

POST-OPERATIVE OUTCOMES: IMPROVED PAIN SCORES, NORMAL RENAL FUNCTION WITHOUT SIGNIFICANT CHANGES TO MEAN ARTERIAL PRESSURE USING PRE-OPERATIVE MEDICATIONS AND INTRAOPERATIVE ENHANCED RECOVERY INTERVENTION PROTOCOLS FOR PANCREAS AND HEPATIC SURGERY – THE UNIVERSITY OF MISSOURI EXPERIENCE

Presenting Author: Jennifer Clark, CRNA, University of Missouri, Columbia, Missouri, Lead TIGER CRNA Coordinator, Dept. of Anesthesiology and Perioperative Medicine.

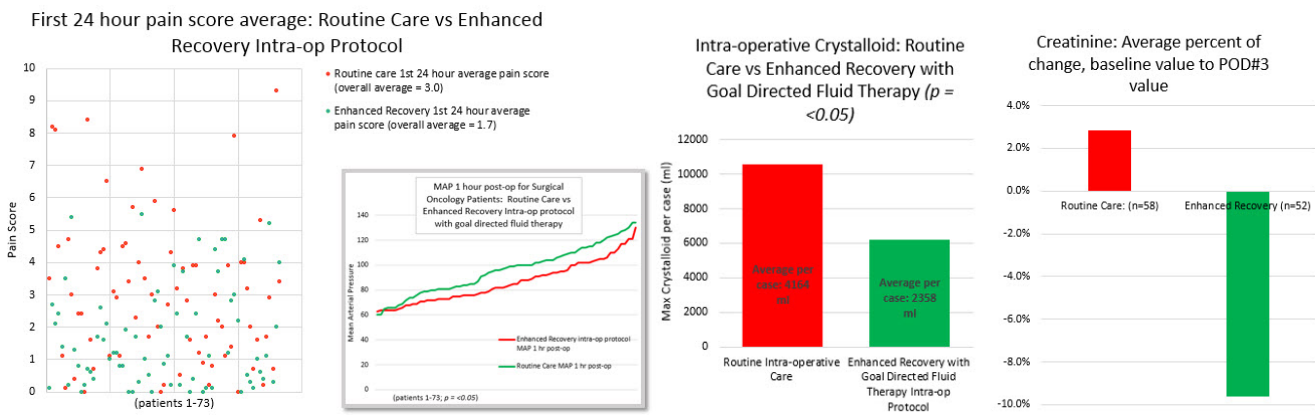
Co-Authors: Raul Castillo, MD, University of Missouri, Columbia, Missouri, Medical Director, Dept. of Anesthesiology and Perioperative Medicine; Katherine Smith, RN, University of Missouri, Columbia, Missouri, Nurse Clinician, Dept. of Anesthesiology and Perioperative Medicine

Background/Introduction: Enhanced Recovery After Surgery (“ERAS”) is a multimodal, multidisciplinary approach to the care of the surgical patient, involving a multidisciplinary team working together around the patient (surgeons, anesthesia providers, and staff from units caring for the patients). ERAS protocols have resulted in 30-50% shorter length of hospital stay, with similar reductions in complications, and reduced readmissions and costs. <sup>(1)</sup>

Methods: After performing a retrospective literature review, we formulated and co-authored our enhanced recovery (ER) protocol, the TIGER (Team InteGrated Enhanced Recovery) Protocol. The Anesthesia portion of this protocol included pre-op medications and intraoperative management changes, including fluid optimization using goal directed fluid therapy. It was used with surgical oncology patients as a quality improvement project for pancreas and hepatobiliary surgeries, targeting specifically pain scores and renal function on post-op day (POD) 3, while preserving mean arterial pressure immediately after surgery. After completing 73 cases utilizing the protocol, we compared our data with comparative data from a retrospective review of similar surgical procedures performed during the four year period immediately preceding implementation of the protocol.

Results: After review of data from protocol patients and retrospective review, the data were analyzed using t-tests and chi square tests with  $p < 0.05$  considered significant. We found that implementation of the intraoperative protocol significantly reduced post-operative pain scores for the first 24 hours after surgery, although we used fewer narcotics. Further, we found that despite using 43% less crystalloid during the ER cases, a higher percentage of the ER patients were at or below their baseline creatinine on POD#3 than their counterparts who received traditional care with general anesthetics. And finally, we found that the blood pressure values remained normotensive while utilizing these interventions.

Conclusion: With implementation of an intraoperative ER anesthetic protocol for our pancreatic and hepatobiliary surgical oncology patients, we found a significant reduction in post-operative pain on POD #1, improvement of creatinine levels on POD#3 as compared to pre-operative creatinine values, and post-operative mean arterial blood pressures that were normotensive.



References:

1. Olle Ljungqvist, MD, et al. Enhanced Recovery After Surgery. A Review. JAMA Surgery. March 2017. Volume 152, Number 3