ENHANCED RECOVERY AFTER SURGERY (ERAS)

St. Paul's Hospital / Mount St. Joseph's Hospital - ERAS Pathway

Pre-operative

- PAC consult / Optimization of co-morbidities
- Smoking / Alcohol / Illicit drugs cessation
- Oral carbohydrate (CHO) loading
- CHO-containing clear fluid up to 2 hrs pre-op
- Pre-op forced air warming
- Minimize long-acting sedative pre-medication
- Maximize non-opioid analgesic pre-medication
- Thoracic epidural analgesia (TEA) for open cases
- ***Consider*** thoracic epidural for *high-risk* minimally invasive cases[1]

Intra-operative

- Aggressive PONV prophylaxis (2-3 agents)
- Maximize opioid-sparing techniques
- ***If no epidural, lidocaine infusion recommended***
  - 1.5 mg/kg loading dose at induction
  - 1.5-2 mg/kg/hr infusion[2]
- Active warming for normothermia
- Avoidance of nasogastric (NG) tubes
- Maintenance of normoglycemia
- ***Balanced crystalloid recommended***
  - Avoid 0.9% normal saline
  - Plasmalyte, Normosol or Ringer's lactate are recommended
  - Consider infusion pump for maintenance fluid
- ***Avoid water & salt excess***
  - Fluid administration goal of *4-8 mL/kg/hr*
- Consider use of non-invasive hemodynamic monitoring in select cases[3]

Post-operative

- Multimodal, opioid-sparing pain management
- Early removal of NG tube & foley catheter
- Early feeding, suggest gum chewing in PAR
  - Encourage early *oral* hydration
- Early mobilization & physiotherapy
- ***Avoid excessive post-operative IV fluid***
  - Balanced crystalloid recommended for boluses
  - D5 0.45% NS (+/- KCl) for maintenance fluid
  - Lock IV POD#1 whenever possible
- ***Tolerance of oliguria*** *(<0.5mL/kg/hr)*
  - If urine output remains low after 4 hrs, a clinical examination for hypovolemia is indicated
  - Low urine output in isolation is not an indication for fluid bolus

1. ***High-risk cases*** *may include surgically complex minimally-invasive cases at elevated risk of conversion to open surgery or patient factors such as pre-operative opioid tolerance/chronic pain syndromes or significant cardio-pulmonary co-morbidities*
2. ***Lidocaine infusion*** *may be continued in post-anesthetic recovery room & on surgical wards (consult with APS)*
3. ***May include:*** *Open surgery, cases expected to be >4hrs duration, ASA III or greater patients, expected blood loss >500mL, extremes of BMI, age >80 years.*

Selected References:

1. Scott MJ *et al*. Enhanced Recovery After Surgery (ERAS) for gastrointestinal surgery, part 1: pathophysiological considerations. Acta Anaesthes Scand 2015; 59: 1212-31
2. Feldheiser A *et al*. Enhanced Recovery After Surgery (ERAS) for gastrointestinal surgery, part 2: consensus statements for anaesthesia practice. Acta Anaesthes Scand 2015 Oct 30 (Epub ahead of print)
3. BC ERAS Collaborative Consensus Guideline on Goal-Directed Fluid Therapy. *Coming soon to:* enhancedrecoverybc.ca
4. BC ERAS Collaborative Consensus Guideline on Pain-Management and Opioid-Sparing Techniques. *Coming soon to:* enhancedrecoverybc.ca

Please record fluid administered, urine output, & estimated blood loss accurately on the anesthetic record!