



Colorectal Enhanced Recovery: Strategies and Tactics

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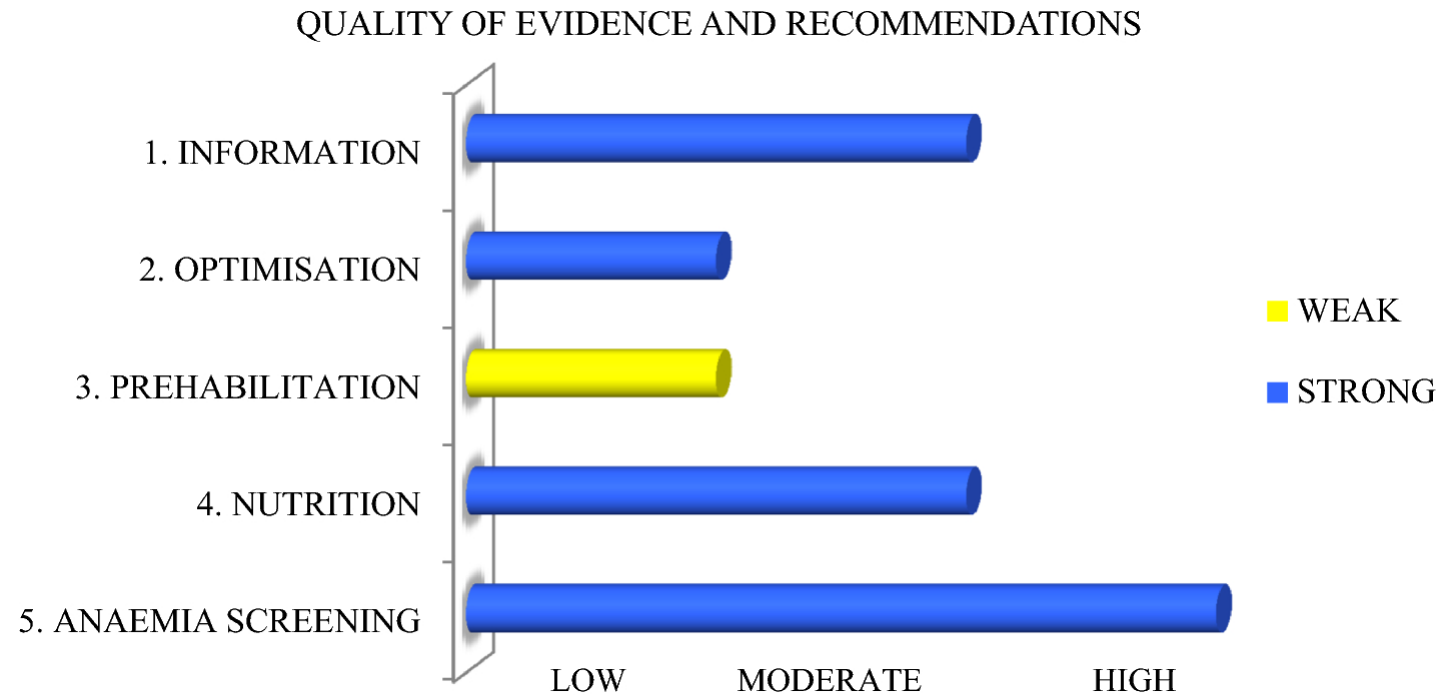
Core Elements of Colorectal Enhanced Recovery: Objectives

- 1 REVIEW CORE ELEMENTS OF A COLORECTAL SURGERY ENHANCED RECOVERY PROGRAM
- 2 DISCUSS THE DATA AUDIT ELEMENTS OF ENHANCED RECOVERY IN THE UT SYSTEM

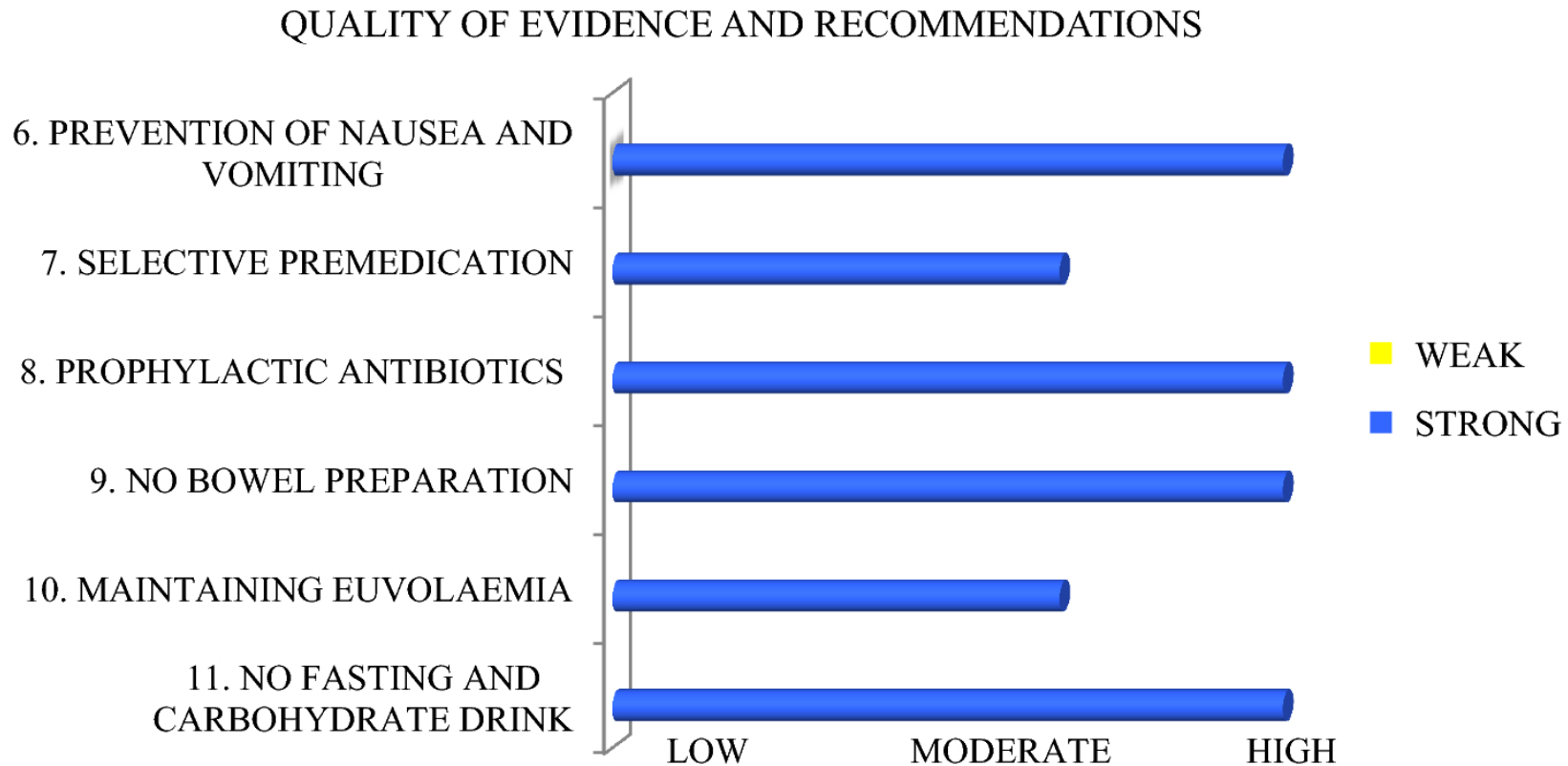
Core Elements of Colorectal Enhanced Recovery



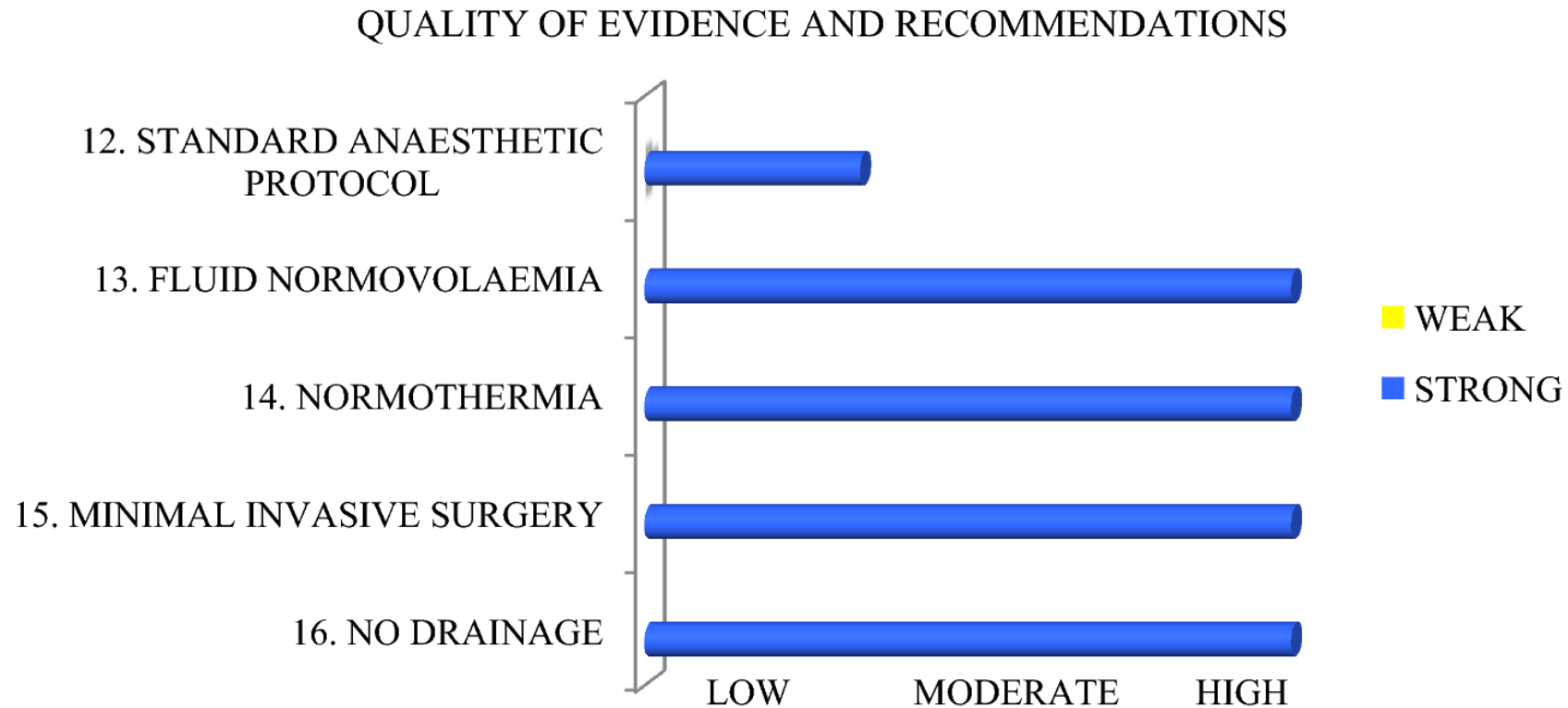
Core Elements of Colorectal Enhanced Recovery: Pre-operative



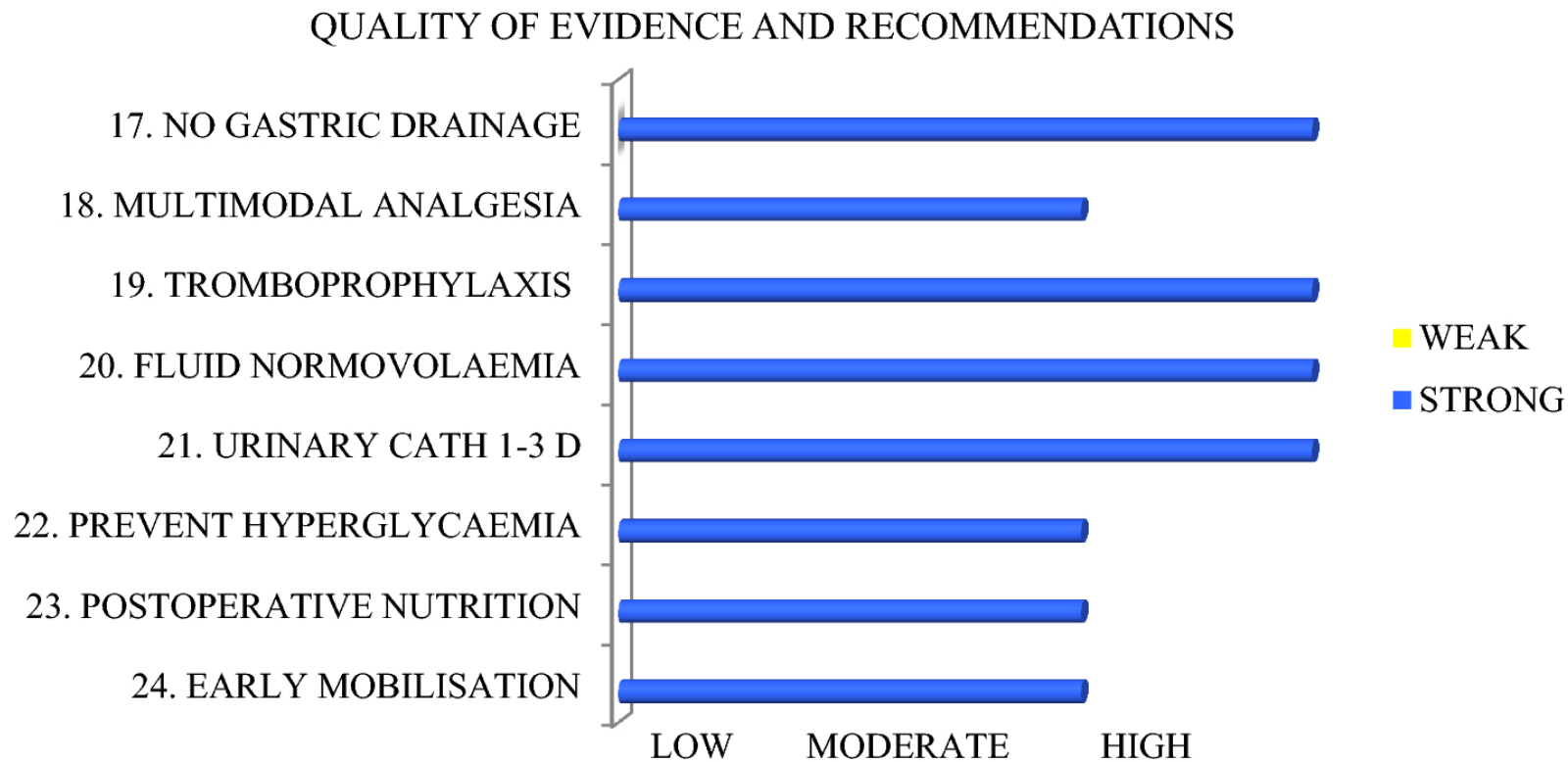
Core Elements of Colorectal Enhanced Recovery: Pre-operative



Core Elements of Colorectal Enhanced Recovery: Intra-operative



Core Elements of Colorectal Enhanced Recovery: Post-operative



ERUT Data Elements-Audit

Phase of Care	Element	Measure	Source
Preoperative	Patient Education	Yes/No	Survey Plus Audit
	Clear Liquids 2 Hours	Yes	Survey Plus Audit
	Carbohydrate Loading	Yes/No	Survey Plus Audit
	Antibiotic Bowel Prep	Yes/No	Survey Plus Audit
	Mechanical Bowel Prep	Yes/No	Survey Plus Audit
	Preoperative Outpatient Patient Reported Outcome (PRO)	Yes/No	Survey Plus Audit
Postoperative	Nasal Gastric Tube Placement	Yes/No	Survey
	Clear Liquids Ordered POD #0	Yes/No	Order Set
	Regular Diet Ordered POD #1	Yes/No	Order Set
	Mobilization Ordered POD #0, 1, 2	Yes/No	Order Set
	Foley Removal Ordered On/Before POD #1	Yes/No	Order Set
Outcomes	Postoperative Outpatient Patient Reported Outcome (PRO)	Yes/No	Survey Plus Audit

ERUT Data Elements-Per Patient

Phase of Care	Element	Measure	Source
Demographic	Age	Number	EHR
	Sex	Male/Female	EHR
Medical Baseline	Primary Diagnosis	Name	EHR, Op Note
	Urgency (Emergency Case)	Emergent	Op Note, Anesth Record (ASA Classification)
	Elective Surgery	Elective	Op Note, Anesth Record (ASA Classification)
	Diabetes (Diabetes Mellitus)	Yes/No	EHR, H&P
	Date of Surgery	Date	Op Note
Surgical Baseline	Approach	Name	Op Note
	Primary Procedure	Name	Op Note
	Ostomy	Yes/No	Op Note
	Non-Narcotic Analgesia	Yes/No	MAR, Anesth Record
Preoperative	Entereg (Alvimopan)	Yes/No	MAR , Anesth Record
	Type of Anesthesia	TIVA/Volatile	Anesth Record
Intraoperative	Block	Yes/No	Op Note, Anesth Record
	Intraop Morphine Equivalent Daily Dose (MEDD)	mg	Anesth Record
	Total IVF Volume (Crystalloids & Colloids)	CC	Op Note, Anesth Record
	Post-Op Nausea Vomiting Prophylaxis	Yes/No	Anesth Record
	Abdominal Drain	Yes/No	Op Note
	Non-Narcotic Analgesia	Yes/No	MAR, Anesth Record
Postoperative	Total Inpatient Morphine Equivalent Dose (MEDD)	mg	MAR with Calculator
Outcomes	Length of Stay (LOS)		Discharge Summary
	Readmission Within 30 Days (same hospital, any cause)	Yes/No	EHR
	Wound Infection Requiring Bedside Interventions (superficial site infection) within 30 days	Yes/No	Discharge Summary, Postop Clinic Cote
	IR Re-intervention for Abscess/Leak/Collection (NSQIP=OSI)	Yes/No	IR Procedure Note
	Reoperation	Yes/No	Op Note
	Death within 30 Days (any cause)	Yes/No	Death/Discharge Summary

Core Elements of Colorectal Enhanced Recovery

Mechanical Bowel Preparation



NSAIDS



Core Elements of Colorectal Enhanced Recovery

SCIENTIFIC REVIEW

Guidelines for Perioperative Care in Elective Colorectal Surgery: Enhanced Recovery After Surgery (ERAS[®]) Society Recommendations: 2018

U. O. Gustafsson¹ · M. J. Scott^{2,3} · M. Hubner⁴ · J. Ny
T. A. Rockall⁸ · T. M. Young-Fadok⁹ · A. G. Hill¹⁰ · M
G. J. Chang¹⁴ · A. Fichera¹⁵ · H. Kessler¹⁶ · F. Grass⁴
F. Carli¹⁹ · D. N. Lobo²⁰ · K. E. Rollins²⁰ · A. Balfour²

CLINICAL PRACTICE GUIDELINES

Clinical Practice Guidelines for Enhanced Recovery After Colon and Rectal Surgery From the American Society of Colon and Rectal Surgeons and Society of American Gastrointestinal and Endoscopic Surgeons

Joseph C. Carmichael, M.D.¹ · Deborah S. Keller, M.S., M.D.² · Gabriele Baldini, M.D.³
Liliana Bordeianou, M.D.⁴ · Eric Weiss, M.D.⁵ · Lawrence Lee, M.D., Ph.D.⁶
Marylise Boutros, M.D.⁶ · James McClane, M.D.⁷ · Liane S. Feldman, M.D.⁶
Scott R. Steele, M.D.⁸

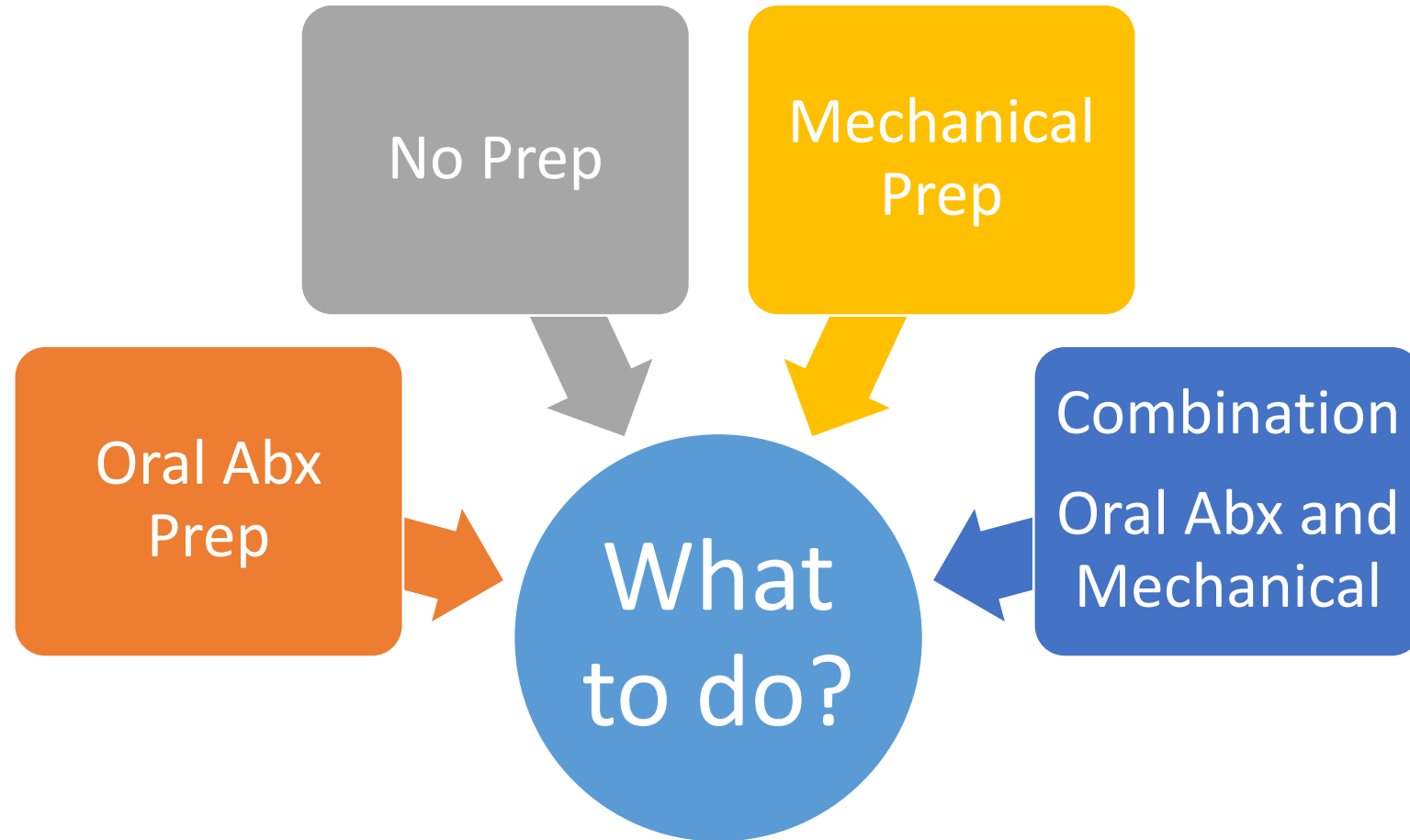
Gustafsson, UO, et al. World J Surg (2018).
Carmichael JC, et al. Dis Colon Rectum (2017).

Core Elements Colorectal Enhanced Recovery: Bowel Preparation

- Focus on impact of bowel preparation on SSI and anastomotic leak
- Question is on benefit versus patient experience, dehydration, etc.
- Pendulum has swung back and forth



Core Elements Colorectal Enhanced Recovery: Bowel Preparation



Core Elements Colorectal Enhanced Recovery: Bowel Preparation

- Consensus –
 - MBP alone is not recommended
 - Data is very strong that it provides no benefit
 - Can be considered for rectal surgery with diverting stoma



Core Elements Colorectal Enhanced Recovery: Bowel Preparation

Oral Antibiotic Bowel Preparation Reduces Length of Stay and Readmissions after Colorectal Surgery

Galina D Toneva, BS, Rhiannon J Deierhoi, MPH, Melanie Morris, MD, Joshua Richman, MD, PhD, Jamie A Cannon, MD, Laura K Altom, MD, MSPH, Mary T Hawn, MD, MPH, FACS

The role of oral antibiotics prophylaxis in prevention of surgical site infection in colorectal surgery

Michalis Koullouros¹ • Nadir Khan¹ • Emad H. Aly^{1,2}

A Statewide Colectomy Experience

The Role of Full Bowel Preparation in Preventing Surgical Site Infection

Edward K. Kim, BS, Kyle H. Sheetz, BS, Julie Bonn, BS, Scott DeRoo, BA, Christopher Lee, Isaac Stein, BA, Arya Zarinsefat, BA, Shijie Cai, PhD, Darrell A. Campbell, Jr, MD, and Michael J. Englesbe, MD

Toneva GD, et al. JACS, 2018.

Koullouros M, et al. Int J Colorectal Dis, 2017.

Kim EK, et al. Ann Surg, 2014.

Core Elements Colorectal Enhanced Recovery: Bowel Preparation

ASCRS/SAGES

Mechanical bowel preparation plus oral antibiotic bowel preparation before colorectal surgery is the preferred preparation and is associated with reduced complication rates.

- Grade of recommendation: weak recommendation based on moderate-quality evidence, 2B.

Gustafsson, UO, et al. World J Surg (2018).
Carmichael JC, et al. Dis Colon Rectum (2017).

ERAS Society

- Mechanical bowel preparation alone with systemic antibiotic prophylaxis has no clinical advantage and can cause dehydration and discomfort and should not be used routinely in colonic surgery, but may be used for rectal surgery. There is some evidence from randomized controlled trials to support the use of a combination of MBP and oral antibiotics over MBP alone.
 - MBP Alone: Quality of evidence: High
 - Recommendation grade: Strong
 - Combined MBP and oral antibiotic preparation: Quality of evidence: Low
 - Recommendation grade: Weak

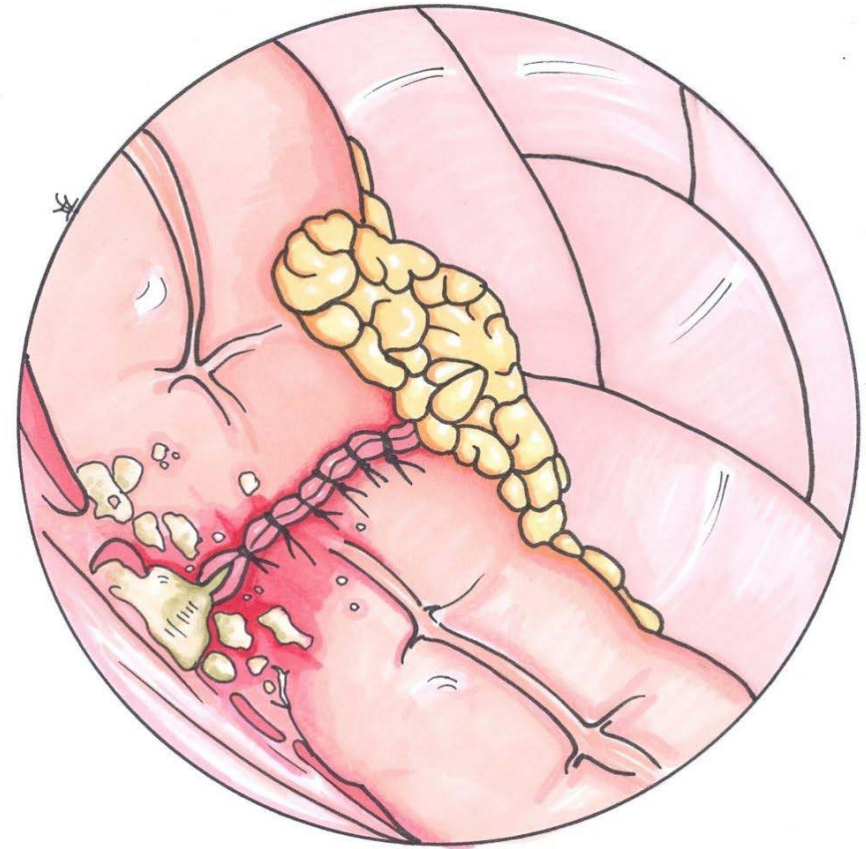
Core Elements Colorectal Enhanced Recovery: Bowel Preparation

Summary –

- MBP alone should not be used
- MBP + Oral Abx may be beneficial (absence of randomized data)

Core Elements Colorectal Enhanced Recovery: NSAIDs

- Data supports benefits in reduction of opioid usage as component of multimodal pain regimen
- Questions focused on impact on incidence of anastomotic leak
 - No randomized data



Core Elements Colorectal Enhanced Recovery: NSAIDS

Nonsteroidal anti-inflammatory drugs and the risk of
anastomotic leakage after anterior resection for rectal
cancer^{*}

D. Kverneng Hultberg^{a,*}, E. Angenete^b, M.-L. Lydrup^c,
J. Rutegård^a, P. Matthiessen^d, M. Rutegård^a

- 1495 patients from 15 hospitals in Sweden from 2007-2013
- Examined NSAIDs and incidence of anastomotic leak (up to 90 days)
 - Had to receive NSAIDs for >2 days

Core Elements Colorectal Enhanced Recovery: NSAIDS

NSAID exposure	Anastomotic leakage	Univariate	Multivariable (complete case) ^a	Multivariable (imputed) ^b
	N (%)	OR (95% CI)	OR (95% CI)	OR (95% CI)
No NSAID	156/1084 (14.4)	1.00 (reference)	1.00 (reference)	1.00 (reference)
Any NSAID	47/411 (11.4)	0.77 (0.53–1.12)	0.83 (0.63–1.05)	0.88 (0.65–1.20)
Non-selective ^c	36/344 (10.5)	0.70 (0.43–1.11)	0.83 (0.58–1.18)	0.91 (0.62–1.35)
COX-2 selective ^d	11/66 (16.7)	1.19 (0.82–1.72)	0.81 (0.64–1.02)	0.82 (0.63–1.06)

- No increased risk of leak with NSAID use
- No difference for selective or non-selective drugs

Core Elements Colorectal Enhanced Recovery: NSAIDS

ASCRS/SAGES

- “Evidence is inconclusive and does not support avoidance of NSAIDs”

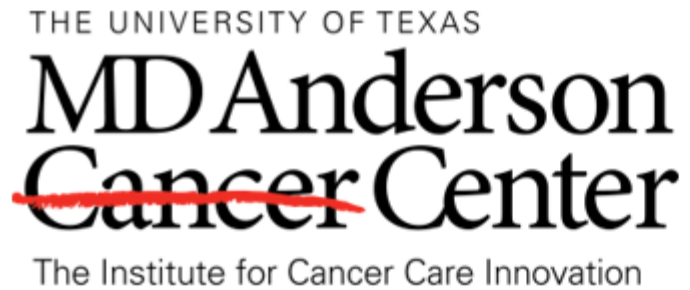
ERAS Society

- “Literature shows inconclusive evidence to avoid NSAIDs in colorectal surgery patients”

Gustafsson, UO, et al. World J Surg (2018).
Carmichael JC, et al. Dis Colon Rectum (2017).

Core Elements Colorectal Enhanced Recovery: NSAIDS





Webinar: Opioid Sparing Strategies- From Concepts to Implementation and Sustainability

Presenter: Vijaya Gottumukkala, MD

February 7, 2019

4:00pm-4:30pm (CT)

Questions?