Physician Forum

Enhanced Recovery After Surgery (ERAS): The important role of the Family Physician in a patient’s journey through colorectal surgery

SEPTEMBER 2, 2015
MARITIME HERITAGE CENTRE
Welcome

- Payment is based on **sign in**
- **CME Credits** and Compensation thru Island Health
- Forum materials posted on RSP website
- Thank you and welcome to our **Speakers**:
  - Dr. Sarah Pearce
  - Dr. Leanne Wood
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Enhanced Recovery After Surgery (ERAS):
The Important Role of the Family Physician in a Patient’s Journey Through Colorectal Surgery

Dr. Sarah Pearce  Physician Lead CRH ERAS team
Dr. Leanne Wood  Chief of Surgery at CRH

September 2, 2015 – Campbell River, BC
Learning Objectives

1) ERAS requires a multidisciplinary team to deliver homogenous evidence-based care. Review the FP’s crucial role within that team in Campbell River.

2) Develop a functional knowledge of core ERAS elements, understanding how several targets vary from traditional practices.

3) Review preop optimization and education goals.

4) Review evidence-based strategies for navigating common postop obstacles while complying with ERAS goals.
ERAS: More than just another acronym...

- Why we need a change: Invasive surgery with traditionally prolonged and challenging recovery incurs unnecessary risk.

- Patient satisfaction is tremendous in ERAS.

- Newer implementation of evidence-based practices associated with:
  - 50% Reduction Complication Rates
  - 30% Reduction in Total Care Time
  - Shorter length of stay
  - Reduced wait times
  - Less likely to be re-admitted
  - Ready sooner for adjuvant therapy
#1. What is my role as the Family Physician?

- Review challenges of colorectal surgery
- Understand ERAS goals and strategies
- Brief overview of the BC ERAS collaborative
- Multidisciplinary team members
- How does the FP contribute to a patient’s best chances of achieving enhanced recovery?
Man up, soldier! Drinking this gallon of Golytely is the EASY part...
Colorectal Surgery Obstacles

- Preop preparedness and optimization
- Burden of co-morbid disease
- Physical stress of surgery
- Anesthetic risks
- Pain & side effects of analgesics
- Bowel motility
- Nutrition
- Mobility
- Surgical complications
- Medical complications
- Disposition and discharge planning
ERAS Goals & Strategies

* What do we want?
  
  Improved outcomes:
  * Reduce *complication rate* and *mortality*
  * Reduce length of *hospital stay*

* How?

  * *Educate* & prepare patients well – repetition is key
  * Reduce *surgical stress*
  * Minimize *end-organ dysfunction* and return each patient to normal physiology ASAP
  * Restore *bowel motility*
    * Euvolemia, PO intake, limit narcotics, mobilize
  * Homogeneous and multi-modal care
BC ERAS Collaborative

* Formed through Doctors of BC and Ministry of Health, run by the Specialist Services Committee

* 10 Teams across health authorities are pooling resources to implement change.
  * VGH, St. Paul's, Nanaimo, Kelowna, Terrace, Surrey, Langley, New Westminster, Kamloops…and us!
  * Campbell River is the first to officially and actively engage our Family Physicians as part of the team.

* Aim to dramatically improve quality of patient care, catching up to the global gold standard.
Multidisciplinary Team

- The Patient
- Family & Friends
- Family Physician
- Surgeon
- Anesthesiologist
- Pre-Admission team
- Periop & Ward Nurses
- PT & OT
- Dietician
- Pharmacy
- Discharge planning
- Community Care
Unique Position of the Family Physician

* Continuity of patient-centered care
* Anticipate potential challenges for the patient
* Opportunity to optimize comorbidities from the moment of referral
* Respect and understanding with patients in primary care facilitates meaningful conversation.
  * They trust and appreciate your advice.
  * Frequent visits allow for repetition and preparedness.
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#2. Understanding the components of ERAS

- Review the elements with the strongest evidence
- Understand how to practically apply them to patient care
- Brief overview of the other parameters also being monitored at Campbell River Hospital
5 Practices with Strong Evidence

1. Preadmission Counseling & Optimization
2. Use of Epidurals for Analgesia
3. Restriction of IV Fluids
4. Early and Aggressive Mobilization
5. Avoidance of Routine NG Tubes
KEEP
CALM
AND
DROP THE C-BOMB
How do we apply the evidence to practice?

* #1. PREADMISSION COUNSELLING & TEACHING
  
  * Patient understanding and anticipation is shown to improve outcomes and hasten recovery.
  
  * Handouts from Surgeon and preop clinic
  
  * Consults with Surgery and Anesthesiology
  
  * Thorough overview with preop nurse

* Family Physician:
  * Repetition is key. Patients are loaded with information and find it challenging to absorb it all.
  * Encouragement regarding optimization
How do we apply the evidence to practice?

#2. THORACIC EPIDURAL USE FOR ANALGESIA

- For patients with planned open technique or high risk patients in whom avoidance of systemic narcotics is of utmost importance

- Planned discontinuation on POD#2 providing patient is tolerating PO nutrition & medication

- Epidural discontinued and patient transition to oral analgesia with SC/IV breakthrough

- Laparoscopic surgical patients often have PCA
How do we apply the evidence to practice?

* #3. RESTRICTION OF IV FLUIDS

* Patients are euvoletic postop and encouraged to consume fluids orally immediately.

* If patient eating/drinking, consider treating fluid deficits with ORAL fluid encouragement. Avoid supratherapeutic IV Fluid administration.

* Normal Saline burdens patients with incredible amounts of salt, causing physiological imbalances and swelling...including bowels – slowing recovery and motility.

* IV lock encouraged ASAP
How do we apply the evidence to practice?

* #4. EARLY AND AGGRESSIVE MOBILIZATION

* Mobilizing promotes:
  * Bowel motility
  * Normalized sleep/wake cycles
  * Reduced time to discharge
  * Maintenance of agility and strength
  * Reduced risk of postop complications

* Incentive spirometry HOURLY is part of patient’s self-directed rehab

* Ongoing encouragement and motivation with patients and family supports is required.
How do we apply the evidence to practice?

* #5. AVOIDANCE OF NG TUBES

* When elective colorectal surgery patients arrive to the ward, they will likely not have NG tubes.

* If patient goes on to develop complications, NG tubes will be placed as required.

* Minimizing tubes & lines promotes enhanced recovery.
Other practices Being Monitored for Compliance

* **Avoid fasting** preop! Carbohydrate load if possible.
  * Clear fluids up to 2 hrs before surgery

* **Early PO intake** – chewing gum started in the recovery room immediately postop

* **Early removal of tubes** and drains, including Foley

* **Multimodal analgesia**, using gut ASAP

* **Aggressive N/V treatment**

* **Short acting anesthetics**, **avoid sedation**

* **Minimally invasive surgery** – laparoscopic when able

* **Preop antibiotics and bowel prep as per surgical Rx**

* **Normothermia**

* **Normal Blood glucose control**
REVIEW Learning Objective #2: Five Practices with Strong Evidence

* 1. Preadmission Counseling & Optimization – Engage the patient!
* 2. Use of Epidurals for Analgesia
* 3. Restriction of IV Fluids – Use the gut!
* 4. Early and Aggressive Mobilization
* 5. Avoidance of Routine NG Tubes

* All other parameters are being audited for compliance. We aim for 100% for quality care.
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#3. Preoperative Optimization and Education Targets

* Goals of Optimization by the Family Physician, Surgeon, and Anesthesiologist
  * 1. Anemia correction
  * 2. Smoking cessation
  * 3. Exercise & Stamina
  * 4. Nutrition

* Review timeline from Referral to Diagnosis to Surgery
  * Assisting patients in preparedness and motivation is key to successful enhanced recovery
Target #1: Anemia

* **Common** extraintestinal manifestations of colorectal cancer and may be present in 30%-75% of patients. 

* Both preoperative anemia and Iron Def without anemia increase the rate of postoperative *nosocomial infection*. 

* Higher **transfusion risk**

* Surgical Prescription:
  * Feramax 150 mg PO BID x 2 weeks prior to surgery
  * Vitamin C 500 mg PO BID x 2 weeks
  * D/C all anti-inflammatories 1 weeks prior to surgery

* **Correcting** anemia can start at the point of diagnosis and referral, and may improve compliance with treatment.

* Treatment reduces periop risks while reducing surgical stress and optimizing end-organ function.
Target #2: Smoking Cessation
Now is the time!

* 40% higher chance of **30-day mortality** \(^3\)

* 30 - 100% greater chance of **major morbidity** including surgical site infection, pneumonia, unplanned intubation and septic shock \(^3\)

* Interventions 4-8 weeks before surgery increase rates of **long-term** cessation. Both intensive and brief interventions improved success rates. \(^4\)

* Cessation at least 4 weeks from surgery reduced **respiratory** and **wound** infection complications. \(^5\)

* Smoking leads to delayed **wound healing**. Cessation restores the tissue microenvironment rapidly and the inflammatory cellular functions within 4 weeks. \(^6\)

* Undergoing major surgery approximately doubles the chances that a smoker will quit!!! \(^7\)

* Refer to [quitnow.ca](http://quitnow.ca)
Target #3: Exercise & Stamina

- **Surgical stress** of a bowel resection has been compared to the physical stress of running a marathon (or two).

- **Empower** patients to take control of their surgical journey and enhance recovery through preparation.

- **Respiratory: optimize function**, reduce dead space
  - Deep breathing exercises
  - Aerobic exercise
  - Optimize COPD, Asthma, etc.

- Improved **insulin sensitivity** and blood glucose in borderline and Diabetic patients – stress response

- Strength, coordination, balance
  - Atrophy prevention
  - Reduce **Falls risk**
"The prep is going really well actually. I've lost like 5 pounds today."
Target #4: Nutrition

- Logic dictates that improving dietary intake to manage/prevent weight loss and nutritional deficiencies leading up to surgery would be beneficial. We don’t have evidence for this yet.

- Focus:
  - Avoid fasting!
  - Avoid Dehydration!
  - Bowel Prep day before surgery: no solid food.
  - Carbohydrate Load: Rx beverage night before and morning of surgery.
  - Encourage clear fluids up to 2 hours before surgery!
    - We tell them this, but many patients miss this instruction.
REVIEW Learning Objective #3: Optimization and Education

* Targets of Optimization by the Family Physician, Surgeon, and Anesthesiologist
  
  * 1. **Anemia correction**: Start early to reduce periop risk.
  * 2. **Smoking cessation**: Surgery is the best opportunity! Significantly reduce morbidity and mortality.
  * 3. **Exercise & Stamina**: Every little bit helps!
  * 4. **Nutrition**: Avoid fasting. Normal Fluid balance!

* The FP can initiate optimization of comorbidities (Smoking, HTN, Lung disease, Diabetes, etc.) at the moment of referral and follow along to promote enhanced recovery.
**Learning Objectives**

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#4. Common Postop Obstacles

* Patients in Campbell River benefit from their family physicians providing *inpatient continuity of care*.

* Review *evidence-based solutions* to common *complications* to improve compliance and deliver homogeneous care.

1. Hypotension
2. Pain Management
3. Ileus
4. Respiratory compromise
5. Postop Infections
6. Intra-abdo abscess
7. Bleeding
8. DVT & PE

* Keep in mind goals of:
  * **Normal physiology and end-organ function**
  * **Mobilization**
  * **Promote PO Intake and Bowel Motility**
Complication: Hypotension

* Question DDx: Do not presume Hypovolemia!
  * Rule out ACS, PE, Surgical Emergencies.
  * Consider **pump & circuit**:
    * Preload
    * Afterload
    * Rate
    * Rhythm
    * Contractility
  * ? **iatrogenic** vs. ? **complication** vs. ? **exacerbation** of comorbid disease

* Medications
  * Epidural: Is the block getting too high? (ex. >T4)
    * Consider Ephedrine 25 mg IM if emergent, stop infusion, call Anesthesiologist
Complication: Hypotension

* Investigations to consider: Don’t just bolus IV fluids.
  * **Vitals**, including **Rhythm** – Is it regular?
  * Appearance of patient – pallor, clamminess, subjective sx
  * Blood sugar, possibly blood gas, electrolytes, trop, CBC
  * **ECG**

* If deemed to require volume replacement, strongly **encourage PO fluid** consumption.
  * Avoid NS if possible – hyperchloremic metabolic acidosis causing decreased renal perfusion, cardiac contractility and gastric blood flow.
  * **Consider Ringers** Lactate: 3 mL/kg bolus over 15 min or **colloid** (CRH has Volulyte)

* **Elevate Legs** to get an immediate “fluid bolus”
Complication: Pain Management

* Consider **alternatives to narcotics:**
  * NSAID
  * Tylenol
  * Tramadol – less impact on GI motility than other narcotics
  * Gabapentin

* **Use PO route** when able, or S/C PRN, allowing IV lock.

* PCA’s require IV fluid infusion – they aren’t perfect.

* Smaller doses are better
  * **Avoid somnolence and lethargy** often associated with larger doses.
  * Minimize narcotic effects on bowel motility
Complication: Ileus

* Very Common complication = Prolonged Ileus

* Several ERAS elements **target bowel motility**

* Heralded by feeling nauseated and subsequently **avoiding PO intake**

* Progresses to distention and possible vomiting

* **Patient Controlled Diet** – Encourage, no pushing.
  * Ex. crackers and liquids

* Treatment if advancing to significant Ileus:
  - NPO
  - NG tube placement
  - Mobilize!
  - Correct electrolyte imbalances
  - Med review: bowel motility SE’s
  - Limit narcotics
Complication: Respiratory Compromise

* **Hypoventilation** risk: Pain, body habitus, OSA, respiratory disease, narcotic SE, position, decreased mobility, hypercarbia, medication synergy

* **Hypoxia**: ?edema vs. ?atalectasis vs. ?infection vs. ?PE

* Dx: A patient on O2 after POD#1 – Ask WHY???
  * Supplemental oxygen will not solve hypoventilation

* Treatment:
  * **Improve ventilation**: CPAP prn (RT consult), spirometry, Physio, avoid sedation, positioning, bronchodilation
  * **Treat complications**: infection, PE, heart failure, etc.

* **Prevention** is key – many of the above are avoidable
Complication: Postop Infections

* Wound Check: POD #2

* If concerns re increasing Erythema:
  * Remove a couple staples
  * Add PO Antibiotics when necessary

* Other infections & preventative measures:
  * UTI: Foley discontinued ASAP
  * Pneumonia: optimize, spirometry and mobilization
Complication: Intra-abdominal Abscess

* Presentation:
  * Generally unwell
  * Fever
  * Rising WBC
  * Diarrhea or decreasing BM’s
  * Increasing Abdo pain

* Investigation: **CT Abdo/Pelvis on POD#5**
  * Before POD#5 simple fluid collections make dx difficult

* DDX includes: Anastomotic Leak
  * Often POD 5-7
  * Presentation: **sicker**, septic, decreasing Oxygen Saturation and Urine Output, tachycardia
  * Require urgent CT and Radiologic or Surgical Intervention
Complication: Bleeding

* **Early Bleeding**: first few hours
  * Hypotension, tachycardia, hypoxemia, pallor
  * Check INR/PTT along with Hemoglobin
* **Cause**: often surgical
  * Requires transfusion and return to OR

* **Late Bleeding**: POD #5-7
  * Bloody BM, possible hypotension and tachycardia
* **Cause**: often Anastomosis
  * Management: transfusion often sufficient
Complication: DVT / PE

* All patients should be on Heparin or Dalteparin
* Rare before POD#3-5

* Presentation:
  * Leg swelling & pain
  * Tachypnia, hypoxia, and hypercarbia

* Investigation:
  * Urgent U/S, or CT PE protocol as needed

* Treatment:
  * IV Heparin
  * S/C dalteparin
  * Warfarin indefinitely for Cancer patients
Learning Objective #4: Common Postop obstacles

- Patients in Campbell River benefit from their family physicians providing inpatient continuity of care.
  - Understanding of patient baseline, deviation, and cause for concern

- Review evidence-based solutions to common complications to improve compliance and deliver homogeneous care.

- Keep in mind goals of:
  - Normal physiology and end-organ function
  - Mobilization
  - PO Intake & Bowel Motility
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Brief ERAS Summary

* ERAS patients eat immediately, mobilize plenty, and aim for discharge within days.

* Compliance with the pathway reduces mortality, morbidity, and improves readiness for adjuvant therapy.

* Educate & Empower our patients along the way

* Optimize comorbidities from moment of referral
  * Anemia
  * Smoking – interventions best when > 4-8 weeks out
  * COPD/Asthma, Diabetes, etc.

* Help them understand to avoid fasting and stay hydrated. They will chew their favourite gum after surgery, so stock up.

* IV's will be locked ASAP. Use the GUT!

* Limit narcotics, preserve GI motility, and treat nausea aggressively.
References


Thank You!
In Closing

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- Thank you to our **Speakers**:
  - Dr. Sarah Pearce
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- Please complete an Evaluation form
- Physician Forum – **Patterns of Pain: An effective approach to low back pain**
  Monday, October 19 in Nanaimo