MSQC Colectomy Care Pathway

PreOp

Patient Education/Prehabilitation
-Surgery goal/expectation setting
-Pain management
-Tobacco cessation
-Nutrition assessment and counseling
-Functional status and exercise guidance
-Incentive spirometer education
-Mental health assessment

Preoperative Planning
-MIS approach when expertise available and appropriate
-Anticipate discharge needs/care coordination

CRC: Rectal cancer
-Pretreatment Staging Testing: MRI or endorectal ultasound
-Neoadjuvant Therapy when indicated

Ostomy Team Consult
-Stoma marking and education

Labs
-BMP
-CBC
-INR
-PTT
-Type and Screen
-HbA1c
-CEA (after CRC diagnosis)

Glycemic Control
-**HbA1c** screening for diabetic patient or patient with history of diabetes (including gestational diabetes)
-**Blood glucose** screening for all non-diabetic high risk patients: age ≥ 45 and/or BMI ≥ 30

Preop Referral if:
-**HbA1c 6.5%-8%:** Consult PCP or endocrinology for glycemic control
-**HbA1c ≥ 8% or glucose > 250 mg/dL**: Consult PCP or endocrinology for glycemic control AND consider postponing surgery date

Immediate PreOp

Shower
-Shower with soap or antiseptic agent on at least the night before surgery
-Provide product and clear instruction

Carbohydrate Loading
-Carb loading in nondiabetic patients
Examples: white grape juice, clearfast, maltodextrin

Reduced Fasting
-Clear liquids up until 2 hours prior to surgery

Glycemic Control
-if age ≥ 45 and/or BMI ≥ 30 and blood glucose was not obtained within 90 days of surgery, obtain blood glucose in preop holding
-if preop blood glucose > 200 treatment is advised

Oral Antibiotics with Mechanical Bowel Prep
-Oral antibiotics with mechanical bowel prep
Example: Nulytely 420g solution; Neomycin 500mg tab; Metronidazole 500mg tab
-Zofran prn for nausea

Appropriate IV Prophylactic Antibiotics
-MSQC Recommendation:
Cefazolin 2g IV for patients <120kg
Cefazolin 3g IV for patients ≥120kg
AND
Metronidazole 500mg IV
-Administer 15 to 60 minutes before incision
-PCN allergy: Conduct thorough review of reported reaction to evaluate if alternative regimen necessary. Consider allergy testing to confirm.
-See ASHP guidelines in resources for other acceptable antibiotic regimens and beta-lactam alternatives

Alvimopan
-12mg PO every 12 hours while patient is in hospital. Max number of doses 15 tabs
-Start in preop and continue until return of bowel function
-Contraindicated in patients taking therapeutic opioid for >7 consecutive doses

Multimodal Analgesia
-Administer ≥2 non-opioid analgesia strategies
Examples:
-For open cases, thoracic epidural
-For laparoscopic cases, TAP block
-Acetaminophen
-Gabapentin
-Review pain management plan before anesthesia induction

Prevention of PONV
-Screen all patients for PONV risk
-Administer antiemetic regimen based risk assessment score
-Risk Assessment Example:
4 Primary Risk Factors: Female; Non-smoker; History or motion sickness; previous PONV; Expected administration of postoperative opioids
Score 1 for each applicable risk factor
0-1 risk factors: Ondansetron 4mg 15min prior to end of case
2 risk factors: Choose one or two agents listed below
3 risk factors: Choose one or two agents listed below
4 risk factors: Apply Scopolamine patch at least 2 hours before induction, Administer Dexamethasone 4-8mg IV after induction, Ondansetron 4mg IV at end of surgery

IntraOp

Alcohol-based Skin Preparation
-Use alcohol-based prep unless contraindicated

Glycemic Control
-DM: Check glucose every 1-2 hours
-NDM: Consider at discretion of preop glucose/HbA1c
-Goal <180 mg/dL
-Treat with subcutaneous rapid acting insulin or IV insulin infusion

Normothermia
-Maintain body temperature of 96.8°F (36°C)

Lung Protective Ventilation
-For patients with normal pulmonary function undergoing general anesthesia with endotracheal intubation, administer increased Fio2 during surgery and after extubation in the immediate postoperative period.
-To optimize tissue oxygen delivery, maintain perioperative normothermia and adequate volume replacement

Euvolemia
-Avoid excess fluid administration. Discuss minimal fluid strategy with anesthesia.
-ASCRS CPG:1.5-2mL/kg/hr. Hospital examples: 6mL/kg/hr. 5mL/kg/hr. 3mL/kg/hr with Max rate of 300mL/hr
-Use balanced chloride-restricted crystalloid solution
-In high-risk patients and those undergoing major surgery with significant intravascular loses, use goal-directed fluid therapy

Wound Protector and Clean Closure
-Wound protector
-Change of gloves and use of separate instrumentation for portions of operation involving open intestine and abdominal closure

Avoid Drains
-Avoid routine use of NG tubes or intra-abdominal drains

VTE Prophylaxis
Within 2 hours before surgery
Examples:
-Heparin 5000 units subcutaneous
-Lovenox
-Place SCD's

Redosing of Antibiotics
-Cefazolin: 4 hour interval
-Metronidazole: If operative time >8 hours consider redosing

Multimodal Analgesia
-Administer ≥2 non-opioid analgesia strategies
Examples:
-IV Lidocaine
-Wound infiltration with long-acting anesthetic at surgical site
-IV Ofirmev (acetaminophen) if not given preop
-TAP block if not done preop
-Spinal analgesia with local anesthetic
-Ketamine
-Ketorolac at end of case

PostOp

Multimodal Analgesia
-Follow Michigan OPEN opioid prescribing recommendations: Oxycodone 5mg 15 tablets
https://opioidprescribing.info/
-Administer ≥ 2 non-opioid analgesia strategies
Examples:
-Acetaminophen
-Gabapentin
-Ketorolac
-Ibuprofen
-IV Lidocaine

Early Ambulation
-Ambulation at least once within 24 hours of surgery

Early Alimentation
-Chewing gum 3-4 times per day
-Clear liquids immediately after surgery
- Advance to regular diet if tolerating within 24-48 hours

Glycemic Control
-Goal: <180 mg/dL
NDM patients with normoglycemia before or during surgery:
-Check glucose on morning of POD1 before meal to monitor for stress-induced hyperglycemia
NDM patients with elevated glucose before or during surgery:
-Check glucose for 24-48 hours until at or below target goal
-If elevated, IV insulin while NPO and basal-bolus insulin regimen once resuming oral nutrition. Consult endocrinology or medicine for diabetic management.
DM patients:
-Standard glucose monitoring
-IV insulin while NPO and basal-bolus insulin regimen once oral nutrition resumed. Consult endocrinology or medicine for diabetic management.

Incentive Spirometer
-Use 10x/hour while awake

Early Foley Removal
If not in place for specific indication then:
-Elective colon or upper rectal resection: d/c within 24 hours irrespective of thoracic epidural use
-For midrectal or lower rectal resections: d/c within 48 hours

Labs
-BMP
-CBC
-POD 1 only unless indicated

Alvimopan
-12mg BID until return of bowel function. Max number of doses 15 tabs

Minimize IV Fluids
-Minimize and discontinue fluids early as possible

VTE Prophylaxis
-Heparin 5000 units subcutaneous TID
-For cancer and IBD patients, Lovenox for 28 days
-SCDs while in bed

Patient Education
-Consult to Ostomy Team
-Consult to Dietitian
-Discharge planning
-Encourage clinic contact vs. ED presentation (example-offer wrist band with clinic phone number)
-Wound Care

Normothermia in PACU
-Maintain temperature >96.8°F (36°C) in PACU
-Utilize forced air warmer PRN

Discontinue Prophylactic IV Antibiotics
-Prophylaxis is typically not warranted past surgery end time.
-If continued, duration should be no more than 24 hours past surgery end time unless otherwise indicated.

Pathology Evaluation for CRC
-Evaluate ≥ 12 lymph nodes in pathology
-TME Grading (rectal cancer)

Post Discharge

Contact Patient within 2 business days
-Make postop phone call to patients within 2 days of discharge (72 hours if Friday case)
-Contact ostomy patients more frequent to monitor volume status

Clinic Visit within 2-4 weeks
-Clinic visit within 2-4 weeks of discharge
-More frequent visits for ostomy patients
-Utilize telemedicine for follow up visit

Cancer patients:
-Patients with positive lymph nodes should be seen by medicine oncology within 2-4 weeks of surgery for neoadjuvant therapy evaluation

Resources

-MSQC Colectomy Bundle. http://msqc.org/colectomy-bundle
-Clinical Practice Guidelines for Enhanced Recovery After Colon and Rectal Surgery From the American Society of Colon and Rectal Surgeons and Society of American Gastrointestinal and Endoscopic Surgeons (2017). https://www.fascrs.org/sites/default/files/downloads/publication/clinical_practice_guidelines_for_enhanced_recovery.3.pdf
-Enhanced Recovery after Colorectal Surgery (2018). https://www.uptodate.com/contents/enhanced-recovery-after-colorectal-surgery#H117219366
-Guidelines for perioperative care in elective colonic surgery: Enhanced Recovery After Surgery (ERAS®) Society recommendations (2018). https://doi.org/10.1007/s00268-018-4844-y
-SAGES: Reduce Preop Fasting. https://www.sages.org/enhanced-recovery/reduce-preoperative-fasting/
-ASHP Clinical Practice Guidelines for Antimicrobial Prophylaxis in Surgery (2013). https://www.ashp.org/-/media/assets/policy-guidelines/docs/therapeutic-guidelines/therapeutic-guidelines-antimicrobial-prophylaxis-surgery.ashx?la=en&hash=A15B4714417A51A03E5BDCAC150B94EAF899D49B
-Association Between Preoperative Hemoglobin A1c Levels, Postoperative Hyperglycemia, and Readmissions Following Gastrointestinal Surgery (2017). https://jamanetwork.com/journals/jamasurgery/fullarticle/2645761
-Centers for Disease Control and Prevention Guideline for the Prevention of Surgical Site Infection (2017). https://jamanetwork.com/journals/jamasurgery/fullarticle/2623725
-Michigan Opioid Prescribing and Engagement Network (2019). https://opioidprescribing.info/
-Perioperative temperature management (2018). https://www.uptodate.com/contents/perioperative-temperature-managemenxt
-Postoperative Nausea and Vomiting (2018). https://www.uptodate.com/contents/postoperative-nausea-and-vomiting?search=ponv20screening&source=search_result&selectedTitle=1~115&usage_type=default&display_rank=1#H440882333
-Preoperative Ostomy Education and Stoma Site Marking (2014). https://journals.lww.com/jwocnonline/Fulltext/2014/05000/Preoperative_Ostomy_Education_and_Stoma_Site.2.aspx

Rev: 3/16/2022