FactFinders for Patient Safety

GLP-1 Receptor Agonists and Conscious Sedation

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MYTH: All patients on glucagon-like peptide-1 receptor agonists (GLP-1RA) therapy undergoing elective pain procedures under conscious sedation are required to withhold the medication for a set timeframe before the procedure.

FACT: Based on current multi-society guidance statements, patients without risk factors may continue GLP-1RA therapy in the periprocedural window. However, periprocedural management should incorporate a complete risk assessment and shared decision-making involving the patient, the prescribing care team, the physician, and anesthesia personnel (if involved). It is also recommended that the performing physician carefully consider the necessity of conscious sedation on a case-by-case basis, as it is not necessary in most scenarios.

Glucagon-like peptide-1 receptor agonists (GLP-1RAs) are a novel class of medications for the treatment of type 2 diabetes mellitus (DMT2) and for individuals who are overweight or obese. In addition, GLP-1RAs have demonstrated cardiovascular and/or renal morbidity risk reduction in patients with or without DMT2 [1-3]. GLP-1RAs replicate the action of glucagon-like peptide-1, functioning as part of the "ileal brake" to prolong gastric emptying time, and as a result, reduce hyperglycemia and promote satiety [1]. The likelihood of patients on GLP-1RAs presenting for elective procedures requiring sedation is increasing [2]. GLP-1RAs' common adverse gastrointestinal effects include dyspepsia, constipation, abdominal distention, nausea, and vomiting [1-6].

The continuum of depth of sedation ranges from minimal sedation (anxiolysis) to general anesthesia [7]. This factfinder will focus on GLP-1RAs and conscious sedation (also known as moderate sedation). There have been literature reports of regurgitation and pulmonary aspiration during procedures requiring deep sedation or general anesthesia in patients taking GLP-1RAs; however, there is a lack of such reports in patients receiving minimal or moderate sedation [8-13].

Most importantly, the physician should carefully consider the necessity of sedation on a case-by-case basis, as default utilization is generally not necessary [14,15]. Exceptional circumstances, wherein conscious (moderate) sedation may be considered, include "significant patient anxiety and/or medical comorbidities" and for "procedures that require the patient to remain motionless for a prolonged period of time and/or remain in a painful position" [14]. The safest option for patients on GLP-1RA therapy is likely to perform the intervention with local anesthetic only whenever possible. For additional information regarding conscious (moderate) sedation and interventional pain procedures, please refer to the **Conscious Sedation FactFinder** [15].

Multi-society consensus statements

There is a scarcity of high-quality evidence to guide periprocedural management recommendations for patients taking GLP-1RAs [1,2]. Recommendations have rapidly evolved over time, but have demonstrated significant inconsistencies [2,16]. Recently, various medical societies have collaborated to construct multi-societal practice guidance statements to foster uniformity and reduce ambiguity [1,2]. However, there is limited evidence specific to patients receiving moderate sedation for spine or musculoskeletal interventional pain procedures. These guidance statements focus on GLP-1RAs and sedation or general anesthesia in the "perioperative" window, without stratification for sedation depth, which may or may not limit their applicability to interventional pain procedures performed under moderate sedation [1,2].

The most recent guidance statements indicate that the management of GLP-1RAs in the periprocedural period should be based on a shared decision-making model that involves the patient and the entire care team [interventional pain physician, anesthesia personnel (if involved), and the GLP-1RA prescribing physician] [1,2]. Consideration should be given to the characteristics of the drug, the patient's profile, the specific procedure, and the type of anesthesia [1,2]. These guidance statements indicate that GLP-1RA therapy should be continued preprocedure in patients who do not have an elevated risk of delayed gastric emptying and regurgitation/aspiration [1,2].

Similarly, guidance suggests that adjustments should be made as necessary to minimize aspiration risk during the periprocedural period. Patients at increased risk may continue GLP-1RA therapy with preprocedural dietary modifications, such as a preprocedural liquid diet for at least 24 hours before the procedure to reduce the risk of retained gastric contents (as is typical in patients undergoing colonoscopy and bariatric surgery) [1]. However, there is no objective evidence for the efficacy of prolonged fasting times [2]. If there is clinical concern for retained gastric contents on the day of the procedure, a point-of-care gastric ultrasound may be considered to assess for retained gastric contents and risk for aspiration [1,2].

If the care team determines it is unsafe to continue GLP-1RA therapy, it may be withheld. However, risk versus benefit assessment is warranted due to the potential metabolic implications of withholding GLP-1RA therapy [1,2].

Factors that may increase the risk associated with periprocedural continuation of GLP-1RAs

It has been established that specific factors increase the risk of retained gastric contents and aspiration when using GLP-1RAs in the perioperative setting [1]. These include recent start of the medication, escalation phase of dosing (as opposed to the maintenance phase), higher dose, weekly dosing, presence of gastrointestinal symptoms *(i.e.*, abdominal bloating or pain, nausea, vomiting, or retching), or concomitant use of other medications that may delay gastric emptying [1,2]. Additionally, assessment is recommended for medical conditions that may delay gastric emptying, such as Parkinson's disease, bowel dysmotility, and gastroparesis [1]. In the setting of an elective interventional pain procedure scheduled to be performed under conscious sedation, if retained gastric contents are suspected, the physician should discuss with the patient the option of performing the intervention with local anesthetic only, or the procedure should likely be rescheduled.

Factors to consider with periprocedural discontinuation of GLP-1RAs

The primary risk of holding GLP-1RA therapy is alteration in metabolic equilibrium, primarily hyperglycemia, and the medical complications that may result [1,2]. As such, significant hyperglycemia on the day of the procedure may necessitate rescheduling the procedure [2]. Secondarily, the patient may require bridging therapy while withholding GLP-1RA therapy, which may be impractical in some situations and may introduce the potential for hypoglycemia [1].

Notably, the ideal duration to hold GLP-1RA therapy is unknown [1]. If the decision is made to hold therapy due to an elevated risk profile, holding it at least the day of the procedure for daily formulations and a week before the procedure for weekly formulations is recommended by the American Society of Anesthesiologists (ASA) [1,17]. Complications have still occurred in patients without digestive symptoms who held GLP-1RA therapy for less than 14 days before undergoing esophagogastroduodenoscopy (EGD) while receiving deep sedation or general anesthesia, which limits the generalizability of these findings [18].

Conclusions/Recommendations

There is currently limited evidence to guide recommendations for periprocedural management of GLP-1RA therapy in patients undergoing elective pain interventions under conscious (moderate) sedation. Based on the best available guidance, management may include the following:

Pre-procedure: risk assessment

- The decision to continue or withhold the use of GLP-1RAs in the periprocedural period requires shared decision-making among the physician, anesthesia personnel (if involved), the GLP-1RA prescribing team, and the patient, based on the patient's metabolic and procedural risk profile.
- Current guidance indicates that GLP-1RAs may be continued in patients who do not have an increased risk for delayed gastric emptying.
- Factors associated with an elevated risk include: recently starting the medication, the escalation phase, higher dosing, weekly dosing, pre-procedural gastrointestinal symptoms (*i.e.*, abdominal bloating or pain, nausea, vomiting, or retching), concomitant illness, and/or the use of other medications that may also slow gastric emptying.
- If there is an increased risk of delayed gastric emptying, consensus guidance recommends:
  - Preprocedural diet modification: a liquid diet only for at least 24 hours before the procedure.
  - Alternatively, discontinue GLP-1RA and consider medication bridging if feasible.
- The ideal duration to withhold GLP-1RAs is not known. If the decision is made to withhold, current guidance suggests holding at least on the day of the procedure for daily preparations and 1 week before the procedure for weekly preparations. This is an area of ongoing investigation.

Procedure day: reassess for concerning clinical signs and symptoms of delayed gastric emptying

- Assess for gastrointestinal symptoms, including abdominal bloating or pain, nausea, vomiting, or retching. If present, consider postponing the procedure.
- If there is a clinical concern for retained gastric contents, a point-of-care gastric ultrasound could be used. Utilization may depend on institutional or practice resources as well as the credentialing and expertise of the sonographer.
- Proceed with the planned procedure if there are no concerns regarding retained gastric contents and aspiration.
- If retained gastric contents are suspected, the physician should discuss with the patient the option of performing the intervention with local anesthetic only, or the procedure should likely be rescheduled.

Of Clinical Importance:

- The physician should assess the medical necessity of using conscious sedation for the procedure being considered, as most interventional pain procedures can be safely performed with local anesthetic only.

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