Effect of intraoperative and post-operative opioids on persistent opioid use in the surgical patient

NCT#: Not Assigned

Study Protocol Title:

Effect of intraoperative and post-operative opioids on persistent opioid use in the surgical patient

List of Abbreviations:

OFA: Opioid Free Anesthesia

Principal Investigator, Research Team, and Study Site:

Principal investigator:	Name	Enrico Camporesi, MD TeamHealth Anesthesia, Tampa General Hospital Morsani College of Medicine, University of South Florida
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Research team and contact information:

Study Coordinator:	Name	Garrett Enten, BS
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Co-investigator:		Dr. Sanchez

Study site:

Tampa General Hospital (TGH)
1 Tampa General Circle
Tampa, Florida 33606

Research Synopsis:

Study Title	**Effect of intraoperative and post-operative opioids on persistent opioid use in the surgical patient**
Study Population	Patients admitted for Laparoscopic Colectomy at TGH
Study Design	Randomized Controlled Trial
Sample Size	100
Study Duration	Total length of time: 30 months
Primary Objective	To report post-operative opioid use in a sample population at 3, 6, and 12 months respectively.

Background and Significance:

Much has been written about the correlation of opioid prescriptions and rates of opioid overdose. (1) Last year the CDC made recommendations which focused initially on primary care physicians and chronic pain. (2) Recent literature finds that 6-8% of postoperative patients have prolonged postoperative opioid prescription use. (3,4) There is no correlation with postoperative pain or extent of surgical procedure. (3) Prescription opioids remain the mainstay of postop pain management. Surgeons continue to overprescribe opioids, leading to the potential for continued use or diversion of the unused pills. (5) The roll of intraoperative use of opioids during opioid anesthesia has largely been ignored by those studying the opioid crisis. (6) Fentanyl remains the most commonly used intraoperative opioid, considered by most anesthesiologists to be an integral component. Evidence has been mounting that fentanyl results in acute tolerance and opioid induced hyperalgesia. (7) Our study looks at the effect of removing all intraoperative opioids on the rate of prolonged postoperative opioid prescription use.

Objective:

Primary Objective

- To compare post-operative opioid use in a verified sample population of patients who had Laparoscopic Colectomy at TGH

Study design:

Randomized Controlled Trial

Endpoints

Upon Consent

- Patient demographics (age, race, gender, BMI)
- Hx depression
- Hx anxiety
- Hx PTSD
- Hx smoking

- Hx substance abuse
- Brief Pain Inventory (BPI)
- Screener and Opioid Assessment for Patients with Pain (SOAPP-R 24)

Post-op

- Pain Scores in the PACU(10cm on visual analogue scale)
- Nausea Scores in the PACU (0-4 PONV scale)
- Pain scores Floor Stay 24hr
- Opioid Use in Morphine Equivalents

Follow up for 12 months

- Length of Stay
- Post-surgical opioid prescription use
- BPI
- Patient Satisfaction

Methodology:

Overview:

The study population will be composed of 100 patients total, 50 opioid-free anesthesia laparoscopic colectomy patients and 50 opioid anesthesia laparoscopic colectomy patients at Tampa General Hospital. After consent is obtained patients will be electronically randomized using REDCap in a 1:1 ratio and assigned to a opioid anesthesia or opioid free anesthesia group. Patients will also consent to be asked survey questions preoperatively and be followed for 12 months postoperatively at specific intervals to evaluate pain, satisfaction, and opioid prescription use. This will be done through a data mining platform and service known as REDCap. REDCap is partnered with USF to allow for subject management, data collection and the distribution of surveys via mobile phone. All data collected by REDCap is stored on a HIPPA compliant server. Patients will receive automated push notifications to their mobile phones to fill out surveys regarding their pill usage, pain, and satisfaction for a year or until cessation of opioid use is confirmed. Confirmation of opioid cessation will be performed on a case by case basis by the principal investigator, Dr. Camporesi. In addition to the surveys performed, nausea and pain scores will be collected prospectively from observation in the PACU

Patient name and MRN will be utilized to access medical records for patient medical history and demographical data. Persistent prescription opioid use will be determined using these records and REDCap surveys. Collected data will be stored on a REDCap HIPPA compliant server. The HIPPA compliant server is stored in a secure access restricted location on USF campus and maintained by Dr. Anthony Green, Ph.D, a USF appointed sysadmin of the REDCap server. Data can only be accessed by staff participating in the research study. No identifying information about the participants will be disclosed. Medical record numbers and patient names will be necessary to access medical records. After all the data are collected patient identifiers e.g. patient name, medical record number, date of birth etc. will be deleted. The de-identified data will be analyzed to represent outcomes before and after surgery using SPSS 17.0.

Inclusion Criteria

- Patients admitted to TGH for laparoscopic colectomy under Dr. Sanchez's care
- Adults aged 18 and older

Exclusion Criteria

- Patients who are pregnant
- Patients that are not registered within Epic
- Patients without smart phone capabilities
- Patients younger than 18 years
- Patients who cannot speak or read English

Consent Process

All patients that are scheduled to have laparoscopic colectomy at Tampa General Hospital (TGH) will be evaluated for study eligibility preoperatively during their visit with the anesthesiologist. The pre-operative assessment will take place 3-7 days prior to the scheduled surgery. Patients who qualify for the study and give informed consent will be entered into the study during their pre-operative visit. All study discussions will take place in a private exam room. All subjects will be given the opportunity to ask questions. If the investigator feels that the subject understands the research parameters and the subject is willing to sign the consent form, the patient will be enrolled in the study. On the day of the surgical procedure the subject will be re-evaluated for willingness to participate. Any additional questions will be answered prior to surgery.

Screening & Baseline Visit

Patients who have signed consent and meet the study criteria will be given the Brief Pain Inventory (BPI) and Screener and Opioid Assessment for Patients with Pain (SOAPP-R 24) surveys to determine base line pain, opioid use, and self-reported susceptibility to addiction.

Table 2 Study Groups

Study Group	**ANESTHESIA TYPE**
OFA	Opioid free Anesthesia (n = 50)
OA	Opioid Anesthesia (n = 50)

Preoperative Management

The preoperative course will comply with TGH's standard of care practices with the addition of baseline surveys upon consent.

Intraoperative Management

(OA):

The intraoperative course will follow our standard of care practices. Doses/concentration of medications/agents used for the anesthetic management of the subjects enrolled in this trial may be adjusted when necessary to provide optimal subject care. Anesthesia will be induced with rocuronium, propofol, intravenous opioids, and other medication(s)/agent(s) at a concentration range/dose(s) based on the clinical need of the subject.

Depth of anesthesia will be measured with BIS-monitoring of all patients and a standard approaching 50% suppression will be maintained throughout the main duration of surgery. Reversal agent will be administered at a post-tetanic count of 1 or 2 (PTC 1,2 defined as deep block).

Anesthesia will be maintained with intravenous opioids, propofol and/or medication(s)/agent(s), including inhalation anesthetic agents, at a concentration range/dose(s) based on the clinical need of the subject.

Tracheal extubation will be performed at the end of anesthesia after administration of reversal agent. After extubation, the investigator will determine when the subject is OR discharge ready (subject is extubated, wound dressing is in place, and vital signs are stable).

(OFA):

The intraoperative course will follow our standard of care practices for OFA. Doses/concentration of medications/agents used for the anesthetic management of the subjects enrolled in this trial may be adjusted when necessary to provide optimal subject care. Acetaminophen 1g will be given prior to induction. Anesthesia will be induced with rocuronium 1mg, propofol 3-6 mg/kg, and succinylcholine 1.5 mg/kg

Depth of anesthesia will be measured with BIS-monitoring of all patients and a standard approaching 50% suppression will be maintained throughout the main duration of surgery. Reversal agent will be administered at a post-tetanic count of 1 or 2 (PTC 1,2 defined as deep block).

Anesthesia will be maintained with Sevoflurane, Magnesium, Lidocaine, Ketamine, Decadron, Ondansetron, and Ketorolac at a concentration range/dose(s) based on the clinical need of the subject.

Tracheal extubation will be performed at the end of anesthesia after administration of reversal agent. After extubation, the investigator will determine when the subject is OR discharge ready (subject is extubated, wound dressing is in place, and vital signs are stable).

Postoperative Management

Upon arrival in the PACU, the (sub)investigator, using the visual analog scale, will clinically assess post-operative pain. Assessment of patient pain levels involve a series of VAS testing postoperatively (upon arrival and every 15 minutes postoperatively until discharge from the PACU) using a 10 cm line. Patients that complain of pain intensity >5 cm/10 cm, will be given a standardized rescue intravenous dilaudid regimen, IV dilaudid at 0.4mg up to a max dose of 2mg prn q 2 hours or until a VAS of <5 is obtained. Post-operative PACU narcotic consumption will be recorded and quantified.

Post-operative nausea and vomiting (PONV) will be assessed using a PONV rating scale every 15 minutes until PACU discharge. PONV will be rated as 0, no nausea; 1, mild nausea ≤ 15 minutes; 2, nausea ≥ 5 minutes and 3, vomiting. PONV will be treated with ondanestron 4 mg intravenously and, if persistent, with metoclopramide 10 mg intravenously.

All patients will be monitored with continuous pulse-oximetry. All post-operative complications will be captured.

Follow-up

Upon discharge, patients will be provided with weekly surveys via the REDCap application on their mobile device. A weekly push notification will be sent at a patient designated time, at which point patients will fill out a BPI survey, satisfaction of care survey, and pill count. Patients will be sent weekly survey for 12 months after discharge or until cessation of opioid use is confirmed by the PI.

Sample Size and Justification:

Based off of conservative recruitment expectations and Dr. Sanchez's current through rate of laparoscopic colectomy patients, we expect to evaluate a total of approximately 100 patients who received laparoscopic colectomy to determine opioid use over 12 months post-op.

Statistical Analysis Plan:

We will look for opioid prescription use trends with-in subsets of the sample: patient demographics, medical history, and self-reported addiction by performing Chi-square analysis and Fisher's exact tests where applicable. For significant variables, univariate and multivariate logistic regression analysis will be performed to look for any independent variables that are linked to continued opioid use at 3, 6, 9, and 12 months.

Privacy:

The collection of personal patient information will be limited to the amount necessary to achieve the aims of the research, so that no unneeded sensitive information is being collected.

Only study personnel will collect data. Hard copy documents will be retained for the duration of the study until data entry. All hard copy documents will be kept in a locked cabinet in the research coordinator's office. All electronic data will be recorded in a password protected Excel spreadsheet and data analysis will be recorded in a password protected Excel spreadsheet and data analysis will be conducted using de-identified data in SPSS statistical software. All hard copy documents will be shredded within five years after completion of the study.

Confidentiality precautions:

Confidentiality is an extension of the concept of privacy; it refers to the ways identifiable information will be stored and shared. Identifiable information can be printed information or electronic information. The precautions that we will use to maintain the confidentiality of identifiable information are:

- Paper-based records (data sheets) will be kept in a secure location and only be accessible to personnel involved in the study.
- Computer-based files will only be made available to personnel involved in the study through the use of access privileges and passwords.
- Whenever feasible, identifiers will be removed from study-related information.

Risk/Benefit:

Risk to participants:

The risks to patients with this project involve the use of PHI for the initial access to study-related data and collection of de-identified health information. Anytime such data is accessed and stored by handlers outside the domain of clinical routine, the risk of breached data security is increased; however, all means necessary have been inputted to secure the information. Medical record numbers and patient names will be used to access the patient's medical record.

Both Anesthesia protocols are TGH standard of care for OA and OFA, standard level of risk for this procedure under each respective anesthesia regimen apply.

Benefits to participants:

Benefits for subject participation in this study include the retention of Dr. Enrico Camporesi for pain consultation for 12 months post-operatively or until cessation of opioid use as confirmed by him.

Patients will be incentivized to fill out every survey with $50 compensation upon completion of the final survey if every prior survey has also been filled

Data Safety Monitoring:

Monitoring throughout the study will be conducted by Enrico Camporesi, MD; and Garrett Enten, BS. Any action resulting in a temporary or permanent suspension of the study will be reported to the IRB.

Conflict of Interest:

There are no conflicts of interest.

Publication and Presentation Plans:

We anticipate writing a manuscript to discuss our results and submitting to a peer-reviewed journal. We also plan to present our findings at any relevant meetings or conferences.

Study Personnel and Roles:

Enrico Camporesi, MD	PI	Responsible for all study related issues
Dr. Sanchez	Sub-I	Surgeon Data interpretation/analysis Consent Interview
Dr. Rasheid	Sub-I	Surgeon, Data interpretation/analysis Consent Interview
Garrett Enten, BS	Research Coordinator	Data management and analysis Addresses IRB issues Communicates with IRB Consent Interview

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