

The Impact of Sugammadex on Postoperative Ileus after Abdominal Wall Reconstruction

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Disclosures

Daphne Remulla

- None

Clayton Petro


- Merck (investigator-initiated study)



Background

Ileus rate after abdominal wall reconstruction: a retrospective analysis of two clinical trials

13% POI rate

C. D. Greco¹ · C. C. Petro² · J. D. Thomas¹ · K. Montelione² · C. Tu³ · A. Fafaj² · S. Zolin² · D. Krpata² · S. Rosenblatt² · M. Rosen² · L. Beffa² · A. Prabhu² 

Ileus



Length of stay

8 vs 5 days (p<0.001)



Healthcare costs

19% median 30-day costs



Complications




Is there something we can do??


The comparative efficacy and safety of sugammadex and neostigmine in reversing neuromuscular blockade in adults. A Cochrane systematic review with meta-analysis and trial sequential analysis

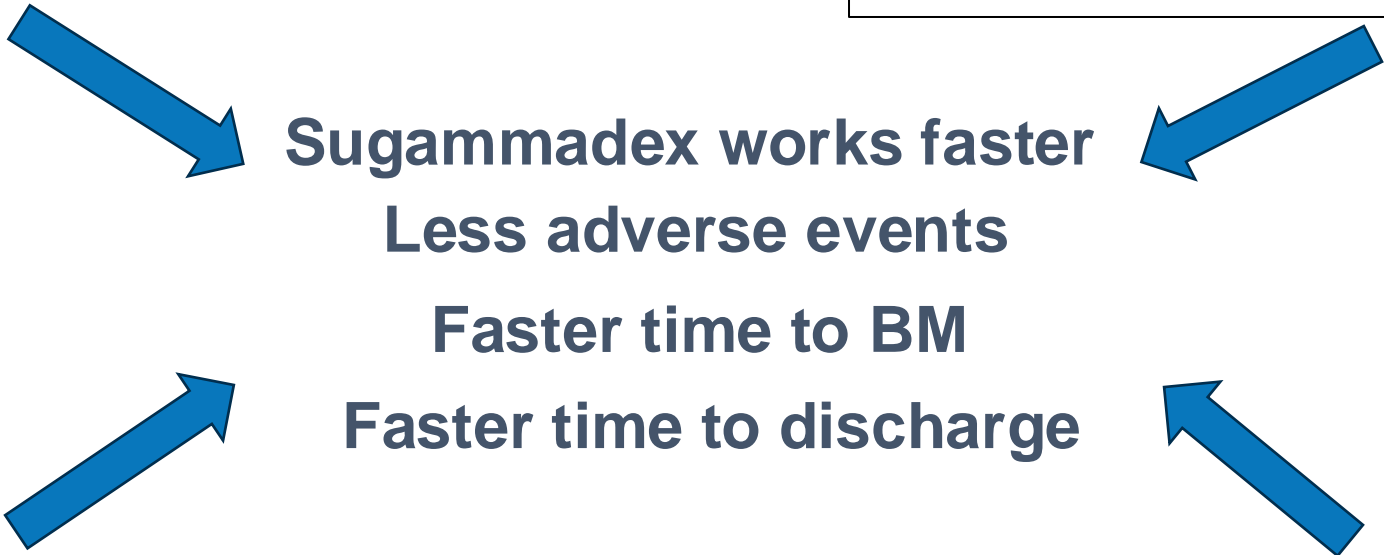
A.-M. Hristovska,¹ P. Duch,² M. Allingstrup³ and A. Afshari⁴

Effects on Postoperative Gastrointestinal Motility After Neuromuscular Blockade Reversal With Sugammadex Versus Neostigmine/Glycopyrrolate in Colorectal Surgery Patients

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Molly E. Hunt, PharmD¹, John R. Yates, PharmD, BCPS¹, Hannah Vega, MD¹, Robert E. Heidel, PhD¹, and Jason M. Buehler, MD¹ 



Sugammadex works faster
Less adverse events
Faster time to BM
Faster time to discharge

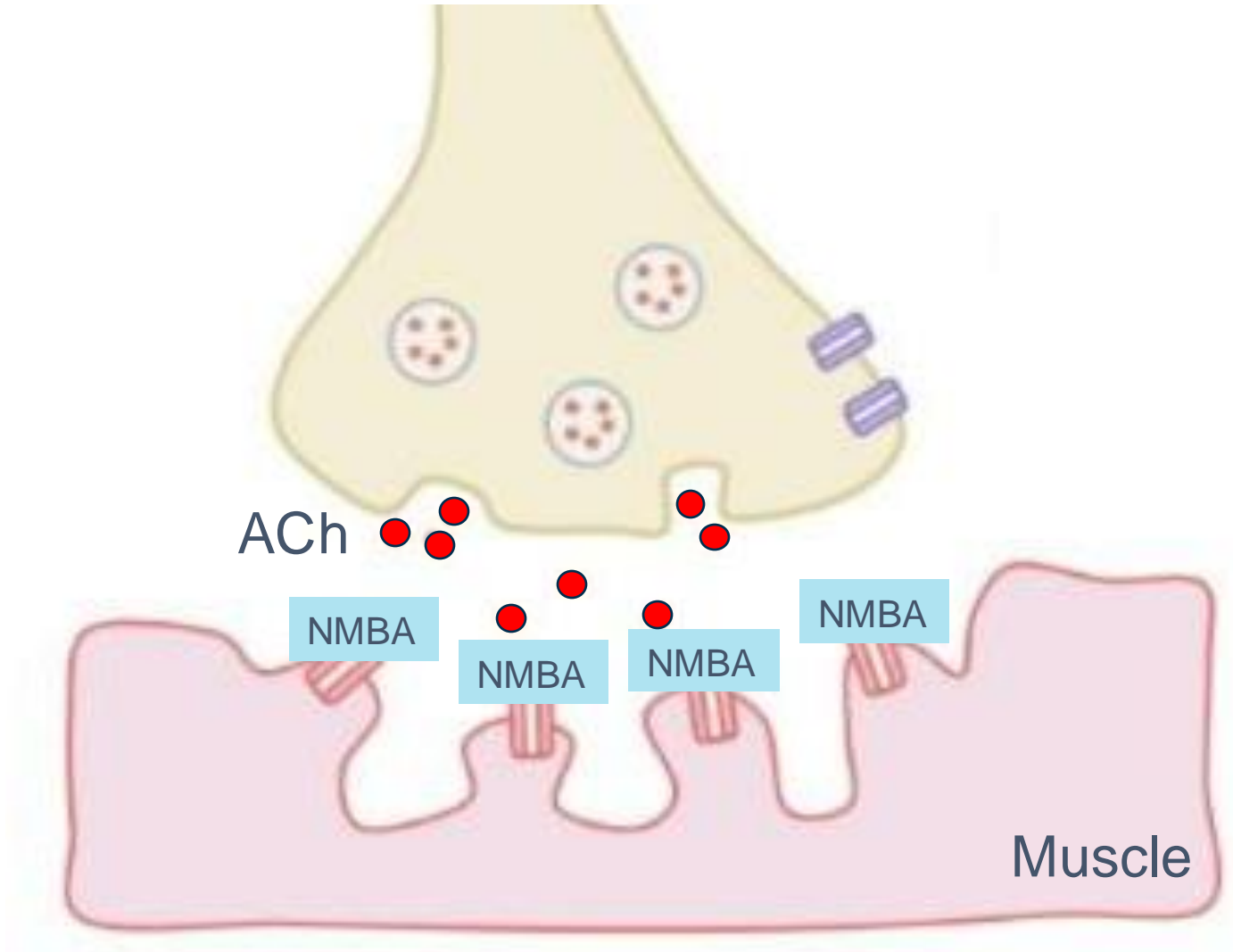
A retrospective cohort study of the effect of sugammadex versus neostigmine on postoperative gastrointestinal motility in open colorectal surgical procedures

Taylor N. Harris^a, Eric G. Johnson^{a,b,c}, Aric Schadler^b, Jitesh Patel^d, Ekaterina Fain^c, Laura M. Ebbitt^{a,b,*}

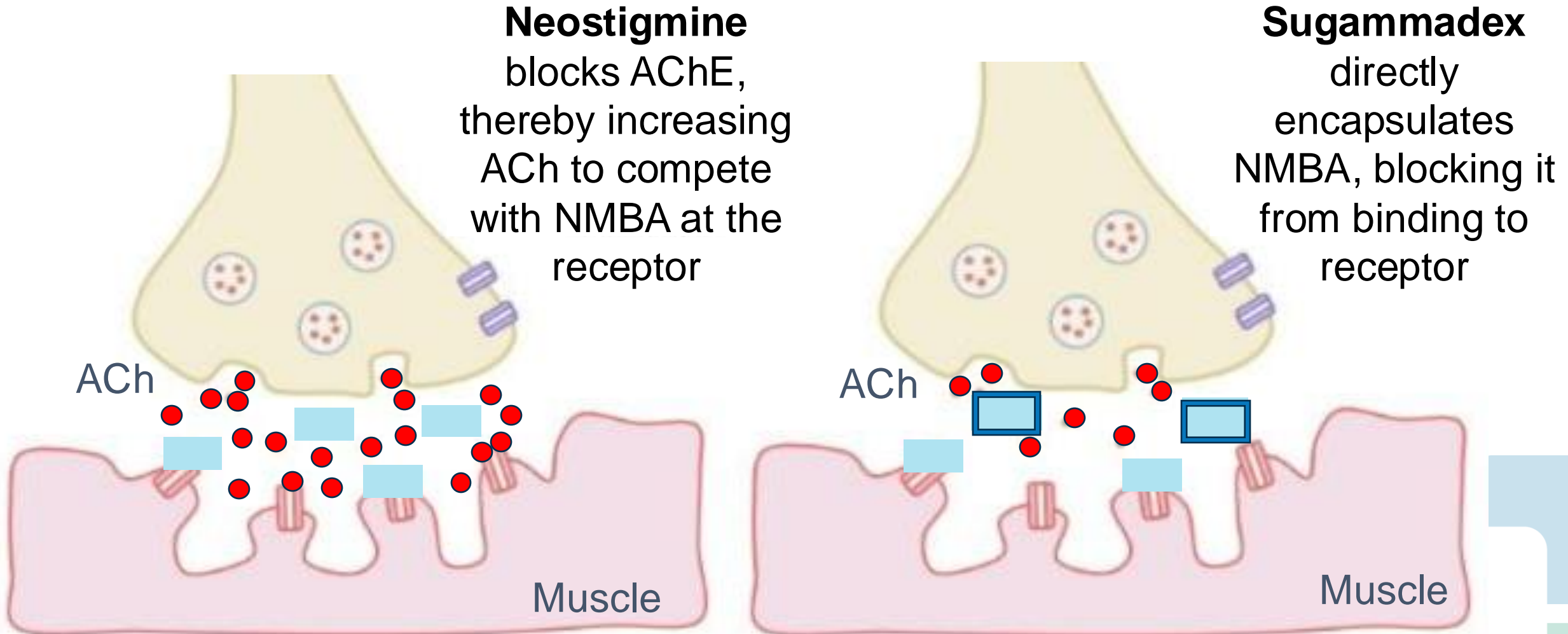
Role of sugammadex in accelerating postoperative discharge: A meta-analysis☆

Michele Carron^{a,*}, Francesco Zarantonello^a, Nadia Lazzarotto^a, Paola Tellaroli^b, Carlo Ori^a

Neuromuscular Blockade Refresher



Reversal Refresher



Comparison

Neostigmine

Sugammadex

Reverses..

ALL non-depolarizing NMBA

ONLY rocuronium and vecuronium

Incidence of residual NMB

Higher

Lower

Cost

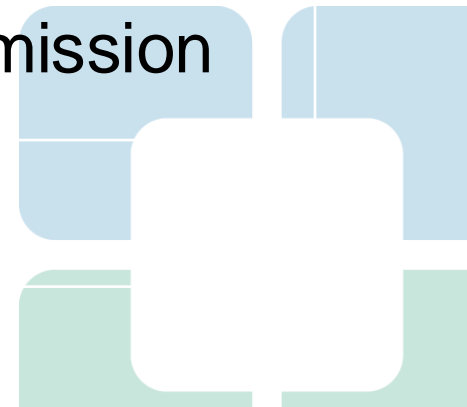
\$

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Must be administered with glycopyrrolate to counteract muscarinic effects

Does not interact with cholinergic transmission



Outcomes

Primary outcome: Time to return of GI-2

Secondary outcomes:

- **Rate of post-operative ileus**
- **Post-operative length of stay**



Hypothesis

We hypothesize that Sugammadex will

- ↓ Time to return GI-2**
- ↓ Incidence of postoperative NG placement**
- ↓ Post-operative length of stay**



Trial Design

- Double-blinded, registry based RCT
- Single center (CCF)
- Power calculation: 184 pts (92/arm)
 - The median time to GI-2: 76.6 hours (3.19 days)
 - **Reduction of 35% (~1 day)**
 - (alpha 0.05, power 0.8)



Subject Selection

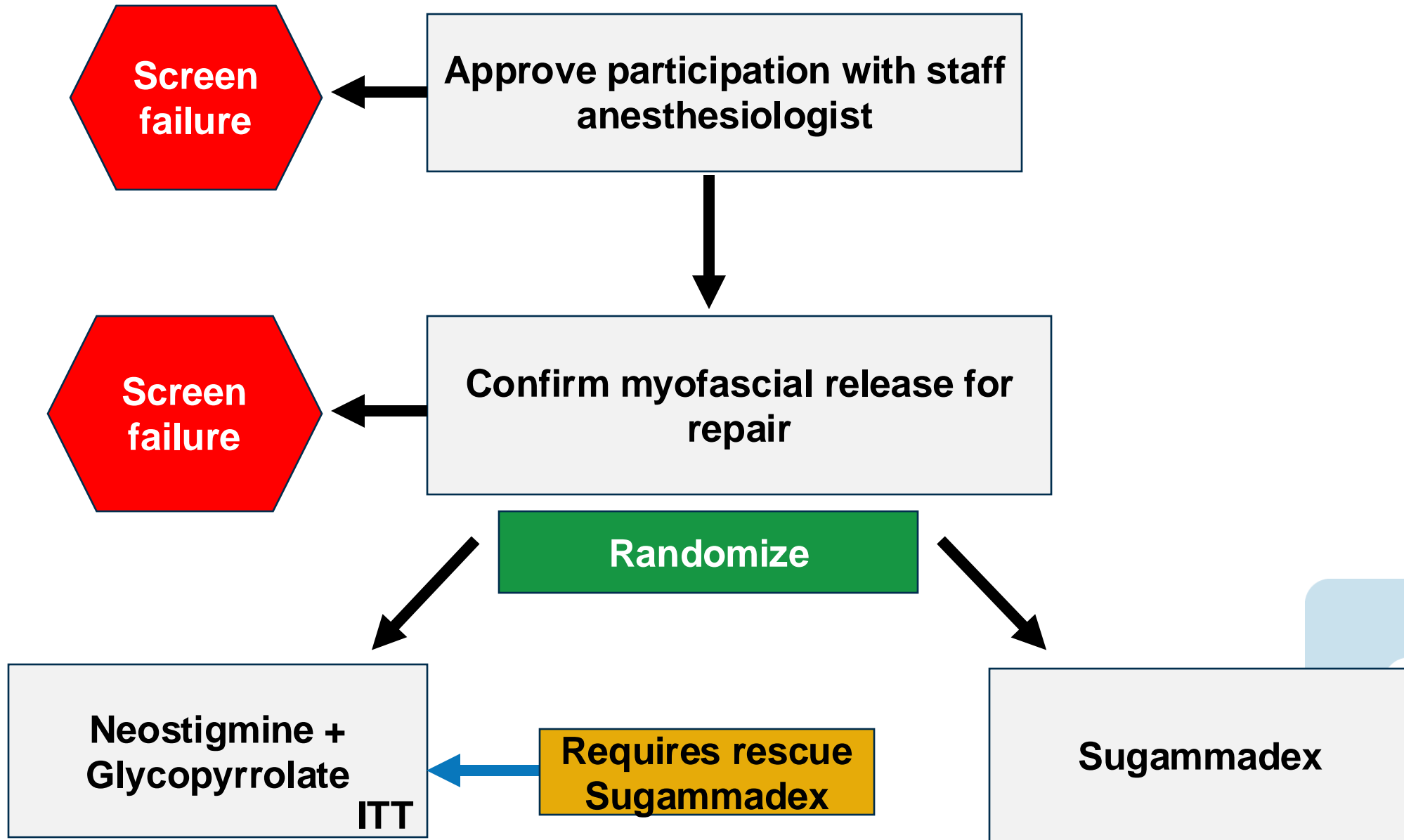
Inclusion

- ≥ 18 yo
- Open VHR with retro-muscular mesh and at least one myofascial advancement flap
- < 20 cm in width
- Non-emergent case

Exclusion

- Hypersensitivity to Sugammadex
- Known or suspected SBO at time of repair
- Use of chronic opioids
- Emergent cases
- Severe co-morbidities at the discretion of surgeon
 - (hepatic failure, renal failure, GI diseases eg Crohn's)

Day of Surgery

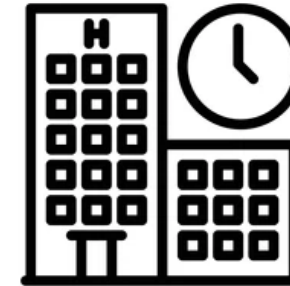


Time to GI-2

NGT Insertion



Hospital LOS



Data for planned *a priori* subgroup analysis

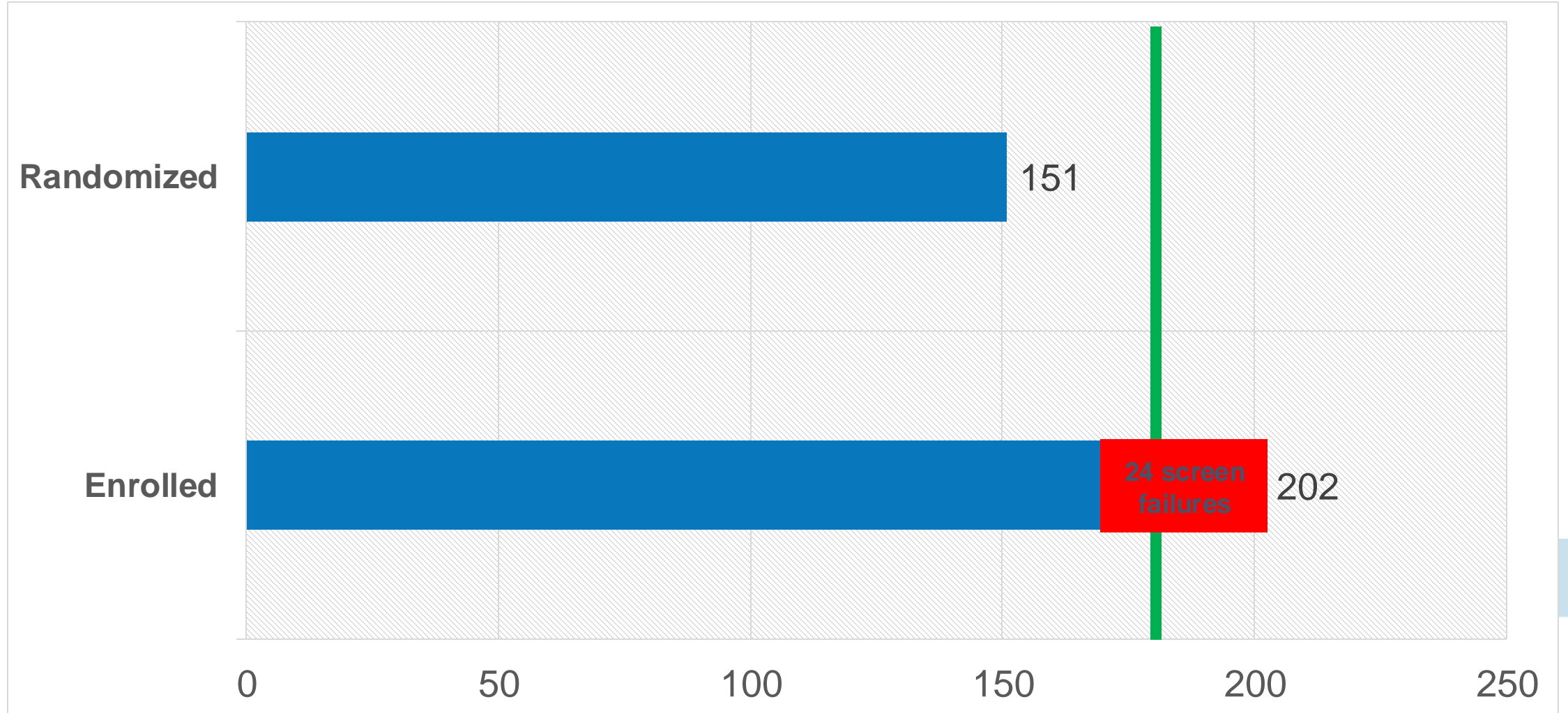
Pain
POD1-4

Opioid Consumption
MME POD1-4

OR timestamps
Duration of LOA
Duration of repair
Case duration

Intra-operative survey
Complete LOA
Evaluation for TP

Current Status



Screen failure: staff anesthesiologist preference

- “This patient is too big”
- “They have a history of OSA and I am worried about their breathing”
- “Sugammadex is just better/faster/safer”
- “No one should be using neostigmine anymore”



2023 American Society of Anesthesiologists Practice Guidelines for Monitoring and Antagonism of Neuromuscular Blockade: A Report by the American Society of Anesthesiologists Task Force on Neuromuscular Blockade

Recommendation	Strength of Recommendation	Strength of Evidence
6. We recommend sugammadex over neostigmine at deep, moderate, and shallow depths of neuromuscular blockade induced by rocuronium or vecuronium, to avoid residual neuromuscular blockade.*	Strong	Moderate
7. We suggest neostigmine as a reasonable alternative to sugammadex at minimal depth of neuromuscular blockade.	Conditional	Low



Looking Forward & Lessons Learned

- Granular data for a priori analyses & future trials
- Institutional practices evolve & new evidence continues to emerge
- Collaboration and buy-in is key, though bias still exists





Cleveland Clinic

Every life deserves world class care.