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Analysis of Opioid Prescription Patterns and Postoperative Opioid Use in Opioid-Naïve Patients Undergoing Elective Lumbar Spine Surgery

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Title: Analysis of Opioid Prescription Patterns and Postoperative Opioid Use in Opioid-Naïve Patients Undergoing Elective Lumbar Spine Surgery

Background: Post-operative opioid prescribing patterns after elective spine surgery is a growing topic of concern, as over-prescribing can lead to potential medication dependence, while under-prescribing can lead to inadequate pain management.

Objective: The primary objective was to develop prescribing guidelines based upon the amount of opioids used in the first 2 weeks after lumbar spine surgery by 80% of patients.

Methods: Utilizing a prospective study design, opioid-naïve patients undergoing elective lumbar spine surgery at our institution were identified each week and preoperatively consented for study participation. Opioid naivete was defined as lack of opioid use at least 1 month prior to the scheduled surgical procedure. At 2 weeks postoperatively, enrolled patients completed a telephone survey questionnaire, which assessed remaining opioid prescription pill count, need for medication refill, and subjective patient satisfaction with opioid dosing. Subsequently, patient charts were retrospectively reviewed for patient demographic and medical co-morbidity data. Univariate two group comparisons were performed using t-tests for continuous variables, and using chi-square, or Fisher's tests if cell counts are <5 for categorical variables. We then looked at the distribution of MMEs in each cohort in order to determine the opioid needs of 80% of the patient population.

Results: A total of 53 opioid-naïve spine surgery patients were included for analysis, of which 23 underwent fusion surgery and 30 underwent non-fusion surgery. Baseline demographics and co-morbidities did not significantly vary between groups. For the fusion group, analysis revealed that an MME of 90 would meet the opioid requirements for 80% of patients. In this group, 60% of fusion patients were under-prescribed opioids, while 27% of patients were over-prescribed. For the non-fusion group, an MME of 45 was determined to meet the opioid requirements of 80% of patients. In this group, 61% of non-fusion patients were overprescribed opioids, while 22% were under prescribed.

Conclusions: Amongst opioid-naïve patients who underwent elective lumbar spine surgery, patients in the lumbar fusion group were generally under-prescribed postoperative opioids, while patients in the non-fusion groups were over-prescribed. This discrepancy suggests that spine

surgeons must account for the procedure type (i.e., fusion vs non-fusion) when prescribing opiates postoperatively in opioid-naïve patients, given patients undergoing lumbar fusion may require a larger MME than non-fusion patients.

Keywords: opioid-naïve; lumbar spine surgery; fusion; postoperative opioid use; MME