Weight loss and diabetes management drug linked to increased residual gastric content before anesthesia

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UTHealth Houston research team for Glucagon-Like Peptide-1 Receptor Agonist Use and Residual Gastric Content Before Anesthesia: from left, Caroline Praestholm, MS; Sudipta Sen, MD; Omonele Nwokolo, MD; Srikanth Sridhar, MD; Paul Potnuru, MD; Nadia Hernandez, MD; and Christina Goehl, MD. Credit: UTHealth Houston

Safety concerns for patients undergoing anesthesia who use glucagon-like peptide-1 receptor agonists (GLP-1 RAs), which are medications approved for diabetes and weight management, were revealed in a UTHealth Houston study published in *JAMA Surgery*.

The study was led by first author Sudipta Sen, MD, associate professor; and senior author Omonele Nwokolo, MD, professor, both in the Department of Anesthesiology, Critical Care and Pain Medicine at McGovern Medical School at UTHealth Houston.

"Our findings were quite surprising. More than half of the patients on a GLP-1 RA had significant gastric contents on gastric ultrasound before an elective procedure, despite adhering to preoperative fasting," Sen said. "This incidence was significantly higher compared to patients not on a GLP-1 RA, showing a strong link between GLP-1 RA drugs and potential aspiration risk under anesthesia."

The study was prompted by internal quality reviews led by Nwokolo and Srikanth Sridhar, MD, associate professor in the department, after anecdotal cases of aspiration under anesthesia were reported by staff for patients taking this class of medications for weight loss, despite adequate fasting before the procedure. Aspiration is a potentially dangerous condition where stomach contents enter the lungs.

Sen and study co-authors Nadia Hernandez, MD, associate professor, and Christina Goehl, MD, assistant professor, are subspecialized anesthesiologists with expertise in point-of-care ultrasound, which allows bedside assessment of stomach contents. One mechanism of GLP-1 RA medications central to weight loss and glycemic control is slowing of the emptying of gastric contents from the stomach. This increase in residual gastric volumes is identified as a "full stomach" on gastric ultrasound.

This study, designed by Paul Potnuru, MD, assistant professor, examined

more than 120 patients scheduled for elective procedures between June and July 2023. Findings revealed that 56% of patients using GLP-1 RAs exhibited increased residual gastric content, compared to 19% of those who did not take the medication. The study further indicated a 30.5% prevalence of increased residual gastric content with the use of GLP-1 RAs.

With the increasing use of GLP-1 RA medications and their expanding indications for treating various conditions, Sen said conventional fasting times for this patient subset may need to be reexamined.

"Patients must ensure they disclose their use of this medication to their surgeons and anesthesiologists," Sen said. "This information is crucial for us to provide appropriate recommendations, such as adjusting drug administration before elective procedures, recommending extended fasting, or rescheduling an elective procedure if necessary."

In June, 2023, the American Society of Anesthesiologists released new guidance for screening GLP-1 RA use before surgery and informing patients of the risk of adverse outcomes. Recommendations included the consideration of pausing GLP-1 RAs prior to elective surgery.

"Our study fills a significant gap in the current understanding and management of patients on GLP-1 RAs undergoing surgery," Nwokolo said. "The lack of data had previously led societies to rely on expert opinion for guidance. Our evidence paves the way for informed guidelines and further research to mitigate anesthesia-related risks in this patient population."

The study's outcomes prompt a reevaluation of preoperative protocols in this subset of patients, underscoring the significance of patients openly communicating their GLP-1 RA use before surgery.

McGovern Medical School student Caroline Praestholm, MS, also contributed to the study.

More information: Glucagon-Like Peptide-1 Receptor Agonist Use and Residual Gastric Content Before Anesthesia, *JAMA Surgery* (2024). DOI: 10.1001/jamasurg.2024.0111