Preoperative Optimization & Enhanced Recovery Pathway (ERP) Practice Advisory
PART 2
February 2023

PART 2* - Enhanced Recovery Pathway (ERP)

* In an effort to simplify and streamline this advisory, it has been split into 2 parts. However, both parts go hand-in-hand to improve outcomes and reduce length of stay.
Part 1 – Preoperative Optimization
Part 2 – Enhanced Recovery Pathway (ERP)

PERI- & POSTOPERATIVE CARE

Pain Management
Perioperative pain management strategies have evolved significantly and should include a plan for preoperative patient education and standardized postoperative multi-modal pain control strategies. For opioid naïve patients, guidelines based on patient-reported data, published studies, and expert opinions should be used to optimize pain control and set patient expectations. For patients with preoperative opioid requirements, partnering with pain specialists to formulate a proactive plan for postoperative pain control can result in improved outcomes related to narcotic prescribing and patient satisfaction.

Intraoperative adjuncts for pain relief can be considered to reduce postoperative pain. Epidural pain control, regional nerve blocks, local field blocks can be considered. Perioperative pain control strategies should be optimized with anesthesia providers to assure patients are premedicated with non-narcotic adjuncts in advance of an operation.

In an effort to reduce opiate use, postoperative pain management should include non-opioid pain control options including over-the-counter medications (e.g., acetaminophen, ibuprofen), non-opioid prescription medications (e.g., gabapentin).

Prophylactic Antibiotics
A first-generation cephalosporin (e.g., cefazolin) is recommended, with appropriate weight-based dosing as well as intraoperative redosing as necessary, based on antibiotic half-life (e.g., q4 hours for cefazolin, q2 hours for cefoxitin). According to ASHP (American Society of Health-System Pharmacists) guidelines, it is recommended that all patients under 120 kg receive 2 g cefazolin, whereas those ≥120 kg be given 3 g, redosed every 4 hours. There is no data to support postoperative antibiotics for clean cases, with data supporting cessation of prophylactic antibiotics after wound closure. For penicillin-allergic patients, clindamycin is recommended. However, hospital-specific antibiograms with susceptibility profiles and pharmacy policies may alter some of these recommendations. In patients with an enterocutaneous fistula or planned bowel resection, increased anaerobic coverage is warranted (e.g., fluoroquinolone or cefazolin plus metronidazole, ertapenem, etc.). For patients with prior infected mesh, use prior culture results for antibiotic selection. For documented MRSA patients, both Vancomycin *and* cefazolin are recommended for comprehensive coverage of both MRSA and MSSA. For patients with prior infected mesh, consider use prior culture results for antibiotic selection.

For patients with actively infected wounds, infected mesh, chronic draining sinuses, enterocutaneous fistulas, etc., the primary initial goal should be removal of all sources of infection, and not necessarily definitive hernia repair. The general recommendation is source control, with removal of all foreign bodies, wound debridement, and any necessary GI

resections/anastomoses, if indicated. Antibiotic choice should cover any known culture sensitivities and enteric flora, if present. Length of antibiotic therapy is unclear for these cases. Unlike prophylactic antibiotics which end at time of skin closure, treatment antibiotics are commonly extended for a period of time postoperatively, even after source control.

Venous Thromboembolism (VTE) Prophylaxis
We suggest the use of both pharmacological and mechanical VTE prophylaxis. Pharmacologic prophylaxis with unfractionated heparin or low molecular weight heparin is advised. Pharmacologic VTE prophylaxis can be started preoperatively or postoperatively. Considering that up to 50% of postoperative VTE are diagnosed after discharge, extended pharmacologic prophylaxis up to 3-4 weeks postoperatively can be considered in high-risk patients (e.g., limited mobility, personal history of VTE) Mechanical VTE prophylaxis with intermittent compression devices is recommended during hospitalization.

Postoperative Dietary Advancement
Oral nutritional intake should be initiated within hours of surgery, with minimal interruption. Early enteral nutrition demonstrates lower rates of complications and hospital length of stay. Further, gastric decompression with NGT/OGT and delayed oral intake have not proven to be beneficial in patients undergoing general surgical procedures. Alvimopan treatment has been shown to improve outcomes after open bowel resections and other abdominal procedures, though benefits in patients undergoing minimally invasive surgery and treated with multi-modal enhanced recovery protocols are unknown. The use of low-risk interventions such as probiotic supplementation may be associated with improved outcomes via immunomodulating properties and enhancement of the intestinal mucosal barrier.

Drain Usage & Management
The use of drains in hernia repair and abdominal wall reconstruction is a debated practice. Large complex hernias and the use of component separation create potential spaces for fluid collection. While drains allow for fluid evacuation, there is also concern that they are a potential cause of foreign body reactions and infection. Drain use in ventral hernia repair has not shown to increase risk of infectious complications, but has demonstrated reduced incidence of seroma formation. However, prolonged use of drains may be associated with increase rates of surgical site occurrence and/or infection.

Abdominal Binder
Data on abdominal binder use following hernia repair and abdominal operations is sparse, with studies showing some degree of improvement in patient comfort and pain relief as the primary benefits. While abdominal binders have minimal to no risk and can be considered for postoperative use, they do not alter risk for hernia recurrence, and do not significantly reduce seroma risk.

Negative Pressure Wound Therapy
Negative pressure wound therapy may be considered in the setting of complex abdominal wall reconstruction. When compared to conventional dressings, current evidence has demonstrated decreased rates of surgical site infections in general surgical populations.