

ASMBS guidelines/statements

Multisociety clinical practice guidance for the safe use of glucagon-like peptide-1 receptor agonists in the perioperative period

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Scope of problem and purpose

Glucagon-like peptide-1 receptor agonists (GLP-1RAs) have revolutionized the care of patients with metabolic disease due in part to the agonists' unique combination of effects, including decreasing hyperglycemia and enhancement of satiety [1,2]. GLP-1, a naturally secreted polypeptide, acts

on the GLP-1R in multiple organs, including the pancreas, brain, heart, kidney, and stomach [3]. In the gastrointestinal tract, GLP-1 signals are part of the "ileal brake," increasing gastric emptying time.

An increasing safety concern has developed amongst providers regarding the perioperative use of GLP-1RA due to delayed gastric emptying and subsequent residual gastric contents on the day of the procedure despite traditional fasting [4–6]. There have been reports of pulmonary aspiration of gastric contents in patients on GLP-1RAs undergoing procedural sedation and/or general anesthesia [7–9]. Further, GLP-1RAs induce common side effects of nausea, vomiting, abdominal pain, and constipation, which may complicate the diagnosis and treatment of preoperative and postoperative disease states that share these symptoms [10].

Despite limited data to construct evidence-based guidelines, multiple clinical organizations have recognized the need to provide practice guidance regarding the use of

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GLP-1RAs in the perioperative period [4,11,12]. There have been inconsistencies in these 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. Therefore, the purpose of this clinical practice guide is to offer unified, multisociety 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.

Recommendations

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 preoperative 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 preoperatively 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 the 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 preoperative 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, interuser 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].

Safe continuation of surgery and gastrointestinal endoscopy, and prevention of procedure cancellation, for patients on GLP-1RAs can be prioritized following the recommendations above, as would occur for other patient populations with gastroparesis.

Conclusion

While there has been an exponential increase in the clinical use of GLP-1RAs for various metabolic disease states in the past several years, little evidence exists to guide the best approach to managing these therapeutics perioperatively. This document may need modification with future generations of antiobesity medications, including dual and triple agonists, and as additional evidence on the periprocedural management of these therapeutics is developed. However, at this time based on pharmacology and clinical experience, the following recommendations may be applied for current medications containing a GLP-1RA. For this reason, this multisociety clinical practice document should be considered guidance and not an evidence-based guideline, focusing on shared decision-making and balancing safety processes with therapeutic metabolic need for the safe continuation of surgical and procedural care in patients taking GLP-1RAs.

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