Impact of State Legislation on Opioid Prescribing after Lumbar Laminotomy

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Introduction

• Opioid analgesics are widely prescribed for post-operative pain but can lead to dependency or diversion of excess medication when overprescribed.

• Patients undergoing spine surgery may be at risk of developing dependency related to perioperative use.

• Several regulatory bodies have developed opioid-limiting legislation to curb prescriptions but the efficacy and potential side effects of these regulations are unclear.

• We investigated the impact of a 2017 Maine state law that limits opioid prescriptions on post-operative prescribing patterns following elective lumbar laminotomy.
Methods

• Patients who underwent a lumbar laminotomy between 2016 and 2018 were included.

• Perioperative prescription information was obtained for each patient and converted into morphine milligram equivalents (MME).

• Patients were stratified as either opioid-naïve or opioid-tolerant based on prior use and divided into pre-law (2016), early post-law (2017) and late post-law (2018) cohorts.

• Initial post-surgical prescription MME as well as 30-day and 90-day total MME were compared.
Reduction in Opioid Prescription Potency after Legislation

Morphine Milligram Equivalents

2016 (n=937) 2017 (n=1004) 2018 (n=986) 2016 (n=937) 2017 (n=1004) 2018 (n=986)

1st Script 30 Day Total
Impact of Opioid Tolerance on Prescription Potency before and after Legislation

Morphine Milligram Equivalents

2016 (n=178)  2017 (n=172)  2018 (n=172)  2016 (n=759)  2017 (n=851)  2018 (n=813)  2016 (n=178)  2017 (n=172)  2018 (n=172)  2016 (n=758)  2017 (n=851)  2018 (n=813)

Opioid Tolerant  Opioid Naive  Opioid Tolerant  Opioid Naive

1st Script  30 Day Total
Opioid Orders are Uneffected by Legislation

![Graph showing the number of medication orders by year and opioid tolerance status. The y-axis represents the number of medication orders, ranging from 0 to 3. The x-axis categorizes the data by year and opioid tolerance status. The graph indicates that the number of medication orders remains relatively consistent across years and opioid tolerance statuses.]
Overall Satisfaction with Laminotomy Outcome

1: Surgery met my expectations
2: I did not improve as much as I had hoped but I would undergo the same operation for the same results
3: Surgery helped but I would not undergo the same operation for the same results
4: I am the same or worse compared to before surgery
Discussion

• Opioid prescriptions following elective lumbar laminotomies performed by a group practice in Maine markedly decreased in potency following enactment of opioid-limiting legislation in 2017.

• Prescription potency decreased most significantly among opioid-naïve patients but also fell for long-term opioid users.

• The number of prescription orders for each patient was unaffected.

• The proportion of patients dissatisfied with their surgery outcome neither increased or decreased with reduced opioid analgesics.
• Growing awareness of the role of prescription analgesics in the opioid epidemic urge systemic shifts in prescribing patterns.

• The data indicate that opioid-limiting legislation enacted at a statewide level has the potential to reduce the quantity of these potent analgesics dispersed into the community after elective spine surgery without compromising patient satisfaction.

• These results may be generalizable to other surgical pain protocols.