An unusual case of hypoglycemia

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Background

Hypoglycemia is a common clinical problem in patients with diabetes due to insulin or other medications used to maintain glycemic control. In patients without diabetes, hypoglycemia is rare.

Because it is so uncommon in this population, these cases can be missed or recognized late. Further, the correct etiology in these patients is often not explored nor correctly determined.

We present an unusual case of recurrent hypoglycemia in a patient who did not have diabetes, and who was not being treated with antihyperglycemic medications.

Description of a Case

A 55 year old woman with a history of hypothyroidism presented with lightheadedness, “grogginess,” drowsiness,” nausea, and two episodes of vomiting.

Prior to this, she had been having similar episodes—but they had been less severe and shorter in duration.

PMH was positive for a 4 year history of seizures, hot flashes due to menopause, and hypercholesterolemia. Medications included: levothyroxine, levetiracetam, atorvastatin, aspirin, and conjugated estrogens.

She smoked, but denied alcohol or drugs.

Physical Examination

Height was 61 in.; wt. was 140lbs. T 36.9, P 104, R 14, BP 90/59, O2sat 97%.

She was lethargic and answered questions slowly; no definite hyperpigmentation; no goiter; abdomen was diffusely mildly tender without peritoneal signs, masses, or organomegaly; bowel sounds nl; heart and lungs nl; no edema; peripheral pulses were 1+/4 bilaterally; strength was 4+/5 in all major muscle groups. The rest of the exam was nl.

Initial Laboratory

WBC 7,900 with 50% PMNs; 42% L; 5% monos; 2% eos, 1% basos; H/H 14.9/46.7; PLT 173K; Na 134; K 4.1; Cl 103; CO2 20; BUN 17; Cr 1.4 (baseline 0.9 in the past); glucose 22 mg/dL; blood alcohol 0.

Initial Treatment

The patient was given 1.5 L of saline and 25g of D50 followed by D5W at 150 ml/min. The next morning, fasting blood glucose was 55.

Endocrine Evaluation

Free T4 1.0 ng/dL (0.9-1.7); TSH 2.02 mIU/L (0.3-4.2); 10 a.m. cortisol 2.5 mcg/dL (7-25 a.m.); ACTH 168 pg/dL (7.2-63); C-peptide 0.4 ng/mL (1.1-4.4), Ca 8.1; Alb 3.1; Amylase, lipase, LFTs nl; LH, FSH, prolactin nl.

Specific Treatment

In response to the low cortisol, hydrocortisone was begun on the second day at 100 mg IV q6hr, with resolution of hypotension and hypoglycemia. The patient was later converted to oral prednisone and the aldosterone-analogue, fludrocortisone.

Discussion

Hypoglycemia is uncommon in those without diabetes. Some causes include: 1) alcoholism; 2) critical illness; 3) adrenal insufficiency; 4) advanced cancer; and 5) insulin-secreting tumor (insulinoma). Once blood cortisol was measured and found to be very low, the diagnosis of adrenal insufficiency was established. With elevation of pituitary secretion of ACTH, primary adrenal insufficiency was confirmed. Insulinomas are rare. C-peptide is co-secreted with insulin and this was very low in this case, ruling out insulinoma.

Conclusion

It is important to think of adrenal insufficiency in patients with alterations of mental status due to hypoglycemia—especially in the presence of hypotension, nausea, vomiting, weakness and fatigue. Our case eluded diagnosis for 8 months--but once the diagnosis was made and appropriate treatment was begun, the patient did well.