

Warning and Recommendations from the Department of Cardiovascular Imaging Regarding Transesophageal Echocardiography in Patients Using GLP-1 Analogs

Alex dos Santos Felix,^{1,2} Andre Luiz Cerqueira Almeida,³ Marcelo Dantas Tavares de Melo,⁴ Silvio Henrique Barberato^{5,6}

National Institute of Cardiology,¹ Rio de Janeiro, RJ – Brazil

Diagnosticos da America AS,² Rio de Janeiro, RJ – Brazil

Santa Casa de Misericórdia de Feira de Santana,³ Feira de Santana, BA – Brazil

Universidade Federal da Paraíba,⁴ João Pessoa, PB – Brazil

CardioEco, Centro de Diagnostico Cardiovascular,⁵ Curitiba, PR – Brazil

Quanta diagnóstico e terapia, Ecocardiografia,⁶ Rio de Janeiro, RJ – Brazil

Transesophageal echocardiography is a fundamental diagnostic method for evaluating complex heart diseases. It provides essential data for therapeutic definition and, in some cases, assists in evaluation of percutaneous or surgical interventions.¹

Transesophageal echocardiography exams are performed on outpatients or inpatients, who might be in wards, intensive care units, or even in surgery, with heterogeneous scenarios that need to be individually assessed, not only regarding the exam routine, but also always following precise clinical indications, weighing the risks and benefits for the patient.

To obtain better exam results and facilitate tolerance to the discomfort caused by the presence of the transducer in the oropharynx, we use topical anesthesia with lidocaine in the oropharynx and sedation at varying degrees of intensity, taking into account the patient's age group, clinical conditions, comorbidities, the presence of support from a professional anesthetist, and the respiratory and hemodynamic monitoring resources available.

The incidence of complications related to the exam is quite low, provided that the presence of absolute and relative contraindications is carefully observed (Table 1),² and it must always be performed by a qualified and experienced echocardiography specialist, in order to guarantee maximum safety in the procedure.

We must not neglect the risk of vomiting and bronchoaspiration during the procedure. It is essential for patients to fast appropriately for each clinical situation, respecting the standardized practice of each institution, usually 6 to 8 hours for patients on an oral diet (with residues)

in the absence of conditions that cause obstruction of the gastrointestinal tract or gastric stasis.³

Glucagon-like peptide-1 (GLP-1) analogs, for example, semaglutide, liraglutide, and dulaglutide, used for the treatment of type 2 diabetes and obesity, are medications that require greater care in preoperative assessment in general and specifically in transesophageal echocardiography procedures. Due to the gastric stasis (gastroparesis) caused by these medications, there is an increased risk of periprocedural bronchoaspiration and vomiting, even after the recommended fasting period. The fact that it is a relatively new topic, which still does not have robust evidence and extensive literature, means that there are somewhat conflicting recommendations in the publications issued by different medical societies.

The American Society of Anesthesiologists recommends the following:⁴

- If using GLP-1 analogs with a daily dose, such as liraglutide, continue using them until the day before the procedure.
- If using GLP-1 analogs with a weekly dose, such as semaglutide, continue using them up to 7 days before the procedure.

The Brazilian Society of Diabetes (SBD), on the other hand, recommends the following:⁵

- If using GLP-1 analogs such as lixisenatide, suspend 1 day before the procedure.
- If using GLP-1 analogs with a daily dose, such as liraglutide, suspend 2 days before the procedure.
- If using GLP-1 analogs with a weekly dose, such as semaglutide, suspend 21 days before the procedure.
- If using dulaglutide and tirzepatide, suspend 15 days before the procedure.
- In the event that the patient has not followed the above recommendations, it is possible to evaluate each case individually, preferably assessing the presence of gastric contents by means of ultrasound.

These SBD recommendations have been endorsed by the Brazilian Society of Anesthesia (SBA) under opinion C.SBA 2055/23, issued on July 4, 2023. In the event that the medications were suspended within the recommended timeframe, the fasting period remains as usual.

Keywords

Transesophageal Echocardiography; Diagnosis; Glucagon-Like Peptide 1.

Correspondência: Alex dos Santos Felix •

National Institute of Cardiology, Echocardiography Department. Rua das

Laranjeiras, 374. CEP: 20521-290. Rio de Janeiro, RJ – Brasil

E-mail: alexsfelix@gmail.com

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Table 1 – Relative and absolute contraindications to transesophageal echocardiography. Adapted from Hahn et al.²

Absolute contraindications	Relative contraindications
• Active upper GT bleeding • Esophageal stricture • Esophageal tumor • Esophageal perforation/laceration • Esophageal diverticulum • Intestinal perforation	• History of radiation therapy in neck and mediastinum • History of prior GT surgery • Recent upper GT bleeding • Barrett's esophagus • History of dysphagia • Restricted neck mobility (severe cervical arthritis, atlantoaxial joint disease) • Symptomatic hiatal hernia • Esophageal varices • Coagulopathy, thrombocytopenia • Acute esophagitis • Active peptic ulcer

GT: gastrointestinal tract.

Both guidelines warn that, if the patient has not followed the above recommendations, the assessment of the presence of gastric contents by means of ultrasound may assist in the decision whether or not to suspend the procedure.

While there is no robust evidence available regarding the duration of fasting and/or the duration of suspension of GLP-1 agonists, the Department of Cardiovascular Imaging of the Brazilian Society of Cardiology recommends following the official SBD recommendations.

Author Contributions

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Ethics Approval and Consent to Participate

This article does not contain any studies with human participants or animals performed by any of the authors.



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