IN THE NAME OF GOD

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Presenter:

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Enhanced Recovery in Bariatric Surgery

ASMBS

-*evidence-based recommendations about perioperative management*

-expedite recovery, decrease morbidity, and decrease length of stay

-“fast-track surgery”

-coordination between many stakeholders

-colorectal surgery-gynecologic, hepatobiliary, and cardiovascular surgery

-bariatric surgery

-decreases length of stay, does not seem to affect morbidity, and can be associated with lower costs of care

Pathophysiological Principles

-minimize surgical stress and maintain normal homeostasis and physiologic functions

-faster return to baseline

-cascade of hormonal and metabolic changes

-Minimally invasive surgery-decreased tissue injury

-insulin resistance-negative clinical outcomes

-preoperative carbohydrate loading, avoiding prolonged fasting prior to surgery, early initiation of oral feeding, and monitoring for tight glycemic Control

-epidural anesthesia

-“fed” state-carbohydrate drinks prior to surgery

fluid shifts and derangements in salt and water retention

-pulmonary system
-bowel wall edema
-intestinal permeability
-blood perfusion
-weight gain of 3 kilograms
- postoperative complications
-avoiding routine bowel preparation
employing judicious intraoperative fluid management
-avoiding hypothermia
-adopting lungprotective ventilation strategies
-avoiding urinary catheters and nasogastric tubes

pain management strategies

-preemptive analgesia, spinal or regional blocks, local anesthetic agents, and non-narcotic oral analgesics -nonsteroidal anti-inflammatories, COX-2 inhibitors, acetaminophen

-avoiding narcotics -return of bowel function Postoperative nausea and vomiting

Practice Implementation

-***Preoperatively***

patients are strongly encouraged to receive counseling

-discharge expectations

-more patients being discharged on post operative day (POD) 1

-no difference in readmission or complication rates

-carbohydrate loading

-fasting rules-(clear liquids up to 2 hours prior and solids up to 6 hours prior)

-medical optimization of comorbidities

-preoperative weight loss-lower postoperative complications

-Intraoperatively

-goal-directed fluid management

-prophylaxis against postoperative nausea and vomiting (PONV)

-earlier postoperative drinking, and shorter length of stay (LOS)

-specific anesthetic agents

-Short-acting agents with prompt onset and recovery

-calculations to assist with titration of anesthetic agents

-mean time from start of anesthesia to start of surgery and the time from end of surgery to end of anesthesia were both significantly reduced

-ventilation strategies

-(PEEP) and appropriate patient positioning

-early mobilization

-aggressive pulmonary toilet

-positive airway pressure (CPAP)

-Multimodal analgesia strategy

-reduction in opioid requirements, postoperative nausea and vomiting, and readmissions

-acetaminophen and NSAIDs

-Gabapentanoids

-Local and regional blocks

-TAP block group/port-site infiltration:

-had significantly less postoperative pain

-required less morphine rescues

-had shorter hospital LOS

-have higher rates of discharge within 48 hours

-Postoperatively Thromboprophylaxis monitoring

-management of obstructive sleep apnea

-Oral intake is also suggested to start as soon as patient is safe and ready to attempt, usually on the night of surgery

-Early ambulation is initiated as soon as possible, again usually within hours after surgery

Intervention	Outcome(s)	Evidence	Guidelines[a]
Immediate preoperative			
Carbohydrate loading	↓ Insulin resistance, ↓ protein catabolism, ↓ LOS, faster return of bowel function	[b]	6, 7
Reduced fasting	No adverse outcomes	[b]	6–8
Multimodal pre-anesthesia medication	↓ Pain, ↓ PONV, ↓ opioid use	[b]	6, 7
Intraoperative			
Standard intraoperative anesthesia pathway	↓ Pain, ↓ PONV, ↓ opioid use	[b]	6, 7
Protective ventilation strategy	↓ Pulmonary complications	[b]	6, 7
Fluids/goal-directed fluid therapy	↓ Morbidity, ↓ LOS	[b]	6, 7
Postoperative nausea and vomiting prophylaxis	↓ PONV	[b]	6, 7, 10
Postoperative			
Standard postoperative multimodal analgesic regimen	↓ Pain, ↓ PONV, ↓ opioid use	[b]	6, 7

Improving Surgical Care and Recovery Bariatric Surgery Protocol Components: Anesthesia

Immediate preoperative

- Reduced fasting
- Carbohydrate loading
- Multimodal pre-anesthesia medication

Intraoperative

- Standard intraoperative anesthesia pathway
- Protective ventilation strategy
- Fluids/goal-directed fluid therapy
- Postoperative nausea and vomiting prophylaxis

Postoperative

- Standard postoperative multimodal analgesic regimen

Source: Grant [31]. Reprinted with permission from Wolters Kluwer Health, Inc.

-earlier discharge in bariatric patients is usually encouraged and, moreover, safe and feasible

-discharge on POD#1 was not associated with higher rates of complications or readmission

-same-day sleeve (gastrectomy)

-carefully selected patients within a practice setting that can support it with very close follow-up

Enhanced Recovery Outcomes in Bariatric Surgery

-significantly decreased LOS

-decreased operative time

-same or comparable rates of morbidities and reinterventions/readmissions

-No studies report a difference in mortality

-LOS decrease from 2.24 to 1.76 days

-without increased bleeding, reoperation, or readmission rates

-feasibility of implementing a national set of recommendations

-underlines the potential benefits of decreasing variability and opioid use, thus increasing quality and value

Exclusion and Barriers to Implementation

-age >50 years
-body mass index (BMI) >50
-Hispanic or non-Hispanic black race/ethnicity
-impaired functional status
-diabetes on insulin
-chronic steroid use
-bleeding disorder
-dialysis
-chronic obstructive pulmonary disease,
-Hypoalbuminemia
- longer operative time,
-concurrent cholecystectomy

NSQIP

-female sex, age > 65, BMI > 50, COPD, hypertension, renal insufficiency, anemia, and prolonged operative time

-preoperative opioid use, history of psychiatric illness, chronic kidney disease, and revisional cases tended to be associated with delayed discharge

-low oral fluid intake on the day of surgery and intraoperative adverse events were significantly associated with readmission

Economic Benefits

-reduced inpatient costs, likely due to decreased LOS and decreased morbidity

-data in bariatric-specific enhanced recovery cost-effectiveness is even more limited

-decreases in surgery time, anesthesia induction time, as well as operating room turnover time, but no changes in reoperations, readmissions, or complications

lies with the analysis and reporting of cost information

Conclusion

-evidence-based protocols that minimize surgical stress, maintain homeostasis, and minimize opioid use in all bariatric surgery programs

-“NPO after midnight,” the use of bowel preps, the use of drains and catheters, and routine imaging studies or prolonged periods without oral intake after surgery

-safety and effectiveness of specific components of enhanced recovery for this unique population

-bariatric surgery will continue to be the leader in quality and patient safety among all surgical specialties


THANK YOU