AANA American Association of NURSE ANESTHESIOLOGY

# Anesthesia Care of the Patient on a GLP-1 Receptor Agonist

Certified Registered Nurse Anesthetists (CRNAs) may care for patients taking Glucagon-like peptide-1 (GLP-1) agonists, designed initially to manage type 2 diabetes.

Due to the increased popularity and use of GLP-1 agonists in promoting weight loss, anesthesia professionals need to be prepared for patients who are actively taking these drugs.[1-3]

To support the safety of patients and the knowledge of anesthesia professionals, the AANA Practice Committee offers the following evidence-based perioperative considerations. These considerations can be used to develop facility policies and procedures that align with the best available evidence.

## Available GLP-1 Medications

List of current GLP-1 medications and their FDA-approved uses:

- Type 2 Diabetes:
  - Dulaglutide (Trulicity®)[4] (weekly injection)
  - Exenatide extended release (Bydureon bcise®)[5] (weekly injection)
  - Exenatide (Byetta®)[6] (twice daily injection)†
  - Semaglutide (Ozempic®)[7] (weekly injection)
  - Liraglutide (Victoza®)[8] (daily injection)
  - Lixisenatide (Adlyxin)[9] (daily injection)†
  - Semaglutide (Rybelsus®)[10] (taken orally daily)
  - Tirzepatide (Mounjaro™)[11] (weekly injection)*
- Weight loss:
  - Semaglutide (Wegovy)[12] (weekly injection)
  - Liraglutide (Saxenda®)[13] (daily injection)
  - Tirzepatide (Zepbound™)[14] (weekly injection)*

## Mechanism of Action

- GLP-1 receptor agonists bind and activate the GLP-1 receptors located throughout the body, eliciting a biological response similar to naturally occurring GLP-1. GLP-1 is a gut-derived incretin hormone usually released after orally ingesting fats and carbohydrates.[3, 15, 16]
- In patients with type 2 diabetes, GLP-1 concentrations decrease after an oral glucose load. GLP-1 receptor agonists enhance insulin secretion by increasing glucose-dependent insulin synthesis and the internal secretion of insulin from the beta cells in the pancreas in the presence of elevated glucose.[3, 15, 16]
- Although GLP-1 increases insulin synthesis and secretion, it also suppresses glucagon secretion, reduces food intake through appetite suppression, slows gastric emptying, and promotes beta cell proliferation.[3, 15, 17-19]
- GLP-1 receptor agonists provide cardiovascular protection by lowering blood pressure and indirectly preventing acute cardiac events by preventing coronary atherosclerosis from forming or progressing.[3, 16, 20]

†This medication has been discontinued; however, it is included in the document for the sake of completeness.
*This medication is a dual GIP/GLP-1 receptor agonist.

## Pre-Surgery/Procedure Instructions and Considerations

Considerations for withholding GLP-1 medication:[21]

- The pharmacokinetics of various GLP-1 medications were considered in developing these recommendations. Please review individual medication half-lives when developing a plan of care for individual patients.

- Example recommendations:
  - If daily dose: Consider holding day of surgery/procedure.
  - If weekly dose: Consider holding one week before surgery/procedure.

- There are no changes in fasting guidelines at this time. However, there have been reports of facility-implemented changes like instructing a longer fasting period or clear-liquid diet 1-3 days before the procedure, which have shown improvement in outcomes.[22, 23]

Note: Inform the patient, surgical, and nursing teams of possible risks if the decision is to proceed with the surgery/procedure.

Assess for co-existing disease and the presence of gastrointestinal (GI) symptoms, such as:[18, 24, 25]

- Nausea
- Vomiting
- Diarrhea
- Constipation
- Abdominal bloating
- Abdominal distension

Note: Patients on a once-weekly injection may experience fewer GI symptoms compared to those on a daily injection.[24] Additionally, patients on an increased dosage may experience more side effects compared to those on a lower dose.[19]

## Consider Gastric Point-of-Care Ultrasound (POCUS)[18, 26, 27]

- Gastric POCUS is a tool used to objectively assess gastric contents and aspiration risks at the bedside and can be utilized when gastric contents are uncertain based on subjective assessment alone.[3]

- When performing gastric POCUS, the gastric antrum should be visualized, as this anatomical location produces the most reliable information about gastric contents. To obtain an image, the patient should be positioned in the supine and then right lateral decubitus positions.

- In cases where gastric contents are present, perform a volumetric assessment to stratify aspiration risks.

Note: Gastric POCUS should be utilized if available and only by a trained clinician.

### Postponement vs. Proceeding Considerations[18, 21]

| Presence of GI Symptoms | Withheld Medication According to Suggested Recommendations | Considerations |
|---|---|---|
| Negative | Yes | Consider gastric POCUS to further guide decision making, such as to proceed as usual, delay or proceed as "full stomach." |
| Negative | No | |
| Positive | Yes | |
| Positive | No | Perform gastric POCUS to further guide decision making, such as to delay or proceed as "full stomach." |

Note: In POCUS evaluation, if gastric contents are present or imaging is inconclusive, consider delaying elective procedure or proceeding as "full stomach" to mitigate the risks of regurgitation and aspiration. Routine gastric decompression post-intubation may not be fully achievable due to the volume of solid particulate matter present. Dislodgment of solid particulate into the oropharynx is a known hazard.

### Additional Considerations

- Perform an individualized, case-by-case assessment. For type 2 Diabetes patients, follow facility protocols for endocrinologist consultation.
- After the procedure, restart GLP-1 agonists at the next scheduled dose.
- Engage a multidisciplinary expert panel to achieve consensus and use a tool, such as the AHRQ Patient Education Materials Assessment Tool (PEMAT), to facilitate and validate the development of facility policies, procedures, and patient education resources.

Disclaimer: Please note the information in this document is not written as requirements or standards. These considerations are largely based on expert opinion, as there is limited evidence to develop formal guidelines. This resource is for information only and is not medical or legal advice. These considerations may be used as reference when developing facility policy. CRNAs practice in accordance with professional ethics, scope and standards of practice, sound professional judgment, the best available evidence, the best interest of the patient, and applicable law.

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