



52305-Bernstein

52305: Intra-Operative Methadone Decreases Post-Operative Pain and Opioid Use in DIEP Flap Patients: A New ERAS Protocol

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Background: Data has shown patients undergoing surgery can achieve better analgesia post-operatively with just one dose of methadone (long acting μ -opioid) than with multiple doses of a short acting opioid, however this has never been evaluated in the plastic surgery literature. This purpose of this study is to evaluate the effectiveness of a methadone-based Enhanced Recovery After Surgery (ERAS) pathway following DIEP flap breast reconstruction.

METHODS: This is a prospective study of a patients undergoing DIEP flap breast reconstruction at a single center from April 2021-January 2022, compared to historical controls immediately prior to institution of the ERAS protocol. The ERAS protocol included a single dose of intraoperative methadone and specific management guidelines, such as patient education and fluid management. Logistic regression analysis was performed to compare post-operative findings between the ERAS and non-ERAS groups. It was also used to compute associations between patient characteristics and postoperative opioid use within the ERAS group.

RESULTS: 83 women who underwent DIEP flap breast reconstruction were identified, 54 patients in the ERAS and 29 in the non-ERAS cohort. The two cohorts had comparable characteristics ($p > 0.05$). The ERAS cohort had significant reduction in opioid usage with the morphine milligram equivalents (MME) used during the first 12 hours being 11.18 versus 27.28 ($p < 0.001$) in the ERAS versus the non-ERAS group, 38.69 vs 77.40 MME ($p < 0.001$) 24 hours following surgery, and 79.98 vs 146.7 MME ($p = 0.002$) in total during hospital admission. The ERAS cohort also had a significant reduction in their overall daily patient rated pain score ($P < 0.05$), and were significantly less likely to be tachycardic throughout admission. When looking at the post discharge pain medication usage in the ERAS cohort, more than 75% of patients did not require any narcotics at home. A predictive logistic regression model of opioid use was made within the ERAS group and demonstrated older patients were less likely to use narcotics while patients of higher body mass index were more likely to require narcotics ($p < 0.05$).

CONCLUSION: In conclusion, after instituting our ERAS pathway following DIEP flap breast reconstruction, post-operative opioid analgesic usage and pain was significantly reduced. We also used our data to demonstrate in this patient population increasing age is a negative predictor and increasing BMI is a positive predictor of opioid usage. Methadone is an important tool that has the potential to be used for patients undergoing plastic surgery procedures, both inpatient and ambulatory, to decrease post-operative pain, opioid use, and increase overall patient comfort and satisfaction.