GLP-1 RA medications and Anesthesia Considerations Unified Multi-society Guidance

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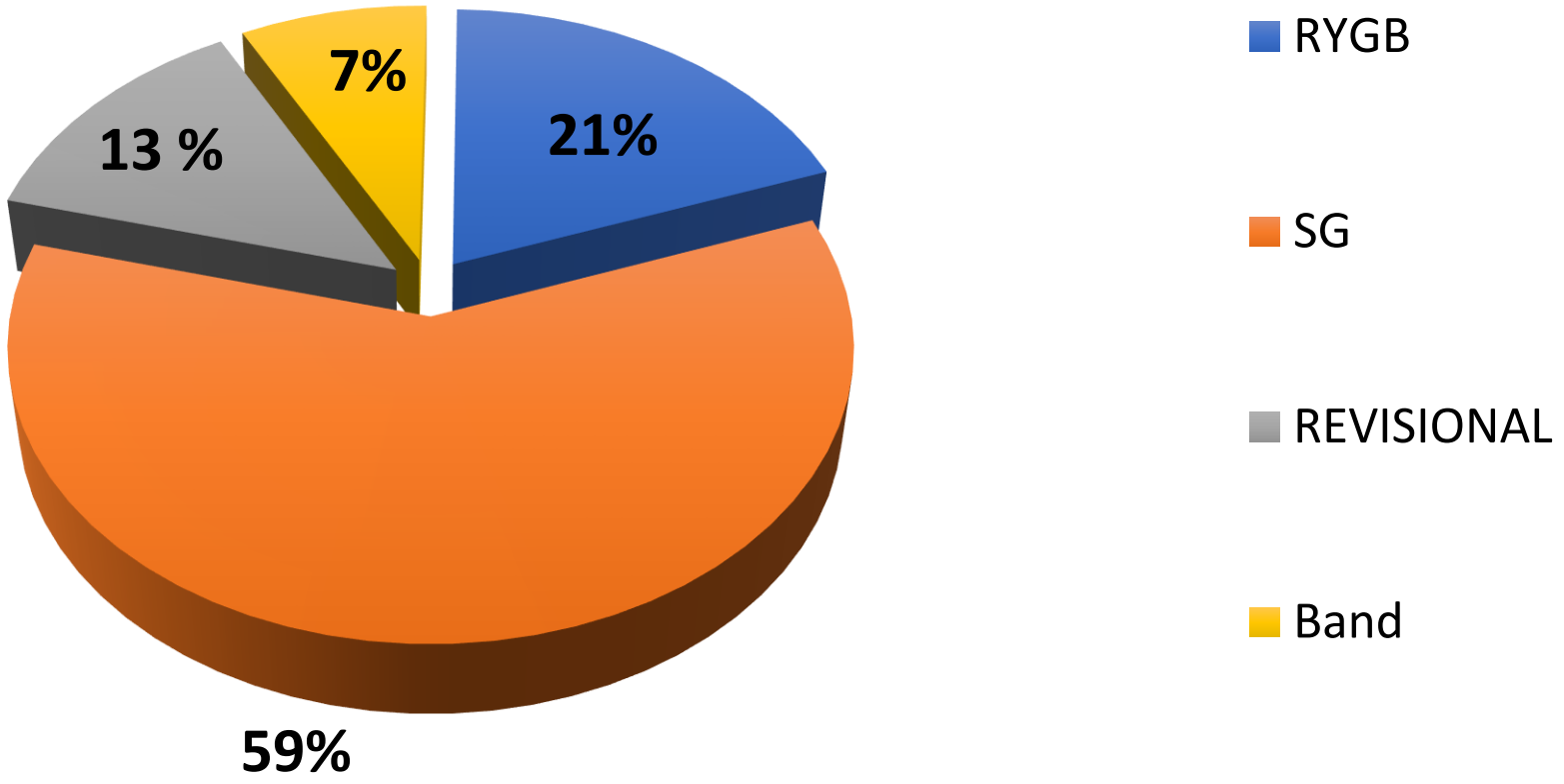
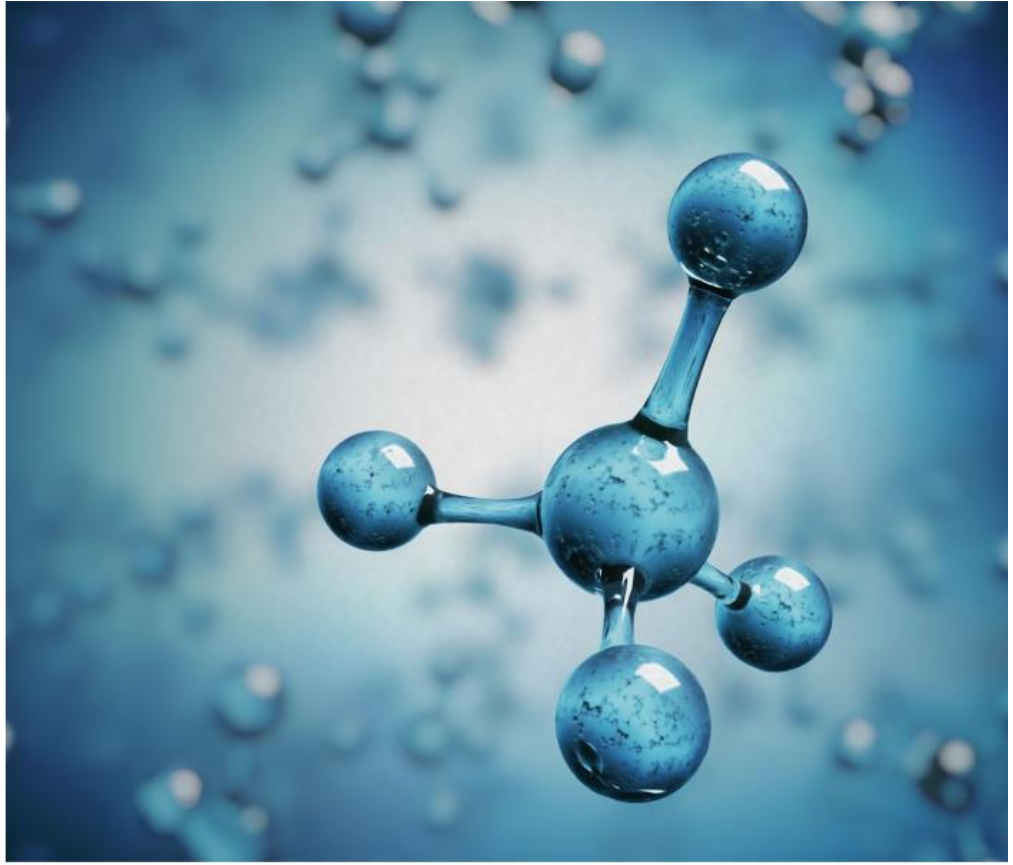


Objectives

- Review recent society guidance on use of GLP-1RA and anesthesia concerns
- Discuss upcoming multi- society practice guidance on safe use of GLP-1RA in the perioperative timeframe



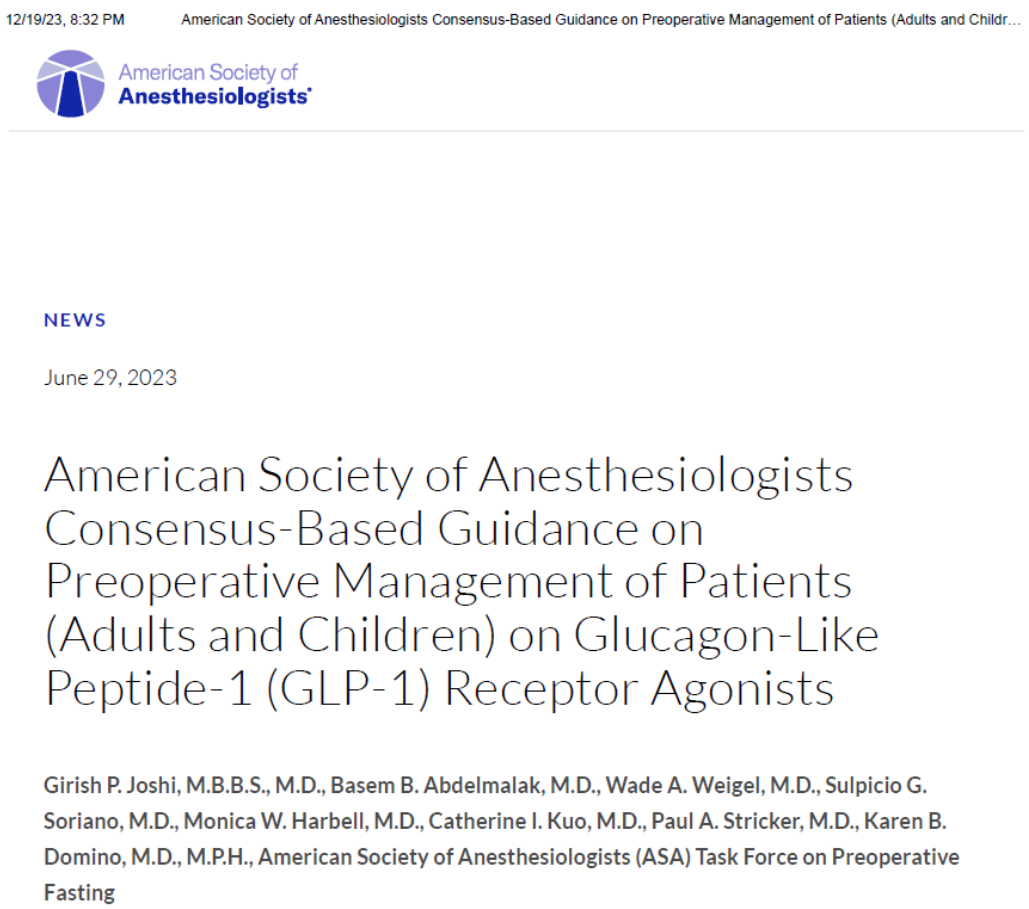
Background

- GLP-1 RA use has increased exponentially in the past few years with the newest generation medication of Semaglutide and Tirzepatide
- GLP-1 RA medications have been in use for T2DM for more than 15 years and for treatment of obesity for 10 years
- They have been used safely in the periprocedural timeframe (especially in MBS and Endoscopy)

- With the increase in GLP-1 RA use there were more recently some case reports of retained gastric contents with some aspiration events
- This led to a consensus clinic practice guidance issued by the ASA on the organization for their members for consideration in June 2023

- In the literature review, the ASA acknowledged there was not enough significant evidence to give practice guidelines, however due to a few case reports it was felt some communication should occur around the use of GLP-1 RA medications and anesthesia

ASA guidance – on internal society communication Task Force on Preoperative Fasting



12/19/23, 8:32 PM American Society of Anesthesiologists Consensus-Based Guidance on Preoperative Management of Patients (Adults and Childr…

American Society of Anesthesiologists

NEWS

June 29, 2023

American Society of Anesthesiologists Consensus-Based Guidance on Preoperative Management of Patients (Adults and Children) on Glucagon-Like Peptide-1 (GLP-1) Receptor Agonists

Girish P. Joshi, M.B.B.S., M.D., Basem B. Abdelmalak, M.D., Wade A. Weigel, M.D., Sulpicio G. Soriano, M.D., Monica W. Harbell, M.D., Catherine I. Kuo, M.D., Paul A. Stricker, M.D., Karen B. Domino, M.D., M.P.H., American Society of Anesthesiologists (ASA) Task Force on Preoperative Fasting

- **NEWS** June 29, 2023
- American Society of Anesthesiologists Consensus-Based Guidance on Preoperative Management of Patients (Adults and Children… https://www.asahq.org/about-asa/newsroom/news-releases/2023/06/american-society-of-anesthesiologists-consensus-based-guidance-on-preoperative
- **Girish P. Joshi, M.B.B.S., M.D., Basem B. Abdelmalak, M.D., Wade A. Weigel, M.D., Sulpicio G.Soriano, M.D., Monica W. Harbell, M.D., Catherine I. Kuo, M.D., Paul A. Stricker, M.D., Karen B.Domino, M.D., M.P.H., American Society of Anesthesiologists (ASA) Task Force on Preoperative Fasting**

ASA Communication to members

- The evidence to provide guidance for preoperative management of these drugs to prevent regurgitation and pulmonary aspiration of gastric contents is sparse **limited only to several case reports**.
- Nevertheless, given the concerns of GLP-1 agonists-induced delayed gastric emptying and associated high risk of regurgitation and aspiration of gastric contents, the task force **suggests** the following for elective procedures.

- For patients requiring urgent or emergent procedures, proceed and treat the patient as ‘full stomach’ and manage accordingly.

For Elective Procedures

- **Day(s) Prior to the Procedure:**
- For patients on daily dosing consider holding GLP-1 agonists on the day of the procedure/surgery. For patients on weekly dosing consider holding GLP-1 agonists a week prior to the procedure/surgery.
- This suggestion is irrespective of the indication (type 2 diabetes mellitus or weight loss), dose, or the type of procedure/surgery.
- If GLP-1 agonists prescribed for diabetes management are held for longer than the dosing schedule, consider consulting an endocrinologist for bridging the antidiabetic therapy to avoid hyperglycemia.

Day of the Procedure:

- **If gastrointestinal (GI) symptoms such as severe nausea/vomiting/retching, abdominal bloating, or abdominal pain are present**, consider delaying elective procedure, and discuss the concerns of potential risk of regurgitation and pulmonary aspiration of gastric contents with the proceduralist/surgeon and the patient.

- If the patient has no GI symptoms, and the GLP-1 agonists have been held as advised, proceed as usual.
- If the patient has no GI symptoms, but the GLP-1 agonists were not held as advised, proceed with 'full stomach' precautions or consider evaluating gastric volume by ultrasound, if possible and if proficient with the technique.
- If the stomach is empty, proceed as usual.
- If the stomach is full or if gastric ultrasound inconclusive or not possible, consider delaying the procedure or treat the patient as 'full stomach' and manage accordingly. Discuss the concerns of potential risk of regurgitation and pulmonary aspiration of gastric contents with the proceduralist/surgeon and the patient.
- There is no evidence to suggest the optimal duration of fasting for patients on GLP-1 agonists. Therefore, until we have adequate evidence, we suggest following the current ASA fasting guidelines

Internal communication

- Draw attention to the concern
- Make suggestions and considerations that seemed reasonable based on a few case reports
- Patient safety

- Did not acknowledge negative consequence of cancelling or delaying procedures
- Did not acknowledge impact of holding medications on global perioperative care of the patient
- Widespread implementation – Hold medication or cancel procedure concerns from only one perspective

Multi-society response

- AASLD/ACG/AGA/ASGE/NASPGHAN Multisociety Statement.
- No data to support stopping GLP-1 agonists prior to elective endoscopy. 2023. Accessed September 16, 2023. https://gastro.org/news/gi-multi-society-statement-regarding-glp-1-agonists-and-endoscopy/ Correspondence Address to: Andrew Y. Wang
- Created in response to ASA consensus clinical guidance or expert opinion without evidence to support recommendations
- Concerned about unintentional harms that were created by holding medication prior to elective endoscopy without data showing relative risk of aspiration

AGA

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Clinical Gastroenterology and Hepatology 2023;■:■–■

AGA Rapid Clinical Practice Update on the Management of Patients Taking GLP-1 Receptor Agonists Prior to Endoscopy: Communication

Jana G. Hashash,[1] Christopher C. Thompson,[2] and Andrew Y. Wang[3]

[1]Division of Gastroenterology and Hepatology, Mayo Clinic, Jacksonville, Florida; [2]Division of Gastroenterology, Hepatology and Endoscopy, Brigham and Women's Hospital, Harvard Medical School, Boston, Massachusetts; and [3]Division of Gastroenterology and Hepatology, University of Virginia, Charlottesville, Virginia

DESCRIPTION: The purpose of this American Gastroenterological Association (AGA) Institute Rapid Clinical Practice Update (CPU) Communication is to review the available evidence and provide expert advice regarding the evolving management of patients taking GLP-1 receptor agonists prior to endoscopy.

METHODS: This CPU was commissioned and approved by the AGA Institute Clinical Practice Updates Committee (CPUC) and the AGA Governing Board to provide timely guidance on a topic of high clinical importance to the AGA membership and underwent internal peer review by the CPUC and external peer review through standard procedures of Clinical Gastroenterology and Hepatology. This communication incorporates important and recently published studies in this field, and it reflects the experiences of the authors who are experts in bariatric medicine and/or endoscopy.

Keywords: Glucagon-like peptide; Anesthesia; Sedation; Semaglutide; Ozempic; Wegovy.

- on GLP-1 RAs with standard perioperative procedures (typically an 8-hour solid-food fast and a 2-hour liquid fast) and **who do not have symptoms** of nausea, vomiting, dyspepsia, or abdominal distention, **we advise proceeding with upper and/or lower endoscopy**.

- In patients **with symptoms** suggesting possible retained gastric contents, transabdominal **ultrasonography** can be used to assess the stomach (if there is sufficient clinical expertise and the equipment is available) but evidence to support this modality in standard practice is lacking.

- In **symptomatic patients** for whom delaying endoscopy may have negative clinical consequences**, rapid-sequence intubation** is a consideration; however, this may not be possible in most ambulatory or office-based endoscopy settings.

Hashash J, Thompson CC, Wang AY. AGA Rapid Clinical Practice Update on the Management of Patients Taking GLP-1 Receptor Agonists Prior to Endoscopy: Communication. Clinical Gastroenterology and Hepatology. 2023; S1542-3565(23)00869-8.

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- Lastly, when possible, placing patients on **a liquid diet** the day before sedated procedures may be a more acceptable strategy, in lieu of stopping GLP-1 RAs, and **more consistent with the holistic preprocedural management of other similar conditions**.
- In closing, we endorse the multisociety guidance that

- "patient safety will always be paramount, and in the absence of actionable data, we encourage our members to exercise best practices when performing endoscopy on patients on GLP-1 RAs."

Hashash J, Thompson CC, Wang AY. AGA Rapid Clinical Practice Update on the Management of Patients Taking GLP-1 Receptor Agonists Prior to Endoscopy: Communication. Clinical Gastroenterology and Hepatology. 2023; S1542-3565(23)00869-8.

THE OPEN MIND

CME

Anesthetic Considerations in Adult Patients on Glucagon-Like Peptide-1 Receptor Agonists: Gastrointestinal Focus

Girish P. Joshi, MBBS, MD, FFARCSI

Joshi GP. Anesthetic Considerations in Adult Patients on Glucagon-Like Peptide-1 Receptor Agonists: Gastrointestinal Focus. Anesth Analg 2024; 138(1):216-220.

THE OPEN MIND

CME **Anesthetic Considerations in Adult Patients on Glucagon-Like Peptide-1 Receptor Agonists: Gastrointestinal Focus**

Girish P. Joshi, MBBS, MD, FFARCSI

- Reviewed literature and evidence was limited and mixed on Residual Gastric Volume with GLP-1RA
- Large retrospective study 85,116- use of GLP-1RA was not associated with increased residual gastric content

Bi D, Choi C, League J, Camilleri M, Prichard DO. Food residue during esophagogastroduodenoscopy is commonly encountered and is not pathognomonic of delayed gastric emptying. *Dig Dis Sci*. 2021;66:3951–3959.

CME **Anesthetic Considerations in Adult Patients on Glucagon-Like Peptide-1 Receptor Agonists: Gastrointestinal Focus**

Girish P. Joshi, MBBS, MD, FFARCSI

- Other very small studies did show increased RGV in patients on GLP-1RA however were not controlled for other factors
- Type of GLP-1RA, weekly or daily, dose, escalation phase vs tachyphylaxis, duration of therapy, and other conditions impacting gastric emptying like hyperglycemia in poorly controlled T2DM
- Acknowledge that as GLP-1 active in hyperglycemia state there is low risk of hypoglycemia on these agents so benefit of continuing for glycemic control in perioperative timeframe

CME **Anesthetic Considerations in Adult Patients on Glucagon-Like Peptide-1 Receptor Agonists: Gastrointestinal Focus**

Girish P. Joshi, MBBS, MD, FFARCSI

- No evidence to say holding one dose makes a difference
- 3 half lives would eliminate 88% of drug
- To eliminate impact of the medication may need to wait 4-5 half lives – would create harm

CME

Anesthetic Considerations in Adult Patients on Glucagon-Like Peptide-1 Receptor Agonists: Gastrointestinal Focus

Girish P. Joshi, MBBS, MD, FFARCSI

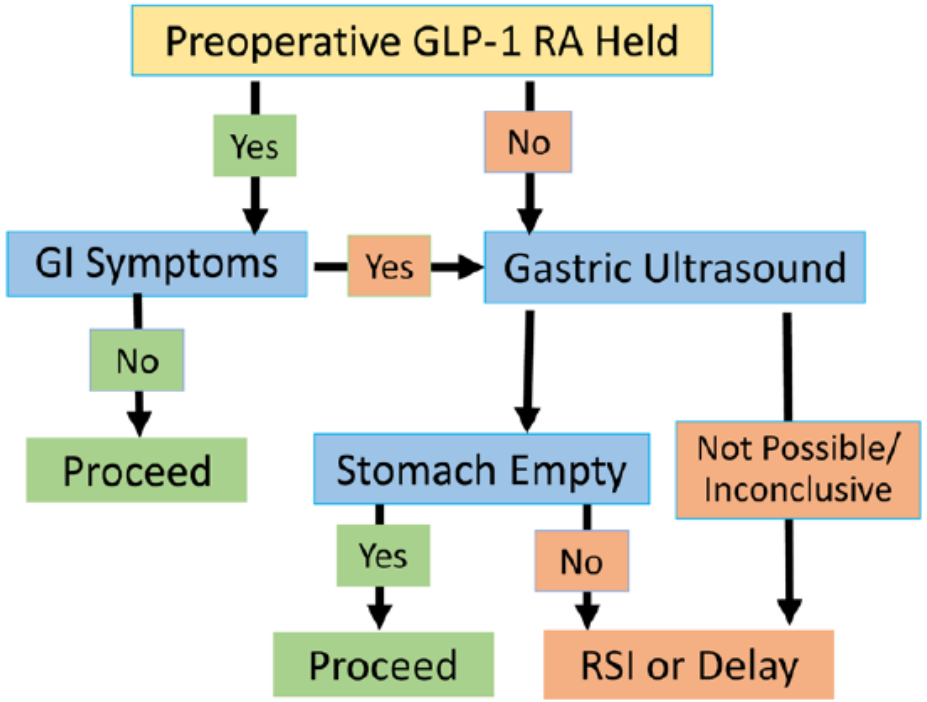

Figure. Management of a patient on GLP-1 RA on the day of the procedure. GI indicates gastrointestinal; GLP-1, glucagon-like peptide-1; RA, receptor agonist; RSI, rapid sequence induction.

- Problem is no pathway to continue medications and proceed with procedure if no GI symptoms
- In this pathway all would need either Ultrasound or RSI
- OR delay or cancellation (negative)

ASMBS Concerns

GLP-1 Meds and Aspiration Concerns:

- Aspiration after general anesthesia has been observed in patients taking GLP1 Receptor agonists, linked to the delayed gastric emptying these meds cause.
- Anesthesia groups are interpreting guidelines to mean that GLP1 meds should be held prior to surgery, leading to short-notice cancellations, particularly in bariatric surgery patients.

Importance of GLP-1 Meds in Metabolic Bariatric Surgery (MBS):

- These meds are crucial for pre-surgery optimization and post-surgical glycemic control.
- They've been safely used in MBS patients for over a decade, with no frequent reports of aspiration linked to anesthesia.
- Preoperative liquid diets for MBS might mitigate the risk of aspiration, suggesting that the practice has protective benefits.

ASMBS Concerns

The Current Protocol and Potential Bias:

- Special considerations have been made for patients with gastroparesis (delayed gastric emptying), but surgeries aren't typically postponed for them.
- The focus on pausing GLP-1 meds indicates potential weight bias, despite the same meds being held in diabetes patients as well.
- Existing protocols allowing clear liquid intake prior to surgery can be used to support continued surgery for patients on a liquid diet.
- Switching meds might also cause patients to lose access to medications.

ASMBS Concerns

Adverse Effects of Holding GLP-1 Meds:

- Withholding GLP1 meds can lead to preoperative hyperglycemia and increased risk of complications. · Other glycemic agents also need to be paused due to acidosis or hypoglycemia risks.
- If GLP1 meds are suspended pre-surgery, they might need to be avoided for nearly 2 weeks, considering the possible nausea on reintroduction.

Challenges with Bridging Medications:

- Although anesthesia guidelines suggest switching to daily meds with shorter half-lives before surgery, the current healthcare environment, characterized by drug shortages and complex authorization processes, makes this unfeasible.
- Switching meds might also cause patients to lose access to certain discounted medications.

ASMBS led unified response

- Contacted several societies with significant interest in the area to create a unified response

ASMBS, AGA, ASGE, ASA, ISPCOP, SAGES

American Society for Metabolic and Bariatric Surgery, American Gastroenterological Association, American Society for Gastrointestinal Endoscopy, American Society of Anesthesiologists, International Society of Perioperative Care of Patients with Obesity, and the Society of American Gastrointestinal and Endoscopic Surgeons

- Representatives from these 6 societies were selected by each society to create a rapid communication unified consensus guidance

Response and multi-society guidance

- Despite limited data to construct evidence-based guidelines, multiple clinical organizations have recognized the need to provide practice guidance regarding the use of GLP-1RAs in the perioperative period

- Inconsistencies in these previous clinical care documents, leading to uncertainty with providers on how to provide safe, effective, and disease-equitable surgical and procedural care to patients taking GLP-1RAs.

- **Purpose** of this clinical practice guide is to offer unified, multi-society guidance for safely managing patients needing GLP-1RA therapy regardless of indication, which currently includes type 2 diabetes, overweight and obesity, and heart failure, during the periprocedural period.

Multi-Society Clinical Practice Guidance for the Safe Use of Glucagon-like Peptide-1 Receptor Agonists in the Perioperative Period

Tammy L. Kindel, Girish P. Joshi, Andrew Y. Wang, Anupama Wadhwa, Allison Schulman, Reem Sharaiha, Matthew Kroh, Omar M Ghanem, Shauna Levy, and Teresa LaMasters

Representing the American Society for Metabolic and Bariatric Surgery, American Gastroenterological Association, American Society for Gastrointestinal Endoscopy, American Society of Anesthesiologists, International Society of Perioperative Care of Patients with Obesity, and the Society of American Gastrointestinal and Endoscopic Surgeons

•Recommendations

- 1. Recommendation 1. Use of GLP-1RAs in the perioperative period should be based on shared decision-making of the patient with procedural, anesthesia, and prescribing care teams balancing the metabolic need for the GLP-1RA with individual patient risk. This can be achieved by developing multidisciplinary protocols/procedures appropriate for individual practices.

a) Care teams should consider the following variables as elevating the risk of delayed gastric emptying and aspiration with the periprocedural use of GLP-1RA:
   - 1. *Escalation phase:* The escalation phase, versus the maintenance phase, is associated with a higher risk of delayed gastric emptying with GLP-1RA usage [10-13]
   - 2. *Higher dose:* The higher the dose of GLP-1RA, the more likely the risk of gastrointestinal side effects [10-13].
   - 3. *Weekly dosing:* Gastrointestinal side effects are more common with weekly compared to daily formulation compounds [14].
   - 4. *Presence of gastrointestinal symptoms*: Symptoms suggestive of delayed gastric emptying and intestinal transit times may include nausea, vomiting, abdominal pain, dyspepsia, and constipation [5].
   - 5. *Medical conditions beyond GLP-1RA usage which may also delay gastric emptying:* Patients on GLP-1RA should be evaluated for other medical conditions which may exacerbate gastrointestinal symptoms and delay gastric emptying, such as but not limited to bowel dysmotility, gastroparesis, and Parkinson's disease.

- The assessment for these risk factors should occur with enough advance time prior to surgery to allow adjustments in pre-operative care if indicated, including diet modification and evaluation of the feasibility of medication bridging if GLP-1RA discontinuation is indicated.

- b) GLP-1RA therapy may be continued pre-operatively in patients without elevated-risk of delayed gastric emptying and aspiration based on Recommendation 1a.
- When an elevated risk of delayed gastric emptying and aspiration exist, **withholding of GLP-1RAs should be balanced with the surgical and medical risk of inducing the potential for a hazardous, metabolic disease state, like hyperglycemia.** Further, bridging therapy off a GLP-1RA may be resource-intensive, cost or insurance prohibitive, and risk other adverse side effects like hypoglycemia.
- Finally, withholding GLP-1RA perioperatively only for patients with diseases of overweight and obesity, without an indication as described in Recommendation 1a, could constitute overweight and obesity bias, which should be avoided.

- c) If the decision to hold GLP-1RAs is indicated given an unacceptable safety profile following shared-decision making in the pre-operative period, the duration to hold therapy is unknown [7]. At this time, it is suggested to follow the original guidance of the American Society of Anesthesiologists, holding the day of surgery for daily formulations, and a week prior to surgery for weekly formulations [4]. All patients should still be assessed on the day of procedure for symptoms suggestive of delayed gastric emptying.

- Recommendation 2. The safe use of GLP-1RAs in the perioperative period should include efforts to minimize the aspiration risk of delayed gastric emptying. This can be achieved by **preoperative diet modification and/or altering anesthesia plan to consider rapid sequence induction** of general anesthesia for tracheal intubation.

- a) Preoperative diet modification (preoperative liquid diet for at least 24 hours, as performed in patients undergoing colonoscopy and bariatric surgery) can be utilized in patients when there is **concern for delayed gastric emptying based on clinical symptom review** as described in Recommendation 1a [5,11,15].

- b) When clinical concern for retained gastric contents exists on the day of the procedure, **point-of-care gastric ultrasound** could be used to assess aspiration risk. This technology may be clinically limited based on institutional resources, inter-user variability, and credentialing requirements [4,16].

- c) When clinical concern for retained gastric contents exists or is confirmed on the day of the procedure, providers should engage patients in a shared-decision-making model and consider the benefits and risks of **rapid sequence induction of general anesthesia for tracheal intubation to minimize aspiration risk versus procedure cancellation** [4,11].

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Recommendation 1	**Standardized pre-operative assessment for risk of delayed gastric emptying (yes/no):** **1. Presence of gastrointestinal symptoms suggesting delayed gastric emptying.[5] Recent dose increases, higher doses, and weekly administered medications may increase the risk of gastrointestinal symptoms[10-14].** **2. Medical conditions beyond GLP-1RA usage which may also delay gastric emptying**
Recommendation 2	Selective pre-operative care plan based on delayed gastric emptying assessment and shared decision-making: 1. Continue GLP-1RA therapy pre-operatively if there is no concern for delayed gastric emptying 2. If elevated risk of delayed gastric emptying exists: a. Recommend liquid only diet for at least 24 hours prior to procedure with usual recommended fasting protocol, or b. Evaluation of the feasibility of medication bridging if GLP-1RA need to be discontinued
Recommendation 3	On the day of procedure, reassess for delayed gastric emptying and mitigate risk if clinical concern: 1. Proceed with procedure as planned if there is no concern for delayed gastric emptying 2. If elevated risk of delayed gastric emptying exists: a. Consider point-of-care gastric ultrasound and/or b. Consider rapid sequence induction of general anesthesia c. Minimize procedure cancellation when possible

Summary

Recommendation 1	**Standardized pre-operative assessment for risk of delayed gastric emptying (yes/no):** **1. *Presence of gastrointestinal symptoms suggesting delayed gastric emptying*.[5] (Recent dose increases, higher doses, and weekly administered medications may increase the risk of gastrointestinal symptoms[10-14]).** **2. Medical conditions beyond GLP-1RA usage which may also delay gastric emptying**

Recommendation 2	**Selective pre-operative care plan based on delayed gastric emptying assessment and shared decision-making:** **1. Continue GLP-1RA therapy pre-operatively if there is no concern for delayed gastric emptying (no symptoms)** **2. If elevated risk of delayed gastric emptying exists:** **a. Recommend liquid only diet for at least 24 hours prior to procedure with usual recommended fasting protocol, or** **b. Evaluation of the feasibility of medication bridging if GLP-1RA need to be discontinued**

Recommendation 3	**On the day of procedure, reassess for delayed gastric emptying symptoms** and mitigate risk if clinical concern: 1. Proceed with procedure as planned if there is no concern for delayed gastric emptying/ no symptoms 2. If elevated risk of delayed gastric emptying exists: a. Consider point-of-care gastric ultrasound and/or b. Consider rapid sequence induction of general anesthesia c. Minimize procedure cancellation when possible

Conclusion

- Understanding that patients taking GLP-1RA may have residual gastric contents

- Be aware of risk factors to select those at higher risk

Conclusion

- **Most important factor is GI symptoms**

- For those without GI symptoms can proceed with procedure
- To further mitigate risk, consider having patients use a liquid diet for 24 hours pre-procedure
- If concerned then may use US and/or RSI “treat as full stomach”

Conclusion

- **Goal is to continue GLP-1RA peri-procedurally in a safe fashion**

- Withholding medication or delay of elective procedure have significant consequences, and should be last resort for most patients

- Use Shared Decision Making- based on shared decision making with the patient and the entire care team

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