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Preoperative GLP-1 Receptor Agonists: ASA Recommendations are Good Enough

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GLP-1 Receptor Agonists: Overview

- Approved for type 2 DM in 2005 (exenatide) and for weight loss in 2014 (liraglutide)
 - Added benefits: cardioprotective effects, down-regulation of inflammatory response, depression, infertility
- GI adverse effects: nausea, vomiting, diarrhea, abdominal pain, ileus
 - During escalation phase (16-20 weeks)

Joshi GP: Anesth Analg 2024; 138: 216-20;
Tong J, D'Alessio D: Diabetes 2014; 63: 407-9

GLP-1 RA Growth



US GLP-1 Agonists Market Size 2020-2032



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GLP-1 Agonists and Regurgitation/Aspiration

- Several anecdotal reports of increased risk of regurgitation/aspiration during deep sedation/GA
 - Yeo YH, et al: Gastroenterology 2024, doi: <https://doi.org/10.1053/j.gastro.2024.03.015>
 - Gulak MA, Murphy P: Can J Anesth 2023; 70: 1397-1400
 - Klein SR, Hobai IA: Can J Anesth 2023; 70: 1394-6
 - APSF Newsletter 2023, June issue
 - Personal communication
 - Patient on Maunjaro for weight loss, scheduled for elective ambulatory surgery, regurgitated and aspirated at extubation, in ICU for a week

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GLP-1 Agonists and Regurgitation/Aspiration During Endoscopy

- Population-based, retrospective cohort study on patients aged 21-70 years, who underwent upper and lower endoscopies between 2018-2020
- 778,253 non-GLP-1 RA and 20,099 GLP-1 RA users included
- Higher incidence of aspiration with GLP-1 RA (0.83% vs. 0.63%)
- Increased aspiration risk with propofol sedation, upper, and combined upper and lower endoscopy
- Lower risk with lower endoscopy

Yeo YH, et al: Gastroenterology 2024, doi: <https://doi.org/10.1053/j.gastro.2024.03.015>

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GLP-1 Agonists Increases Residual Gastric Volume

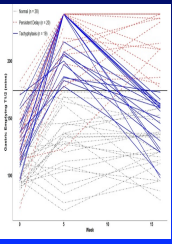
- Several studies report increased residual gastric content during EGD in patients taking GLP-1 agonists
 - Bi D, et al: Digestive Diseases and Sciences 2021; 66: 3951-9
 - Stark JE et al: Ann Pharmacotherapy 2022; 56: 922-6
 - Kobori T, et al: J Diabetes Investig 2023; 14: 767-73
 - Silveira SQ, et al: J Clin Anesth 2023; 87: 111091
- A study using gastric ultrasound showed increased residual gastric volume in patients taking GLP-1 agonists
 - Sherwin M, et al: Can J Anesth 2023; 70: 1300-6
 - Sen S, et al: JAMA Surgery 2024

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Prevalence and variations in gastric emptying delay in response to GLP-1 receptor agonist liraglutide

Camilleri M, et al: Obesity 2024; 32: 232-3

- Post hoc analysis of prospective, placebo-controlled, RCT of liraglutide 3 mg evaluating GE using scintigraphy
- Significant GE delay in 57% (39/67), GE delay was persistent in 30% at 16 weeks
- "Our data illustrate the relevance of the guidance from the American Society of Anesthesiologists on management of GLP-1 RA treatment prior to operative procedures during the preceding week(s) with long-acting GLP-1 RAs or days with short-acting GLP-1 RAs and the option of point-of-care ultrasound to measure gastric residue in such patients."



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Precautionary Principle: Safety First

- With the current signal of concern, rather than assuming GLP-1 receptor agonists are safe during the perioperative period, one would instead assume they may be unsafe and act accordingly (until more evidence has accrued and the true problem—or lack thereof—becomes clearer)

– Weir E, et al. A Canadian framework for applying the precautionary principle to public health issues. Can J Public Health 2010;101:396-8

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Perioperative Care of Patients on GLP-1 Agonists: Multipronged Approach

- Decrease the drug effect on gastric emptying
 - Avoid elective surgery during dose escalation phase
 - Withhold drugs prior to procedure/surgery
- Decrease gastric content
 - Prolong fasting beyond traditional recommendations
 - Liquid diet for 24-48 h
- Identify residual gastric content
 - Significant adverse GI symptoms
 - Gastric ultrasound
- Rapid sequence induction, when appropriate
- Delay procedure

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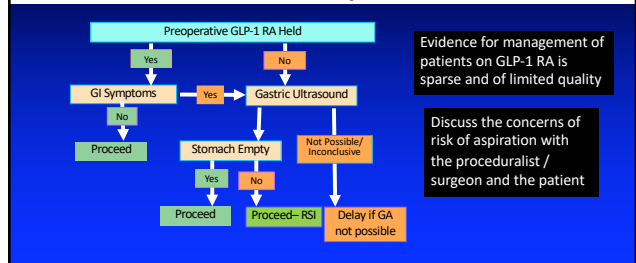
ASA Guidance on Perioperative Care of Patients on GLP-1 Receptor Agonists

- Primary aim of the ASA guidance
 - Inform anesthesia practitioners, non-anesthesiologists (surgeons, proceduralists, etc.), and patients regarding the concerns of regurgitation and aspiration with GLP-1 agonists
- Secondary aim was to provide guidance to mitigate the effects of GLP-1 agonists on gastric emptying

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

Girish P Joshi, MBBS, MD, FFARCSI Anesth Analg 2024; 138: 216-20

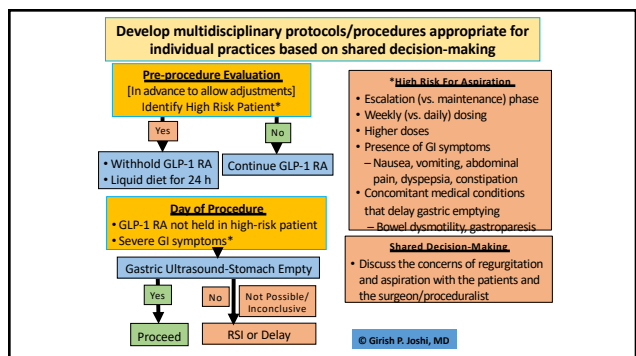


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Summary

- Evidence for delayed gastric emptying and residual gastric contents despite traditional fasting is convincing
- Evidence to provide guidance for preoperative withholding of GLP-1 RAs and duration of fasting is sparse and of low quality
- Strategies to ameliorate the risk of regurgitation/aspiration
 - Avoid elective procedure during dose escalation phase
 - Consider preoperative gastric ultrasound to screen patients for RGV
 - Low threshold for considering rapid sequence induction
- Potential concerns of regurgitation should be discussed with the patient and the proceduralist/surgeon

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