Sugar, We're Goin Down
Refractory Hypoglycemia after Counterfeit Ozempic® Use

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Introduction

Semaglutide is a glucagon-like peptide-1 receptor agonist prescribed for diabetes, with recent indication and significant off-label use in metabolic disease and weight loss. Refractory hypoglycemia is not expected after semaglutide use but has been reported in patients using compounded semaglutide[1,2]. Patient with refractory hypoglycemia often require ICU-level care for frequent blood glucose monitoring and dextrose infusions.

Case Presentation

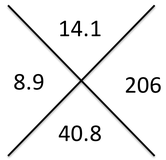
60M with a history of hypertension and hyperlipidemia presented via EMS for a seizure. He had been using Ozempic® (semaglutide) for 3 weeks and increasing the dose independently (0.25mg on week one, 0.35mg on week two, and 0.65mg on week three). Shortly after injecting himself, the patient had tonic-clonic shaking, and his friend called EMS. On EMS arrival, the patient was no longer shaking but was found to by hypoglycemic to 33 mg/dL (72 to 108 mg/dL). EMS gave him 1 ampule of 50% dextrose en route to the ED.

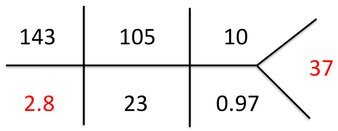
On arrival to the ED, the patient's repeat blood glucose was 34 mg/dL

VS: T: 36.3C, HR: 85, BP: 107/57, RR: 20 SpO2: 99% on room air

Physical examination: Regular HR, lungs clear to auscultation, abdomen soft, nontender. Intermittently alert & oriented x3, no facial asymmetry or droop, 5/5 strength in upper and lower extremities, no sensory deficits.

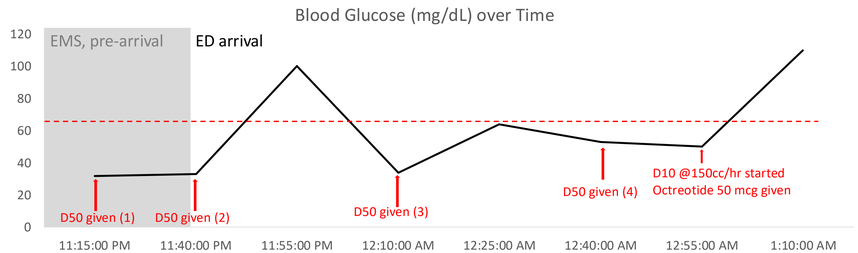
Initial Workup





Troponin: 5 pg/mL
Alcohol: 203 mg/dL
Lactate: 3.7 mmol/L

CTb: No change compared to last CT
CXR: No acute cardiopulmonary process



Despite 4 ampules of 50% dextrose, the patient remained hypoglycemic and was started on a continuous dextrose infusion (D10 at 150cc/hour) and octreotide 50mcq q6hours. The patient was admitted to the medical intensive care unit (MICU) for frequent blood glucose monitoring. He endorsed he received the Ozempic® pen from a friend.

While hospitalized, additional labs returned:
- Insulin level: 24.6uIU/mL (1.9-23.0uIU/mL)
- Pro-insulin level: <4.0pmol/L (<18.8pmol/L)
- C-peptide level: 0.41ng/mL (1.1-4.4ng/mL)
- Sulfonylurea analysis: negative

The patient was weaned off dextrose-containing fluids within 24 hours and discharged home in good conditions in 48 hours.

Discussion

We suspect this patient used insulin being sold as semaglutide[3]. Insulin and sulfonylureas have narrow therapeutic windows and can lead to refractory hypoglycemia with variable lengths of hypoglycemia depending on the agent used[4, 5, 6]. With rising rates of obesity, an increasing number of clinicians are prescribing semaglutide for metabolic syndrome and weight loss. Many patients are turning to websites that do not require a physician's prescription to obtain the drug.[7]

Original Ozempic ® pen (above) and counterfeit version of Ozempic ® (below), both of which were found at wholesalers across Europe during drug shortage in 2023[8]

Case Conclusions

This case covers the management of refractory hypoglycemia attributed to the emerging threat of counterfeit Ozempic® use. Both counterfeit and compounded products have been linked to refractory hypoglycemia. Emergency physicians must maintain a high index of suspicion for unintentional insulin or sulfonylurea overdose or side effects of compounded semaglutide in patients with refractory hypoglycemia after semaglutide use.

References

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