The Advancement & Uptake of an Enhanced Recovery After Cardiac Surgery Protocol

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Abstract

Liberal opioid administration during surgery leads to increased intubation time, intensive care unit and hospital length of stay, opioid-related adverse events, and health care costs. Patients undergoing cardiac surgery with and without preoperative opioid exposure are at an increased risk for opioid use disorder postoperatively. An enhanced recovery after cardiac surgery protocol with opioid minimization strategies was implemented since 2015 at a Philadelphia teaching hospital, but the effect on patient outcomes has never been analyzed. This quality improvement project conducted a retrospective chart review to evaluate the uptake and advancement of the enhanced recovery after cardiac surgery protocol. Primary outcomes of interest included total opioid administration, time to extubation (TTE), and length of stay (LOS). Pain scores, postoperative complications and 30-day readmissions were investigated as secondary outcomes. The statistically significant results comparing outcomes from 2016 to 2019 with an ERACS protocol are consistent with results of current evidence demonstrating improvements in total opioid consumption (p <0.000), hospital LOS (p <0.000), TTE (p<0.000), and 30-days readmission rates (19.8% to 11.9% respectively). A logistic regression showed that increased intensive care unit LOS was a significant predictor (p=0.012) of 30-day readmission. The dissemination of our ERACS protocol to other institutions has the potential to substantially improve cardiac surgical outcomes in similar facilities.

Keywords: enhanced recovery after cardiac surgery, total opioid administration, time to extubation, length of stay