



MON 292

A Diagnostic Dilemma of Hypoglycemia in a Non-Diabetic Patient

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Introduction

Hypoglycemia in non-diabetic patients is an unusual scenario and presents a diagnostic challenge. Medications are a common cause of hypoglycemia in both diabetic and non-diabetic patients ⁽¹⁾. We describe the case of an elderly non-diabetic male who developed severe and persistent hypoglycemia after treatment with doxycycline (DOXY).

Case

A 90-year-old male with a past medical history of chronic atrial fibrillation (AF) and hypertension presented with a 3 week history of fatigue and weakness. He was recently treated for pneumonia as an outpatient with amoxicillin/clavulanic acid. Physical examination was unremarkable except for poor hearing and decreased breath sounds at the lung bases. Chest CT showed bilateral pleural effusions. He was started on DOXY and piperacillin/tazobactam for pneumonia with failed outpatient treatment. His home medications lisinopril and dabigatran were continued.

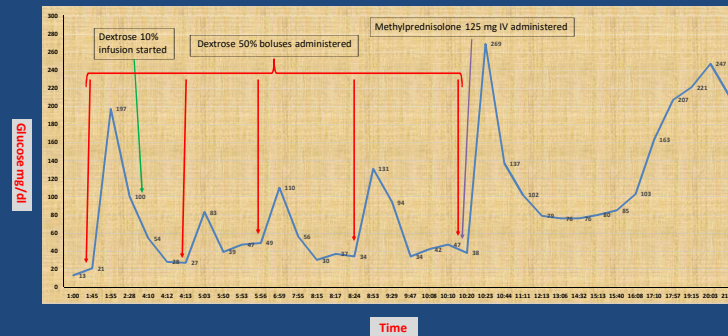
On hospital day 6 the patient had a change in mental status with lethargy, shortness of breath, and rapid AF. Serum glucose was 13 mg/dl; remaining labs were unremarkable. He was transferred to the ICU and given boluses of 50 ml dextrose 50%, and an infusion of dextrose 10% with frequent glucose monitoring. Despite this, the patient's blood glucose continued to drop as low as 30 mg/dl. The patient received intravenous methylprednisolone 125 mg; a cortisol level prior to steroid administration was 16.1 µg/dl (10-20 µg/dl). Subsequent blood glucose increased to 269 mg/dl, but returned to 76 mg/dl two hours later.

He had no personal or family history of diabetes and recent insulin administration.

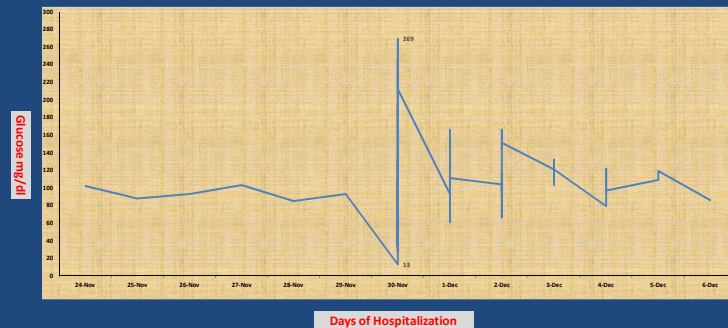
Testing showed

HbA1c 5.6%, negative sulfonyleurea screen, insulin, and C-peptide levels were drawn after the glucose had stabilized to 80-90 mg/dl range, thus were not interpretable. Liver function testing was normal. Abdominal CT ordered by the primary team was negative for an insulinoma.

Variation in Blood Glucose in first 24 hours



Variation in Blood Glucose during the hospitalization



Case

72 hours after DOXY and lisinopril were discontinued the patient's blood glucose returned to normal, and remained stable for the remainder of his admission; he was discharged 5 days later.

Discussion

Medications should be considered as a cause of hypoglycemia. ACE-I are known to cause hypoglycemia, however this is unlikely in this case, as the patient was on lisinopril prior to hospitalization.

Tetracyclines have been described as a cause of hypoglycemia in few case reports. There is only one other case report of DOXY causing hypoglycemia in a non-diabetic patient ⁽²⁾.

The mechanism for hypoglycemia is unclear; proposed mechanisms include

- Increase insulin sensitivity,
- Increased half-life of insulin,
- Interference with epinephrine induced hyperglycemia,
- Tetracycline induced hepatotoxicity ^(3, 4).

Conclusion

Practitioners should be aware of the potential for hypoglycemia in patients prescribed doxycycline, as this is a commonly used medication, and may result in severe and possibly life-threatening hypoglycemia.

References

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