

C-19 Perioperative Management of Patients Taking SGLT2 Inhibitors and GLP-1 Receptor Agonists

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Objective

After completion of this session, the participant will be able to:

- Contrast the perioperative anesthetic management of patients taking glucagon-like peptide-1 (GLP-1) agonists and selective sodium-glucose-cotransporter-2 inhibitors (SGLT-2i).

Case Stem Question

A 57-year-old female patient with history of hypertension, hyperlipidemia, chronic kidney disease stage 3b, obesity class II and paroxysmal atrial fibrillation presents for atrial fibrillation ablation procedure.

Her list of home medications includes amlodipine 5 mg daily, apixaban 5 mg twice a day, atorvastatin 20 mg daily, empagliflozin 10 mg daily, metoprolol tartrate 25 mg twice a day, and semaglutide 2 mg injection once weekly.

On the physical exam, she is 152 cm tall, 88 kg in weight, Mallampati III airway, heart rate is regular in rate and rhythm, lungs are clear to auscultation bilaterally.

Vital signs: 36.8 degree Celsius, heart rate is 65 beats per minute, blood pressure 130/85 mmHg, respiratory rate 18 breaths per minute, oxygen saturation 98% on room air. Finger-stick glucose level is 85 mg/dL.

Guiding Questions for Discussion

1. What questions do you have for this patient regarding her use of empagliflozin that will affect your decision to proceed with general anesthesia for this procedure?
2. The patient denies a history of diabetes and states that she takes semaglutide for weight loss and empagliflozin for renal protection. Her last dose of subcutaneous semaglutide was 3 days ago. She last took empagliflozin yesterday morning, and she has not consumed any solid food in the last 12 hours. Given this information, will you cancel the procedure, or can you perform some further testing to avoid cancelation?
3. What is the function of the sodium-glucose cotransporter 2 in the renal tubules?
4. How can SGLT2 inhibitors cause ketoacidosis?
5. What are some risk factors for euglycemic ketoacidosis in patients taking SGLT2i?
6. Is ketoacidosis a relevant concern in this non-diabetic patient?
7. How long would you recommend that she stop taking empagliflozin prior to a scheduled surgery?

8. Other than empagliflozin, what other SGLT2 inhibitor drugs are commonly prescribed to patients?
9. You get back her lab results and the serum beta-hydroxybutyrate level is zero, pH level is 7.38, and her anion gap is 12. Would you now proceed with the ablation procedure?
10. She last took semaglutide three days ago. But she has not consumed any food in more than 12 hours. You decide to proceed with general anesthesia, would you perform rapid sequence induction?
11. Why are GLP-1 receptor agonists used for weight loss?
12. What are some gastrointestinal related adverse effects of GLP-1 agonists?
13. How long would you recommend stopping her GLP-1 agonist prior to surgery?
14. Other than semaglutide, what other GLP-1 agonist medications are commonly prescribed for chronic weight management?
15. What are some adverse gastrointestinal symptoms in patients taking GLP-1s that are predictive of a full stomach?
16. What concerns and risks related to her use of semaglutide should you discuss with the patient and the proceduralist before you proceed with the procedure?
17. What is the optimal duration of fasting for patients on GLP-1 agonists?
18. You perform rapid sequence induction for general anesthesia and the procedure is completed uneventfully after 4 hours of mapping and ablation. Would you admit this patient postoperatively or would you discharge her home?
19. After 1 hour in the post-anesthetic care unit, the patient complains of nausea, abdominal pain, begins to vomit and becomes progressively lethargic. What is your differential diagnosis?
20. Her temperature is 36.2 degree Celsius; heart rate is 115 beats per minute; respiratory rate 22 breaths per min; blood pressure is 90/50 mmHg; blood glucose level is 185 mg/dL. How would you proceed?
21. What other FDA approved indications are there for SGLT2inhibitors and GLP-1 agonist medications?

22. What challenges does taking SGLT2inhibitors on day of emergency surgery pose for our specialty?

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