Preoperative Non-emergency Colon Resection Orders

**Allergies:** [ ] None known  [ ] Unable to obtain

**Consults:**  [ ] Anesthesia  [ ] Ostomy  [ ] Other:

**Admit to:**  [ ] Ward  [ ] Surgical Step Down Unit  [ ] ICU

**Diet**
- Patient to bring sugar free chewing gum to hospital
- Fasting as per protocol
  - 800 mL apple or cranberry juice evening before surgery
  - 400 mL apple or cranberry juice 2 hours before arrival to hospital
- Other:

**Bowel prep:**  [ ] No prep  [ ] Prep:

**Skin prep:** Chlorhexidine gluconate 2% wipes as required

**Investigations**
- Pre-op blood work and testing as per protocol (10-15)
- Other:

**VTE**
- Hold ASA ____ days pre-op
- Hold anticoagulants ____ days pre-op (see reverse for list)
- Hold direct oral anticoagulants ____ days pre-op
- Hold oral medication on day of surgery
- Hold warfarin ____ days pre-op. Consider bridging therapy

**Diabetes management**
- Continue medications as per usual home regimen
- Hold oral medication on day of surgery
- Hold bolus and correction (sliding scale) insulin (insulin regular, lispro, aspart) on day of surgery
- Reduce morning basal insulin by 50% (insulin NPH, glargine, detemir) on day of surgery
- Continue basal rate on insulin pump on day of surgery

**Mechanical bowel preparation**
- Causes dehydration and fluid and electrolyte abnormalities,
- Particularly in elderly patients, increasing morbidity and post-operative ileus.
- Fasting is required to reduce the risk of aspiration during a general anesthesia.
- The duration of preoperative fasting is two hours for liquids and six hours for solids. (13,15,25)

**Chewing gum**
- A useful intervention to shorten the time to first passage of flatus and feces as well as to reduce the time to tolerance of oral fluid. (11)

**Management of gastric residuals**
- Management is based on patient-specific risk assessment for thromboembolism and bleeding.
- Open-abdominal procedures are associated with a higher risk of VTE. ASA, anti-platelets, and warfarin interfere with platelet aggregation. Decisions regarding bridging therapy are based on thromboembolic risk. (2,5,9,14,18)

**Intensive preoperative patient information**
- Facilitates postoperative recovery and pain relief.
- A patient’s individualized Risk stratification is also important to make informed decisions.
- It is shown that this information reduces the patient’s anxiety and facilitates compliance of the program, including ostomy management and appropriate location for it. (7,13,25)

**Chewing gum**
- A useful intervention to shorten the time to first passage of flatus and feces as well as to reduce the time to tolerance of oral fluid. (11)

**Management of gastric residuals**
- Management is based on patient-specific risk assessment for thromboembolism and bleeding.
- Open-abdominal procedures are associated with a higher risk of VTE. ASA, anti-platelets, and warfarin interfere with platelet aggregation. Decisions regarding bridging therapy are based on thromboembolic risk. (2,5,9,14,18)

**Diabetes management**
- Continue medications as per usual home regimen
- Hold oral medication on day of surgery
- Hold bolus and correction (sliding scale) insulin (insulin regular, lispro, aspart) on day of surgery
- Reduce morning basal insulin by 50% (insulin NPH, glargine, detemir) on day of surgery
- Continue basal rate on insulin pump on day of surgery
**Day of Surgery Non-emergency Colon Resection Orders**

**Investigations on arrival to Day Surgery:**
- **INR**
- **Other:**

**Pain management**
- **acetaminophen** 1000 mg PO 30 to 60 minutes pre-op

**VTE**
- **heparin** 5000 units subcutaneous to be given in OR

**Diabetes management**
- **CBGM on arrival**
- **Hold oral medication**
- **Hold bolus and correction insulin (insulin regular, lispro, aspart)**
- **Reduce morning basal insulin by 50% (insulin NPH, glargine, detemir)**

**Antibiotic prophylaxis** (to be given in OR by anesthesia)
- **ceFAZolin** 2 g IV 30 to 60 minutes pre-op
- **metroNIDAZOLE** 500 mg IV 30 to 60 minutes pre-op
- **or**
- **If severe penicillin allergy (i.e., anaphylaxis):**
  - **tobramycin** 4.5 mg/kg IV 30 to 60 minute’s pre-op (round to nearest 20 mg)
  - **clindamycin** 900 mg IV 30 to 60 minutes pre-op

Infuse both tobramycin and clindamycin over 30 minutes.

**Physician signature:** ____________________________  **College ID:** ________  **Date:** ________  **Time:** ________

**Review by December 2019**

---

Acetaminophen is a safe and effective agent that helps deal with the biochemical pain process in combination with intraoperative pain management. The patient will have less postoperative pain, need fewer analgesics, require analgesics less frequently, and doesn’t interfere with bowel function. [27]

Heparin is intended to minimize the time the patient is not anti-coagulated, thereby minimizing the risk for perioperative thromboembolism. [32]

The stress of general anaesthesia and surgery predisposes patients to severe hyperglycemia by inducing insulin resistance. Adequate control of blood glucose concentration is established and maintained until oral feeding is resumed postoperative. Careful attention is done through close monitoring. [7,12,26]

Antibiotics are precisely timed so that effective tissue concentration is present at and after time of incision. It is used to decrease the microbial load of intraoperative contamination to a level that does not overwhelm the patient’s immune defense. This reduces the risk of postoperative surgical wound infection by as much as 75%. [21,22]

---

Postoperative Non-emergency Colon Resection Orders

Allergies: None known

Surgical procedure:

Consults: Dietitian, Physiotherapy, Occupational Therapy

Diet:
• Chew gum tid, start in PACU
• May have ice chips to clear fluids immediately post-op
• Post-op day 0: Regular diet as tolerated 4 to 6 hours post-op
• High calorie supplement 60 mL PO qid with medications

Activity:
• Post-op day 0: Sit at edge of bed dangling legs and start leg exercises
• Post-op day 1: Mobilize out of bed 1 to 2 times and sit in chair for meals
• Post-op day 2: Mobilize out of bed 2 to 3 times and sit in chair for meals
• Post-op day 3: Mobilize out of bed 3 or more times and sit in chair for meals

If patient unable to mobilize and safe transfer method not indicated, initiate priority one assessment with Social Work Physiotherapy Consults:

• Post-op day 0: Sit in chair for meals
• Post-op day 1: Sit in chair for meals
• Post-op day 2: Sit in chair for meals
• Post-op day 3: Sit in chair for meals

Respiratory:
• Incentive spirometry 5 to 10 times per hour while awake
• CPAP while asleep with continuous monitoring of oxygen saturations, for obstructive sleep apnea

Vital signs: Routine q h and PRN

Drains:
• Record output q h
• Discontinue drain as per surgeon's order

Urinary catheter:
• Monitor output q h
• Remove foley catheter:
  - Post-op day 1
  - Post-op day 2
• In and out catheterization if unable to void and bladder scan is greater than 500 mL
• Notify surgeon if persistent inability to void

Physician signature: College ID: Date: Time: 11-111-5257 (LC - RPD/COS - Appr. - 07/16) Review by December 2019

9. Mr. Shakeeb Khan, M. M., Mr. Marcel Gatt, M. F., Mr Alan Horgan, M. F., Mr. Iain Anderson, M. F., & Professor John MacFle, M. F. (2009). Guidelines for implementation of enhanced recovery protocols. PATIENT SAFETY IN SURGERY, para. 9.
Intravenous fluids are required until adequate oral fluid intake is achieved and/or while epidural catheters are in situ. The patient’s ability to get rid of accumulated sodium is greatly reduced postoperatively, balanced IV solutions are prescribed to avoid sodium overload, hyperchloremic acidosis, and delayed return of gut function. (19)

Intravenous fluids

- 0.9% sodium chloride: 75 mL/h, 100 mL/h, 125 mL/h
- Ringer’s lactate: 75 mL/h, 100 mL/h, 125 mL/h
- 5% dextrose/0.45% sodium chloride: 75 mL/h, 100 mL/h, 125 mL/h

Add ___ mEq KCl/L

Saline lock IV when drinking well

Acetaminophen is safe for acute pain, is an antipyretic, and doesn’t interfere with bowel function. (3,16,27)

Epidural analgesia significantly shortens the duration of postoperative ileus, pneumonia, improves pulmonary function, and increases arterial oxygenation. (3,16)

Based on patient-specific risk assessment, prophylaxis followed through postoperatively reduces risk of VTE by 60%. (1,10)

Managing postoperative nausea decreases patient discomfort, reduces risk of aspiration of gastric contents, and electrolyte imbalances. (29)

Antiemetics

- If no PCA or epidural:
  - ondansetron 4 mg IV/PO q8h PRN for nausea
  - dimenhydrinate 25 to 50 mg PO/IV/IM q4h PRN for nausea
  - metoclopramide 10 mg PO/IV q6h PRN for nausea
University of Northern British Columbia

Postoperative Non-emergency Colon Resection Orders

Sedative/hypnotic if no PCA or epidural:
- oxazepam 10 to 15 mg PO at bedtime PRN for sedation
- zopiclone 3.75 to 7.5 mg at bedtime PRN for sedation
- Other: _______________

Investigations: □ CBC, E7 on POD: _______________

Diabetes management

Patient's usual home regimen:

a. Capillary blood glucose in PACU then qid

b. Oral antidiabetic medications as per medication reconciliation form

c. Basal insulin (= long acting = insulin NPH, glargine or detemir)

Note:
- Order 50% of usual dose if NPO or significantly reduced diet.
- If oral anti-diabetic medications on hold and insulin naive, order insulin NPH 0.2 to 0.3 unit/kg/day divided bid (see reverse for guidance)

□ insulin NPH ____ units subcutaneous at breakfast or 0800 if NPO
□ insulin glargine ____ units subcutaneous at breakfast or 0800 if NPO

□ bedside or □ supper or □ 1800 if NPO

□ insulin lispro __ units subcutaneous at breakfast or 0800 if NPO

□ bedside or □ supper or □ 1800 if NPO

(If patient on insulin detemir, insulin 3070, Humalog Mix 25 or Novomix 30, refer to chart on reverse for conversion to insulin NPH)

Continue insulin pump per patient's usual basal rate, initiate bolus insulin when eating well (80% of caloric requirements)

d. Bolus insulin (= nutritional = insulin R, lispro, aspart)

(Only use if on insulin prior to admission. Do not order if NPO or significantly reduced diet.)

□ insulin R □ insulin lispro

breakfast: ____ units lunch: ____ units dinner: ____ units

*If on insulin aspart at home, use insulin lispro on admission

e. Correction insulin (sliding scale):

<table>
<thead>
<tr>
<th>Blood glucose</th>
<th>Low (home total daily insulin less than 40 units/day)</th>
<th>Medium (home total daily insulin 40 to 99 units/day)</th>
<th>High (home total daily insulin 100 units/day or more)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 4.0</td>
<td>Follow hypoglycemia protocol</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.1 to 8.0</td>
<td>0 units</td>
<td>0 units</td>
<td>0 units</td>
</tr>
<tr>
<td>8.1 to 10</td>
<td>0 units</td>
<td>0 units</td>
<td>2 units</td>
</tr>
<tr>
<td>10.1 to 12</td>
<td>2 units</td>
<td>2 units</td>
<td>5 units</td>
</tr>
<tr>
<td>12.1 to 14</td>
<td>3 units</td>
<td>4 units</td>
<td>8 units</td>
</tr>
<tr>
<td>14.1 to 16</td>
<td>4 units</td>
<td>6 units</td>
<td>12 units</td>
</tr>
<tr>
<td>16.1 to 18</td>
<td>5 units</td>
<td>8 units</td>
<td>16 units</td>
</tr>
<tr>
<td>18.1 to 20</td>
<td>6 units</td>
<td>10 units</td>
<td>20 units</td>
</tr>
</tbody>
</table>
| Greater than 20| 8 units and call physician                      | 15 units and call physician                    | 25 units and call physician

Physician signature: __________________________________________  College ID: __________  Date: __________  Time: __________

Postoperatively insulin requirements fluctuate depending on presence of pain, infection, and adequacy of oral intake. Careful consideration of diet and antidiabetic medication regimes provide good postoperative glucose control which improves clinical outcomes and shortens length of stay. (12)

Alters in sleep pattern occur during the first 1-6 nights after major abdominal surgery. Sleep deprivation produces a state of pronounced irritability, fatigue, anxiety, and increases patients stress level which leads to delayed wound healing. (4,23)

Postoperative tests determine present state of health. Abnormalities are addressed early and further complications avoided.