) before and after 2018 for management of pain in his otolaryngology postoperative surgical patients. The author intends to actively discourage the use of opioid pain medications for routine otolaryngology procedures and to instead use acetaminophen with or without Nonsteroidal Anti-Inflammatory Drugs (NSAIDs) to improve patient care.

Material and methods

This retrospective review and analysis included reviewing the state of Michigan's Prescription Monitoring Programs (PMP) prescriber activity reports (PAR) spanning January 1st 2017 to December 31st 2019. The inclusion criteria was defined as all PMP reports spanning the aforementioned time frame. No PMP reports were excluded from the review and the study



was deemed to be Institutional Review Board (IRB) except by not including patient specific information. t-Test: Two-Sample Assuming Unequal Variances statistical method was used to analyze the data and notable findings were highlighted in table format in the following sections.

The author of this paper is referred to as the primary author. The term similar prescriber (SP) is defined as a prescriber that has the same role (e.g., physician, dentist, nurse practitioner) and the same healthcare specialty (e.g., internal medicine, pain management, oncology).

The author's pain medication regimens are as follows. Prior to 2018 and the HHS declaration, the author primarily prescribed one of the following pain regimens: Tylenol with Codeine #3 (acetaminophen 300 mg/codeine phosphate 30 mg) every six hours, Norco (hydrocodone and acetaminophen at 5.0/325, 7.5/325, or 10/325 mg) every six hours, or tramadol. After 2018 and the HHS declaration, the author shifted to prescribing either acetaminophen (500 mg) every six hours, for five to 10 days and diclofenac (50 mg) every 12 hours for five days, or ibuprofen (600 mg) three times daily for five days.

The primary endpoints of this investigation were two-fold: (1) to identify and quantify the monthly narcotic prescribing patterns in MME preceding and following the implementation of the HHS based on the PMP PAR. (2) Compare and contrast this to Similar Prescribers (SP) meeting the same criteria described in the aforementioned fashion.

Results

Table 1 depicts narcotic prescriptions before and after 2018 resulting in 16.45 prescriptions per month relative to 6.9 prescriptions per month by SP within the same specialty (p=3.7). Following the HHS declaration, the author's narcotic prescriptions were remarkably lower relative to the SP group (1.5; 10.16) (p=1.8).

When looking at prescriptions by MME (Table 2). No notable difference were found in MME values from 0-50 before and after the HHS declaration among the author and SP groups. However, a notable decrease, although, not statistically significant (p=1.79) in MME for values in the 51-90 range among all groups after the HHS declaration.

Opioid treatment duration is outlined in Table 3. Prior to 2018, the authors mean prescriptions were 6.29 compared to 55.54 prescriptions from SP's (p=2.49). Following the HHS declaration, the author's prescriptions for longer than seven days significantly dropped (90; 84.02); compared to SP's. Prescriptions for fewer than seven days went up for all two groups after the HHS declaration.

The author prescribed a notable amount of oxycodone and hydrocodone medications prior to the HHS declaration. The number of these prescriptions dropped notably after the HHS declaration, as shown in Table 4. At the same time, no notable change in opioid prescriptions in the SP group were seen even after the HHS declaration. There was no remarkable change in number of authors surgical procedures even after the HHS declaration, as illustrated in Figure 1.

Table 1: Comparison of opioid prescriptions written per month before and after 2018.

Comparator	Mean opioid prescriptions written per month		
	author	similar prescriber	P value
	mean	mean	
Before 2018	16.45	6.9	3.7
After 2018	1.5	10.16	1.8

Table 2: Comparison of prescription by MME percentage before and after 2018.

MME Range	Comparator	MME (%)		
		Author Mean	SP Mean	P value
MME 0-50	Before 2018	95.94	79.92	4.83
	After 2018	85.83	92.28	0.003
MME 51-90	Before 2018	4.05	19.44	6.66
	After 2018	14.16	7.3	1.79

Table 3: Comparison of opioid treatment duration before and after 2018.

Duration	Comparator	Opioid treatment duration (% patients)		
		Author Mean	SP mean	P value
< 7 days	Before 2018	6.29	55.54	2.49
	After 2018	90	84.02	0.07
7-28 days	Before 2018	48.63	37.74	2.16
	After 2018	10	15.01	0.13
29-90 days	Before 2018	34.28	5.67	4.14
	After 2018	0	0.85	1.89
> 90 days	Before 2018	10.78	1.04	1.75
	After 2018	0	0.12	9.78

Abbreviations: SP: Similar Prescriber

Table 4: Comparison of mean MME by product prescribed per month before and after 2018.

Product type	Comparator	Mean MME prescriptions per month		
		Author mean	SP mean	P value
Oxycodone products	Before 2018	1162.5	22	1.80
	After 2018	0	81	5.62
Hydrocodone products	Before 2018	9621	913	1.62
	After 2018	137	1200.5	2.12
Other opioids	Before 2018	657	105.5	2.59
	After 2018	71	202	3.7

Abbreviations: MME: Morphine Milligram Equivalents; SP: Similar Prescriber

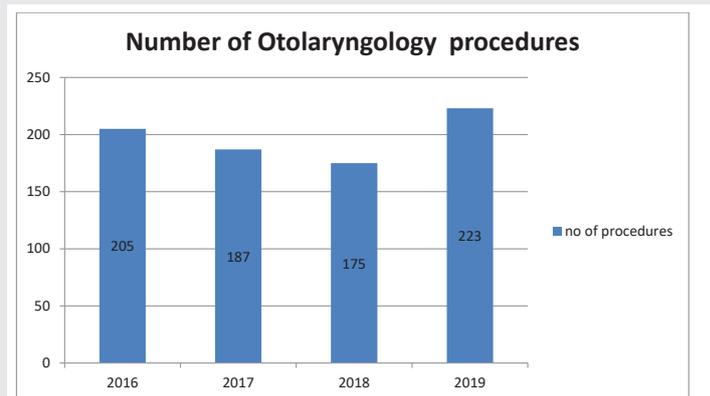


Figure 1: Number of Otolaryngology procedures.

Discussion

Management of perioperative pain is a medical conundrum and misuse or improper narcotic prescribing has been lead to prolonged rehabilitation, development of chronic pain, and reduced quality of life scales [4,5]. The effectiveness of



opium's ability to ameliorate pain has been used for decades. Opioids trigger a release of dopamine, stimulating the brain by occupying pain receptors. This leads to a cascade of receptor downregulation and an initial feeling of euphoria for patients prior to the amelioration of pain. The opioid epidemic is a serious health problem in the US at present. Overdoses caused more than 47,000 deaths in 2017, and 36% of those deaths involved prescription opioids [1]. On average, 130 Americans die every day from an opioid overdose [6]. In lieu of opioid addiction, Physicians around the world used different combinations of nonopioid medications to manage postoperative pain. Reduction of opioid requirements and better postoperative analgesia with less adverse effects were noticed when addition of NSAIDs and/or acetaminophen to opioid for postoperative pain management [7-9].

The aforementioned sections comprehensively demonstrated that the author previously wrote an abundance of opioids for his otolaryngology postoperative patients. Following the advent of the HHS declaration, the author switched from opioid pain medications to non-opioid pain medications, including acetaminophen, ibuprofen, and diclofenac for most routine otolaryngology surgical patients.

Combinations of acetaminophen and an NSAID have been thoroughly described in the literature and may offer superior analgesia relative to either drug alone in acute postoperative pain management without opioid use [10-12].

The author is a general otolaryngologist at an academic institute and performs routine general otolaryngology surgeries such as adenotonsillectomy, micro laryngeal surgery, ear tubes, septoplasty, bilateral inferior turbinate reduction, functional endoscopic sinus surgery, parotidectomy, submandibular gland excision, thyroidectomy, parathyroidectomy, tracheostomy, and neck mass excision including neck dissections.

The author did not notice any remarkable uncontrolled postoperative pain concerns from surgical patients after switching to non-opioid pain medications, which explain why his narcotic prescriptions were significantly lower in the PMP report after 2018. Additionally, the author performed almost the same number of surgeries mentioned above before and after 2018. At present, the author is prescribing opioid pain medications only to renal and head-neck malignancy patients.

After analysis, it was noted that the PMP reports indicate the SP group was still prescribing a large amount of opioid pain medications. It was also noted in a recently published article that opioids remained the primary modality for postoperative tonsillectomy pain management [13]. If ear-nose-throat surgeons keep prescribing narcotic pain medications, we are not helping society to curb the opioid epidemic. The main intention of this paper is to discourage the use of opioid pain medications for routine otolaryngology procedures and instead encourage the use of acetaminophen and NSAIDs to improve patient care.

Study limitations include the retrospective nature of this quality improvement and the small sample size of including

one author's Michigan. PMP reports before and after 2018 and his clinical experience. Additionally, Visual Acuity Scales and validated quality of life scales were not assessed. The author did not compare Acetaminophen and nonsteroidal anti-inflammatory drugs between the patient before or after 2018. Multi-center, randomized, prospective controlled trials on acetaminophen and NSAID pain medication use in these cases are needed.

Conclusion

The opioid epidemic is causing significant mortality in the US; most of this originates from prescription opioids. The author discourages the use of Opioid pain medications for routine otolaryngology procedures and herein demonstrates the effective use of acetaminophen with or without NSAIDs (ibuprofen and diclofenac) to improve patient care.

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