Reducing Postoperative Opioids After Reduction Mammaplasty With the Implementation of an Electronic Medical Record Discharge Order Set

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Background

The opioid epidemic is a growing major public health concern in the United States and along with the increase in deaths from opioid overdoses. New persistent opioid use was found to be common after surgery (1), with breast plastic surgery procedures identified as having the greatest odds for persistent opioid use in the plastic surgery literature (2). We aimed to reduce the amount of postoperative opioids prescribed after reduction mammaplasty by implementing standardized prescribing guidelines into our electronic medical record system (EMR).

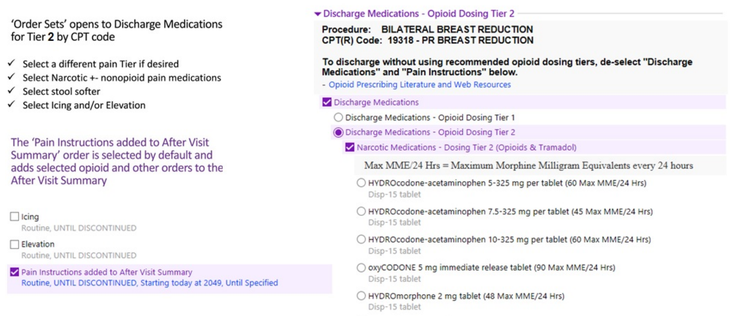
Research Objectives

1. To develop standardized dosages, duration, and frequencies of pain medications postoperatively
2. To incorporate the guidelines for postoperative opioid prescription into the EMR as a discharge order set
3. To evaluate whether the EMR discharge order set for postoperative opioid prescription reduces the amount of opioids prescribed and consumed after reduction mammaplasty as a pilot study

Methods

This study is a retrospective chart review examining patterns of postoperative opioid prescriptions after reduction mammaplasty before and after implementation of standardized guidelines for postoperative opioid prescriptions into our EMR. All plastic surgery procedures were grouped into 4 different pain tiers with tier 4 being the most painful. Literature and expert consensus were used to create recommended dosages, durations, and frequencies of opioid medication for each pain tier, and these guidelines were associated with Current Procedural Terminology (CPT) codes in the EMR. Using reduction mammaplasty as a pilot cohort of patients to study, all patients who underwent reduction mammaplasty were identified using the CPT code 19318, beginning 12 months before to 15 months after implementation of the order set. The primary outcome was Morphine Milligram Equivalents (MME) prescribed before and after implementation of the order set. A segmented regression analysis was performed using a linear mixed effects model, adjusting for potential confounders (3).

Figure 1. Electronic Discharge Order Set



Example of the electronic discharge order set implemented into the EMR in order to standardize postoperative opioid prescriptions following reduction mammplasty

Figure 2. Morphine Milligram Equivalents Prescribed After Reduction Mammaplasty

Segmented regression analysis demonstrating a 30% decrease in the amount of opioid prescribed for reduction mammaplasty after the order set was implemented which was stable over the course of 15 months

Results

278 patients who underwent reduction mammaplasty were identified: there were 92 patients before and 186 patients after implementation of the order set. The mean age at time of surgery was 39.3 ± 14.2 years and 89.2% patients were female. 85.3% patients did not have opioid use prior to surgery. After the implementation of guidelines for postoperative opioid prescribing into the EMR, there was a 30% decrease in amount of opioid prescribed for reduction mammaplasty after the order set was implemented ($e^{\beta:}$ 0.70, 95% CI: (0.54,0.89), p-value=0.0060), and this decrease was stable over the course of 15 months.

Conclusions

Standardizing the prescription of postoperative opioids using a discharge order set integrated into the EMR is an effective way to reduce the amount of opioids prescribed after surgery. In this pilot study, the amount of opioids prescribed after reduction mammaplasty was reduced by one third post-intervention, which demonstrates that this order set may be a promising tool to help reduce over-prescription and persistent opioid use after plastic surgery procedures.

References

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